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**GOA CONTROL OF INDUSTRIAL MAJOR ACCIDENT HAZARD RULES**

(as amended)

**I N D E X**

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**CHAPTER – I**  
**PRELIMINARY**

**1. Short title, extent and commencement** – (1) These rules may be called the Goa Factories Rules, 1985

(2) They extend to the whole of the State of Goa.

(3) They shall come into force at once.

**2. Definitions** – In these rules, unless the context otherwise requires, -

(a) “Act” means the Factories Act, 1948 (Central Act 63 of 1948)

(b) “Appendix” means an appendix appended to these rules;

(c) “Artificial humidification” means the introduction of moisture into the air of a room by any artificial means whatsoever except the unavoidable escape of steam or water vapour into the atmosphere directly due to a manufacturing process:

Provided that the introduction of air directly from outside through moistened mats or screens placed in openings at times when the temperature of the room is 80 degrees or more, shall not be deemed to be artificial humidification.

(d) “Belt” includes any driving strap or rope;

(e) “Degrees” (or temperature) means degrees on the Fahrenheit scale;

(f) “District Magistrate” includes such other official as may be appointed by the Government in that behalf;

(g) “Form” means a Form appended to these rules;

(h) “Fume” includes gas or vapour;

(i) “Government” means the Government of Goa;

(j) “Health Officer” means the Municipal Health Officer or Health Officer under the Directorate of Health Services or such other officials as maybe appointed by the Government in that behalf;

(k) “Hygrometer” means an accurate wet and dry bulb hygrometer conforming to the prescribed conditions as regards construction and maintenance;

(l) “Maintained” means maintained in an efficient state, in efficient working order and in good repair;

(m) “Manager” means the person responsible to the occupier for the working of the factory for the purposes of the Act;

(n) “Section” means a section of the Act.

**Rule prescribed under section 2(2) (ca) and Section 112**

**2A- Competent Person.-** (1) The Chief Inspector may recognize any person as ‘competent person’ within such area and for such period as may be specified for the purposes of carrying out test, examinations, inspections and certification for such buildings, dangerous machinery, hoists and lifts, lifting machine and lifting tackles,

pressure plant, confined space, ventilation system and such other process or plant and equipment as stipulated in the Act and the rules made thereunder, located in a factory, if such person possesses the qualifications, experience and other requirements as set out in the schedule annexed to this rule :

Provided that the Chief Inspector may relax the requirements of qualifications in respect of a 'competent person' if such a person is exceptionally experienced and knowledgeable, but not the requirements in respect of the facilities at his command:

Provided further that where it is proposed to recognize a person employed under the Chief Inspector as a 'competent person', concurrence of the State Government shall be taken and such a person, after being so recognized shall not have powers of an 'Inspector'

Provided further that the competent person recognized under this provision shall not be above the age of 62 and shall be physically fit for the purpose of carrying out the test examination and inspection

(2) The Chief Inspector may recognize an institution of repute, having persons possessing qualification and experience as set out in the Schedule annexed for the purposes of carrying out tests, examination, inspections and certification for buildings, dangerous machinery, hoists and lifts, lifting machines and lifting tackles, pressure plant, confined space, ventilation system as stipulated in the Act and the rules made thereunder, as a 'competent person' within such area and for such period as may be specified.

(3) The Chief Inspector on receipt of an application in Form -0.1 or -0.2 from a person or an institution intending to be recognized as a 'competent person, for the purposes of this Act and the rules made thereunder, shall register such application and within a period of sixty days of the date of receipt of application, either after having satisfied himself as regards competence and facilities available at the disposal of the applicant, recognize the applicant as a 'competent person' and issue a certificate of competency in the Form -0.3 or reject the application specifying the reasons thereof.

(4) The Chief Inspector may, after giving an opportunity to the competent person of being heard, revoke the certificate of competency;

- (i) if he has reason to believe that a competent person :-
  - (a) has violated any condition stipulated in the certificate of competency; or
  - (b) has unauthorizedly carried out a test, examination and inspection or has acted in a manner inconsistent with the intent or the purpose of the Act or the rules made thereunder, or has omitted to act as required under the Act or the rules made thereunder; or
- (ii) for any other reason to be recorded in writing;

Explanation: For the purpose of this rule, an institution includes an organization.

(5) The Chief Inspector may, for reasons to be recorded in writing, require recertification of lifting machines, lifting tackles, pressure plant or ventilation system, as the case may be, which has been certified by a competent person outside the State.

## SCHEDULE

Sr. No.	Section or Rules under which competency is recognised	Qualification required	Experience for the purpose	Facilities at his command
1	2	3	4	5
1.	Rules made under section 6 and section 112 Certificate of Stability for buildings.	Degree in Civil or Structural Engineering, or equivalent.	<ul style="list-style-type: none"> <li>(i) A minimum of 10 years experience in the design or construction or testing or repairs of structures;</li> <li>(ii) Knowledge of non-destructive testing, various codes of practices that are current and the effect of the vibrations and natural forces on the stability of the building; and</li> <li>(iii) Ability to arrive at a reliable conclusion with regard to the safety of the structure or the building.</li> </ul>	
2.	Rules made under section 21(2) – “Dangerous Machines”	Diploma in Industrial Safety from the Board of Technical Education of any Government after obtaining Degree/Diploma in Electrical or Mechanical or Textile Engineering or equivalent	<ul style="list-style-type: none"> <li>(i) A minimum of 7 years’ experience in -                             <ul style="list-style-type: none"> <li>a) the design or operation or maintenance; or</li> <li>b) the testing, examination and inspection of relevant machinery, their guards, safety devices and appliances.</li> </ul> </li> <li>(ii) He shall -                             <ul style="list-style-type: none"> <li>a) be conversant with the safety devices and their proper functioning;</li> <li>b) be able to identify defects and any other cause leading to the failure; and</li> <li>c) have ability to arrive at a reliable conclusion with regard to the proper functioning of the safety device and appliance and the machine guard.</li> </ul> </li> </ul>	Gauges for measurement; Instrument for measurement of speed and any other equipment or device to determine the safety in the use of the dangerous machines.

1	2	3	4	5
3.	Section 28 - Lifts and Hoists	Diploma in Industrial Safety from the Board of Technical Education of any Government after obtaining Degree/Diploma in Electrical and/or Mechanical or Textile Engineering or equivalent	(i) A minimum experience of 7 years in – a) design or erection or maintenance; or b) inspection and test procedures of lifts and hoists. (ii) He shall be- a) conversant with relevant codes of practices and test procedures that are current; b) conversant with other statutory requirements covering the safety of the Hoists and Lifts ;able to identify the defects and arrive at a reliable conclusion with regard to the safety of the Hoists and Lifts.	Facilities for load testing tensile testing, gauges, equipments/gadgets for measurement and any other equipment required for determining the safe working conditions of the Hoists and Lifts.
4.	Section 29-Lifting Machinery and Lifting Tackles.	Diploma in Industrial Safety from the Board of Technical Education of any Government after obtaining Degree/Diploma in Mechanical or Electrical, metallurgical Engineering or its equivalent	(i) A minimum experience of 7 years in – a) design or erection or maintenance; or b) testing, examination and inspection of lifting machinery, chains, ropes and lifting tackles. (ii) He shall be -. a) conversant with the relevant codes of practices and test procedures that are current; b) conversant with fracture mechanics and metallurgy of the material of construction; c) conversant with heat treatment/stress relieving techniques as applicable to stress bearing components and parts of lifting machinery and lifting tackles; d) capable of identifying defects and arriving at a reliable conclusion with regard to the safety of the lifting machinery, chains, ropes and lifting tackles.	Facilities for load testing heat treatment, equipment/ gadget for measurement, gauges and such other equipment to determine the safe working conditions of the lifting machinery, tackles

1	2	3	4	5
5.	Section 31- 'Pressure plant'	Diploma in Industrial Safety from the Board of Technical Education of any Government after obtaining Degree/Diploma in chemical or Electrical or Metallurgical or Mechanical Engineering or its equivalent	<ul style="list-style-type: none"> <li>(i) A minimum experience of 10 years in –               <ul style="list-style-type: none"> <li>a) design or erection or maintenance; or</li> <li>b) testing, examination and inspection of pressure plants.</li> </ul> </li> <li>(ii) He shall be -.               <ul style="list-style-type: none"> <li>a) conversant with the relevant codes of practices and test procedures relating to pressure vessels;</li> <li>b) conversant with statutory requirements concerning the safety of unfired pressure vessels and equipment operating under pressure;</li> <li>c) conversant with the non-destructive testing techniques as are applicable to pressure vessels;</li> <li>d) able to identify the defects and arrive at a reliable conclusion with regard to the safety of the pressure plant.</li> </ul> </li> </ul>	Facilities for carrying out hydraulic test, non-destructive test, gauges, equipment/gadgets for measurement and any other equipment or gauges to determine the safety in the use of pressure vessels.
6.	<ul style="list-style-type: none"> <li>(i) Section 36 – Precautions against dangerous fumes</li> <li>(ii) Rules made under Sections 41 and 112 concerning shipbuilding and ship repairs</li> </ul>	Diploma in Industrial Safety from the Board of technical education of any Government after obtaining Degree/Diploma in Chemical Engineering or Master's Degree in chemistry.	<ul style="list-style-type: none"> <li>(i) A minimum experience of 7 years in collection and analysis of environmental samples and calibration of monitoring equipment;</li> <li>(ii) He shall be -.               <ul style="list-style-type: none"> <li>a) Be conversant with the hazardous properties of chemicals and their permissible limit.</li> <li>b) Be conversant with the current techniques of sampling and analysis of the environmental contaminants and</li> </ul> </li> </ul>	Meters, instruments and devices duly calibrated and certified for carrying out the tests and certification of safety in working in confined spaces.

1	2	3	4	5
			c) Be able to arrive at a reliable conclusion as regards the safety in respect of entering and carrying out hot work	
7.	<p>Ventilation Systems as required under various schedules framed under section 87, such as Schedules on –</p> <p>(i) Grinding or glazing of metals and processes incidental thereto</p> <p>(ii) Cleaning or smoothing, roughening, etc. of articles, by a jet sand, metal shot, or grit, or other abrasive propelled by a blast or compressed air or steam.</p> <p>(iii) Handling and processing of Asbestos.</p> <p>(iv) Manufacture of Rayon by Siscose process.</p> <p>(v) Foundry Operations.</p>	<p>Diploma in Industrial Safety from the Board of technical Education of any Government after obtaining Degree/Diploma in Mechanical or Electrical Engineering or its equivalent.</p>	<p>(i) A minimum of 7 years in the design, fabrication, installation, testing of ventilation system and systems used for extraction and collection of dusts, fumes and vapours and other ancillary equipment,</p> <p>(ii) He shall be conversant with relevant codes of practice and tests, procedures that are current in respect of ventilation and extraction system for fumes, and shall be able to arrive at a reliable conclusion with regard to effectiveness of the system.</p>	<p>Facilities for testing the ventilation system, instruments and gauges for testing the effectiveness of the extraction systems for dusts, vapors and fumes, and any other equipment needed for determining the efficiency and adequacy of these systems, He shall have the assistance of a suitable qualified technical person who can come to a reasonable conclusion as to the adequacy of the system.</p>

**3. Approval of plans.** – (1) No site shall be used for the location of a factory or no building in a factory shall be constructed, re-constructed, extended or taken into use as a factory or part of a factory or any other extension of plant or machinery shall be carried out in a factory unless previous permission in writing is obtained from the Chief Inspector of Factories. Application for such permission shall be made in Form 1 which shall be accompanied by the following documents:-

- (a) A flow chart of the manufacturing process supplemented by a brief description of the process in its various stages;
- (b) Plans in duplicate drawn to scale showing:-
  - (i) the site of the factory and immediate surroundings including adjacent buildings and other structures, roads, drains, etc.
  - (ii) the plan, elevation and necessary cross-sections of the various buildings, indicating all relevant details relating to natural lighting, ventilation and means of escape in case of fire. The plans shall also clearly indicate the position of the plant and machinery, aisles and passage ways; and
- (c) Such other particulars as the Chief Inspector may require:

Provided that the provisions of the above sub-rule (1) shall also apply to

- (a) any factory which was either in existence on the date of commencement of the Act or which has not been constructed or extended since then.
- (b) Where any inflammable solvent for the extraction of oil from oil-cakes, oil-seeds or any other material is to be or intended to be used, handled or treated in any manner in any process which may be conducted in any factory, application for such permission shall also be accompanied by a no objection certificate in respect of the site of the factory from the local authority concerned and from an officer not below the rank of Town Planner in Directorate of Town Planning in charge of the area appointed by the Government in this behalf.

(2) If the Chief Inspector is satisfied that the plans are in consonance with the requirements of the Act, he shall, subject to such conditions as he may specify, approve them by signing and returning to the applicant one copy of each plan or he may call for such other particulars as he may require to enable such approval to be given:

Provided that no such approval shall be given in respect of the site of any factory referred to in the proviso to sub-rule (1) unless the Chief Inspector of Factories and the District Magistrate concerned have personally visited the site of the factory and have approved the same, and in case of any difference of opinion among the authorities regarding the location of the plant, the matter shall be referred to the Government for decision:

Provided further that no place shall be disapproved unless the applicant is given an opportunity to be heard and the Chief Inspector or as the case may be, the Government has recorded its reasons in that behalf.

**4. Use of premises as factory** - No occupier shall use any premises as a factory unless:

- (i) The plans are got approved from the Chief Inspector of Factories in respect of the following

Items, namely:-

- (a) site on which the factory is to be situated
  - (b) building and extension used for the purposes of manufacturing process.
  - (c) the layout of plant and machinery
  - (d) any changes, total or partial, in the manufacturing process (es);
- (ii) the factory building, extensions, processes and machinery layout are in conformity with the approved plans;
  - (iii) the conditions subject to which plans are approved, are complied with;
  - (iv) a licence is obtained under rule 7 from the Chief Inspector of Factories or renewed under rule 9, and the said licence is valid at the relevant time.

*Explanation:* For the purpose of this clause a licence shall be deemed to be valid only if-

- (a) the fees, including additional fees, if necessary are paid,
- (b) the employment of workers for which licence is granted is not exceeded.
- (c) the limit of the installed power for which licence is granted is not exceeded.

- 5. Certificate of Stability** – No manufacturing process shall be carried on in any building of a factory constructed, reconstructed or extended, or in any building which has been taken into use as a factory or part of a factory until a certificate of stability, signed by a competent person, in respect of that building in the form given below has been sent by the occupier or manager of the factory to the Chief Inspector, and accepted by him, provided that no manufacturing process (es) shall be carried out in any premises of the factory unless a fresh Certificate of Stability as specified in the form, is obtained from a competent person and submitted to the Chief Inspector of Factories, once in a period of five years or after any extension or alteration, repair or addition of any work of engineering construction or replacement or addition of machinery, plant etc.

**Form of Certificate of stability**

- 1. Name of the factory ...
- 2. Village, town and district in which the factory is situated ...
- 3. Full postal address of the factory ...
- 4. Name of the occupier of the factory ...
- 5. Nature of manufacturing process to be carried on in the factory ...
- 6. Number of floors on which workers will be employed ...
- 7. Nature and amount of moving power ...

I certify that I have personally inspected the building/buildings the plans of which have been approved by the Chief Inspector in his letter No. .... dated .... And examined the various parts including the foundations with special reference to the machinery, plant, etc., that have been installed. I am of the opinion that the building/buildings which has/have been constructed/reconstructed/extended/taken into use is/are in accordance with the plans approved by the Chief Inspector in his letter mentioned above, that it/they is/are structurally sound and that its/their stability will not be endangered by its/their use as a factory/part of a factory for the manufacture of ... for which the machinery, plant, etc. installed are intended.

Signature...

Signature of the Occupier

Date...

Name in block letters .....

Qualification .....

Address .....

Date .....

If employed by a company

or association, name and

address of the company

or association .....

*NOTE:* The person giving the certificate must be –

- (a) A corporate Member of the Institution of Civil Engineers, or
- (b) A corporate Member of the Institution of structural Engineers, or
- (c) A Fellow, Associate or Licentiate of the Royal Institute of British Architects, or
- (d) Be a graduate of Civil Engineers and also be a corporate member of the Institute of Engineers (India)

Provided that no person, except in the case of building occupied or erected by any Government where a certificate may be granted by an officer not below the rank of an Executive Engineers, shall be authorised to sign the certificate of stability if he is in the full time employment of the owner or the builder of the building concerned.

**Explanation:** ‘Work of engineering construction’ means any building, tank, silo, scaffold, platform, chimney, bridge supporting structural work, retaining wall, or any other similar structure.

**6. Application for registration and grant of licence** - (1) The occupier and manager of every factory coming within the scope of the Act, after its commencement shall apply to the Chief Inspector of Factories for registration and grant of licence in Form 2;

(1A) The occupier or manager of a place to which the provisions of the Act are made applicable by a notification under section 85 of the Act, shall submit an application within 30 days of the date of that notification.

(2) Every such application shall be accompanied by a treasury receipt or an invoice for book adjustment, as the case may be, for payment of the fees prescribed for the purpose as specified in the Schedule below:-

**SCHEDULE SPECIFIED UNDER SUB RULE 2 OF RULES 6**

**SCALE OF FEES PAYABLE FOR LICENCE AND ANNUAL RENEWAL OF LICENCE**

**BY FACTORIES**

Quantity of H.P. Installed (Maximum H.P.)	Maximum number of persons to be employed on any day during the year									
	Upto 9	From 10 to 20	From 21 to 50	From 51 to 150	From 151 to 250	From 251 to 500	From 501 to 1000	From 1001 to 2500	From 2501 to 4000	4001 and above
1	2	3	4	5	6	7	8	9	10	11
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Nil	100	125	250	1000	1500	3000	6000	12000	18000	24000
Upto 10	200	400	750	2000	3000	4500	9000	18000	24000	30000
Above 10 but not above 50	300	700	1250	3000	4500	6000	12000	22500	27500	33000
Above 50 but not above 100	800	1250	1750	4500	6000	9000	15000	27000	30000	36000
Above 100 but not above 500	1800	2500	3500	9000	12000	15000	22500	30000	36000	42000
Above 500 but not above 1000	3500	4000	7500	12000	16500	19500	30000	36000	42000	48000
Above 1000 but not above 2000	5000	7000	9500	16500	19500	24000	33000	42000	48000	54000
Above 2000	7000	9500	16500	19500	24000	33000	42000	48000	54000	60000

Provided that –

(i) fees to be charged for the following classes of factories shall, subject to a minimum of rupees five, be half of those specified above, if they do not work for more than 180 days in the aggregate in a calendar year:-

- (a) Gur Factories,
- (b) Cashewnut Factories,
- (c) Rice Mills

- (ii) in the case of other factories working for a part of the year and commencing work on or after 1<sup>st</sup> day of July, the fees to be charged for the first time shall, subject to a minimum of rupees five, be half of those specified in the Schedule aforesaid.

**7. Grant of licence** – The Chief Inspector may, on application being made to him under sub-rule (1) of rule 6 and on payment of the fees prescribed in sub-rule (2) of that rule and on being satisfied that there is no objection to the grant of licence applied for, register the factory and grant a licence in Form 4 to the applicant to use as factory such premises as are specified in the application and subject to compliance with such conditions as are specified in the licence:

Provided that, subject to the provisions of sub-section (3) of Section 6, the Chief Inspector may refuse to register the factory and grant a licence if he is satisfied –

- (i) that an application is not accompanied by plans –
  - (a) of the site on which the factory is to be situated; and
  - (b) for the construction or extension of the factory;
- (ii) that the plans so submitted have not been approved by the Chief Inspector;
- (iii) that the factory has not been constructed in accordance with the plans approved by the Chief Inspector or in compliance with the conditions subject to which the plans are approved;
- (iv) that material requirements of the relevant provisions specified in the Schedules to rule 131 in relation to the factory concerned have not been complied with; or
- (v) that there is imminent danger to life in the factory due to explosive or inflammable dust, gas or fumes, and effective measures in his opinion have not been taken to remove the danger.

(2) Subject to the provisions hereinafter contained with respect to suspension and unless earlier renewed under rule 9, every such licence shall remain in force until the 31<sup>st</sup> day of December of the year for which the licence is granted, or renewed under rule 9.

**8. Amendment of licence** – (1) A licence under rule 7 may be amended by the Chief Inspector.

(2) A licence shall be required to have his licence amended if there is change in the name of the factory or in the site on which the factory is situated or if the factory, for which the licence is granted, exceeds the limits specified in the licence in regard to horse-power or the number of persons employed. The licensee whose licence is required to be amended shall submit it to the Chief Inspector with an application stating the nature of the amendment and reasons thereof; along with the Form 2 duly filled in and signed.

Provided that no amendment of the licence shall be necessary in respect of changes in the number of workers or horse-power or both unless such changes involve higher licence or renewal fee.

(3) Where a licence is required to be amended under sub-rule (2) the fee to be paid for such amendment shall be equal the difference between the licence or renewal fees due on the basis of the higher number of workers and horse power and the fees for the grant of licence or renewal thereof already paid for the year or part thereof.

**9. Renewal of licence** - (1) An application for the renewal of licence ( for a period not exceeding five years) shall be made to the Chief Inspector in Form 3 accompanied by a treasury receipt or an invoice for book adjustment as the case may be for payment of the fees specified in the Schedule attached to rule 6 so as to reach him not later than two months before the date on which the license is due to expire:

Provided that, where a factory commences work on or after the 1<sup>st</sup> day of November in any year application for renewal of licence shall be made on or before the 1<sup>st</sup> day of January next following.

- (2) (a) On receipt of the application under sub-rule(1), the Chief Inspector may, if he is satisfied that there is no objection to the renewal of the licence renew the same for a period not exceeding five years or may, after recording his reasons, refuse the renewal thereof on any of the grounds specified in the proviso to rule 7.
- (b) The Chief Inspector may also refuse the renewal of the licence on the ground that the applicant has been guilty of repeated contraventions of the provisions of the Act or these rules or both or the applicant has obtained the licence by fraud or by misrepresentation.

Provided that in any case falling under clause (a) or (b) before refusing any licence the applicant shall be given an opportunity to show cause why the licence should not be refused:

Provided further that if the period for which the renewal of licence is applied is one year or more but does not exceed five years, the fees payable under this sub-rule therefore per year, shall be at the rate specified in the Schedule attached to rule 6:

Provided also that where the application for the renewal of the licence is made after the expiry of the due date specified in this sub-rule, the additional graded fees at the percentage of the fees payable for the renewal of the licence specified in column (2) of the Schedule hereto shall be payable for such renewal of the licence for the period of delay specified in column (1) of the Schedule.

#### SCHEDULE

Period of delay	Percentage of fees
(1)	(2)
Upto one month	5 percent
Upto two months	10 percent
Upto three months	15 percent
Upto four months	20 percent
Upto five months and above	25 percent

**9A. Revocation of licence:-** The Chief Inspector may, at any time before the expiry of the period for which the licence has been granted or renewed, revoke the licence on any of the grounds specified in the proviso to rule 7 or clause (b) of sub-rule (2) of rule 9.

**10. When licence deemed to be granted or renewed –** Where application for the grant or for renewal of licence is duly made in accordance with these rules, the factory in respect of which the licence is to be granted or renewed, as the case may be, shall be deemed to be duly licensed until such licence is granted or renewed or until an intimation that the grant or renewal of the licence has been refused is communicated to such person.

*Explanation:-* For the purpose of this rule, an application for the grant or renewal of a licence shall be deemed to have been duly made only if it is in the prescribed form and is filled in with all relevant particulars and further is accompanied by a treasury receipt or an invoice for book adjustment, as the case may be, for payment of the fees in accordance with the Schedule annexed to rule 6.

**11. Procedure on death or disability of licensee –**

(1) If a licensee dies or becomes insolvent, the person carrying on the business of such licensee shall not be liable to any penalty under the Act for exercising the powers granted to the licensee by the licence during such time as may reasonably be required to allow him to make an application for the amendment of the licence under rule 8 in his own name for the unexpired portion of the original licence.

(2) Transfer of licence – (i) The holder of a licence may, at any time before the expiry of the licence, apply for permission to transfer his licence to another person.

(ii) Such application shall be made to the Chief Inspector who shall, if he approves of the transfer, enter upon the licence, under his signature, an endorsement to the effect that the licence has been transferred to the person named.

(iii) A fee of fifty rupees shall be charged on each such application.

**12. Loss of licence –** (1) Where a licence granted under these rules is lost or misplaced, a duplicate thereof may be granted on payment of a fee of rupees twenty five and after submitting an affidavit by the occupier stating that the original licence in Form 4 is lost or misplaced.

(2) The Chief Inspector may require a licensee to obtain a duplicate on payment of rupees twenty five, if the original licence is defaced or spoiled.”

Provided that, the Chief Inspector may issue a duplicate licence without charge if he is satisfied that there are good and sufficient reasons for doing so.

**13. Mode of payment of fees. –** (1) Every application under these rules shall be accompanied by a treasury receipt showing that the appropriate amount of fee has been paid into the local treasury under the head of account “0230 – Labour and Employment, 104-Fees realised under Factories Act, 1948”.

Provided that, in the case of a Government factory, the payment of the appropriate amount of fees shall be made in the same manner as payments of amounts due by one Government Department to another are ordinarily made.

(2) If an application for the grant, renewal or amendment of a licence is rejected, the fee paid shall be refunded to the applicant.

(3) Where such application is granted, any amount paid by the applicant in excess of the prescribed fee shall be refundable only after the expiry of one year from the date of such grant or the same may be adjusted against payment of any fees due for the next succeeding year.

**14. Suspension of licence on request of licensee** - (1) If before the 31<sup>st</sup> October of any year an occupier notifies his intention in writing to the Chief Inspector that during the following year the premises in respect of which licence is issued will not be used for the working of the factory, the Chief Inspector may suspend the licence granted in respect of such factory.

(2) A licence suspended under sub-rule (1) may be revived on receipt of an application for renewal in Form 3 accompanied by the licence, for the remaining part of the year, on payment of a surcharge of 10 per cent in addition to the fees specified in these rules.

Form prescribed under sub-section (1) of section 7.

**15. Notice of occupation** – The notice of occupation shall be in Form 2.

**16. Notice of change of manager** – Notice of change of manager, shall be in Form 5.

**16A. Guidelines, instruction and records.**- (1) Without prejudice to the general responsibility of the occupier to comply with the provisions of section 7(A), the Chief Inspector may, from time to time, issue guidelines and instructions regarding the general duties of the occupier relating to health, safety and welfare of all workers while they are at work in the factory.

(2) The occupier shall maintain such records, as may be prescribed by the Chief Inspector, in respect of monitoring of working environment in the factory.”

**CHAPTER II**  
**THE INSPECTING STAFF**

**Rule prescribed under sub-section (I) of Section 8:**

**17. Appointment of Inspectors** – No person shall be appointed as Inspector for the purposes of the Act, unless he possesses the qualifications as prescribed for such Inspectors by any general or special order of the Government at the time of his appointment.

**Rules prescribed under Section 9:**

**18. Powers of Inspectors** – An Inspector shall, for the purpose of the execution of the Act, have power to do all or any of the following things, that is to say:-

- (a) to photograph any worker, to inspect, examine, measure, copy, photograph, sketch or test, as the case may be, any building or room, any plant, machinery, appliance or apparatus; any register or document or anything provided for the purpose of securing the health, safety or welfare of the workers employed in a factory;
- (b) in the case of an Inspector who is a duly qualified medical practitioner to carry out such medical examinations as may be necessary for the purposes of his duties under the Act;
- (c) to prosecute, conduct or defend before a Court any complaint, or other proceeding arising under the Act or in discharge of his duties as an Inspector:

Provided that the powers of the Additional Inspectors shall, unless otherwise expressly provided in the notification under sub-section (5) of Section 8, be limited to the inspection of factories in respect of the following matters, namely:-

Cleanliness (Section 11), over-crowding (Section 16), lighting (Section 17), drinking water (Section 18), latrines and urinals (Section 19), spittoons (Section 20), precautions in the case of fire (Section 38), welfare (Chapter V), working hours of adults (Chapter VI-except the power of exemption under the proviso to section 62), employment of young persons (Chapter VII), leave with wages (Chapter VIII) and display of notice (Section 108):

Provided further that all Additional Inspectors shall report the defects found and remedies suggested for enforcing compliance with requirements of sections referred to above, to the Chief Inspector who shall pass final orders in each case.

**Rule prescribed under sub-section (4) of Section 10:**

**19. Duties of Certifying Surgeon** – (1) For the purposes of the examination and certification of young persons who wish to obtain certificates of fitness, the Certifying Surgeon shall arrange a suitable time and place for the attendance of such persons, and shall give previous notice in writing of such arrangements to the manager of factories situated within the local limits assigned to him.

(2) The Certifying Surgeon shall issue his certificates in Form 6. The foil and counterfoil shall be filled in and the signature or the left thumb impression of the person in whose name the certificate is granted shall be taken on them. On being satisfied as to the correctness of the entries made therein and of the fitness of the person examined, he shall sign the foil and initial the counterfoil and shall deliver the foil to the person in whose name the certificate is granted. The foil so delivered shall be the certificate of fitness granted under section 69. All counterfoils shall be kept by the Certifying Surgeon for a period of at least 2 years after the issue of the certificate.

(3) If a certificate of fitness issued to a young person is lost, on receipt of an application for the grant of a duplicate, the Certifying Surgeon, after making such enquiries as he deems fit, may grant a duplicate thereof. Such application shall be forwarded through the occupier of the factory where the young person is employed.

(4) (a) A fee of rupees ten shall be payable for the issue of every certificate of fitness issued under sub-rule (2) and shall be paid by the occupier;

(b) A fee of rupees five shall be payable for the issue of every duplicate of a certificate issued under sub-rule (2) and shall be paid by the occupier.

(5) The Certifying Surgeon shall, upon request by the Chief Inspector, carry out such examination and furnish him with such report as he may indicate, for any factory or class or description of factories where –

(a) cases of illness have occurred which it is reasonable to believe are due to the nature of the manufacturing process carried out on or other conditions of work prevailing therein; or

(b) by reasons of any change in the manufacturing process carried on, or in the substances used therein, or by reasons of the adoption of any new manufacturing process or of any new substance for use in a manufacturing process, there is a likelihood of injury to the health of workers employed in that manufacturing process; or

(c) young persons are, or are about to be, employed in any work which is likely to cause injury to their health.

(d) The Chief Inspector of Factories has reasons to believe that the workers shall be subjected to pre-employment medical check up at the time of joining the organization and periodical medical examination every five years upto the age of 45 years and thereafter every three years.

(6) For the purpose of the examination of persons employed in processes covered by the rules relating to dangerous operations, the Certifying Surgeon shall visit the factories within the local limits assigned to him at such intervals as are prescribed by the rules relating to such dangerous operations.

(7) At such visits the Certifying Surgeon shall examine the persons employed in such processes and shall record the results of his examination in a register known as the health register (Form 7) which shall be kept by the factory manager and produced to the Certifying Surgeon at each visit.

(8) If the Certifying Surgeon finds as a result of his examination that any person employed in such process is no longer fit for medical reasons to work in that process, he shall suspend such person from working in that process for such time as he may think fit and no

person after suspension shall be employed in that process without the written sanction of the Certifying Surgeon in the health register.

(9) The manager of a factory shall afford to the Certifying Surgeon facilities to inspect any process in which any person employed or is likely to be employed.

(10) The manager of a factory shall provide for the purpose of any medical examination which the Certifying Surgeon wishes to conduct at the factory (for his exclusive use on the occasion of an examination) a room which shall be properly cleaned and adequately ventilated and lighted and furnished with a screen, a table (with writing materials) and chairs.

**CHAPTER III**  
**HEALTH**

**Exemptions under sub-section (2) of Section 11:**

**20. Cleanliness of walls and ceilings** – (1) Clause (d) of sub-section (1) of section 11 of the Act shall not apply to the class or description of the factories or parts of factories specified in the Schedule hereto:

Provided that they are kept in a clean state by washing, sweeping, brushing, dusting, vaccum-cleaning or other effective means:

Provided further that the said clause (d) shall continue to apply –

- (i) as respects factories or parts of factories specified in Part A of the said Schedule, to workrooms in which the amount of cubic space allowed for every person employed in the room is less than 15 cu. Metres;
- (ii) as respects factories or parts of factories specified in Part B of the said Schedule, to workrooms in which the amount of cubic space allowed for every person employed in the room is less than 75 cu. Metres;
- (iii) to engine-houses, fitting-shops, lunchrooms, canteens, shelters, crèches, cloak rooms, rest rooms and wash places; and
- (iv) to such parts of walls, sides and tops of passages and staircases as are less than six metres above the floor or stair.

(2) If it appears to the Chief Inspector that any part of a factory, to which by virtue of sub-rule (1) any of the provisions of the said clause (d) do not apply, or apply as varied by sub-rule (1), is not being kept in a clean state, he may by written notice require the occupier to white wash or colour wash, paint or varnish the same and in the event of the occupier failing to comply with such requisition within two months from the date of the notice, sub-rule (1) shall cease to apply to such part of factory, unless the Chief Inspector otherwise determines.

**SCHEDULE**

**PART-A**

Blast furnaces.

Brick and tile works in which unglazed bricks or tiles are made.

Cement works.

Chemical works.

Gas works.

Iron and steel mills

Stone, slate and marble works.

The following parts of factories:-

Rooms used only for the storage of articles.

Rooms in which the walls or ceilings, consist of galvanised iron, glazed bricks, glass,

slate, asbestos, bamboo, thatch.

Parts in which dense steam is continuously evolved in the process.

Parts in which pitch, tar or like material is manufactured or is used to a substantial extent, except in brush works. The parts of a glass factory known as the glass house. Rooms in which graphite is manufactured or is used to a substantial extent in any process.

Parts in which coal, coke, oxide or iron, ochre, lime or stone is crushed on ground.

Parts of walls, particulars, ceilings or tops of rooms which are at least seven metres above the floor.

Ceilings or tops of rooms in print works, bleach works or dye works with the exception of finishing rooms or warehouses.

Inside walls of oil mills below a height of 1.5 metres from the ground floor level. Inside walls in tanneries below a height of 1.5 metres from the ground floor level where a wet process is carried on.

#### PART – B

Coach and motor body works.

Electric generating or transforming stations.

Engineering works.

Factories in which sugar is refined or manufactured.

Foundaries other than foundaries in which brass casting is carried on.

Ship-building works.

Those parts of factories where unpainted or unvarnished wood is manufactured.

#### **Register prescribed under sub-section (1) of Section 11:**

**21. Record of white-washing, etc.** – The record of dates on which white-washing, colour-washing, varnishing, etc., are carried out shall be entered in a register maintained in Form 8.

#### **Rule prescribed under sub-section (1) of Section 11 and Section 12:**

**22. Compound to be kept clean-** The compound surrounding every factory shall be maintained in a sanitary and clean condition free of rubbish, filth or debris.

#### **Rule prescribed under sub-section (2) of Section 12:**

**23. Disposal of trade wastes and effluents** – (1) In the case of a factory where the drainage system is proposed to be connected to the public sewerage system, prior approval of the arrangements made shall be obtained from the local authority.

(2) In the case of factories other than those mentioned in sub-rule (1), prior approval of the arrangements made for the disposal of trade wastes and effluents shall be obtained from the Goa State Pollution Control Board or such authority as the State Government may appoint in this behalf.

(3) Where, in the opinion of the State Government, operation of effluent treatment plant installed in a factory requires effective supervision from a qualified technical person, the occupier shall, if so required by the State Government, by notification in the Official Gazette, employ such number of technically qualified persons as may be specified in that notification.

(4) No person shall be appointed as technically qualified person to supervise the functioning of the effluent treatment plant for the purpose of these rule, unless he possess at least post graduate Diploma in Environmental Pollution Control Technology awarded by any recognised University.”

**Rule prescribed under Section 13:**

**24. Ventilation and temperature** – (1) In any factory the maximum wet-bulb temperature of air in a work-room at a height of 1.5 metres above the floor level shall not exceed 30 degrees centigrade and adequate air movement of at least 30 metres per minute shall be provided; and in relation to dry-bulb temperature, the wet-bulb temperature in the workroom at the said height shall not exceed that shown in the Schedule annexed hereto, or as regards a dry-bulb readings, that specified in relation to the higher of these two dry-bulb readings:

SCHEDULE	
Dry-bulb temperature	Wet bulb temperature
30 C to 34 C	29 C
35 C to 39 C	28.5 C
40 C to 44 C	28 C
45 C to 47 C	27.5 C

Provided that if the temperature measured with a thermometer inserted in a hollow globe of 15 centimetres diameter coated mat black outside and kept in the environment for not less than 20 minutes exceeds the dry-bulb temperature of air, the temperature so recorded by the globe thermometer shall be taken in place of the dry-bulb temperature:

Provided further that when the reading of the wet-bulb temperature outside in the shade exceeds 27 degrees centigrade, the value of the wet-bulb temperature allowed in the Schedule for a given dry-bulb temperature may be correspondingly exceedd to the same extent:

Provided further that this requirement shall not apply in respect of factories covered by section 15 in respect of factories where the nature of work carried on involves production of excessively high temperature referred to in clause (ii) of sub-section (1) to which workers are exposed for short period of time not exceeding one hour followed by an interval of sufficient duration in thermal environments not exceeding those otherwise laid down in this rule:

Provided further that the Chief Inspector, having due regard to the health of the workers, may in special and exceptional circumstances, by an order in writing exempt any factory or part of a factory from the foregoing requirement, in so far as restricting the thermal conditions within the limits laid down in the Schedule are concerned, to the extent he may consider necessary subject to such conditions as he may specify.

- (2)(a) If it appears to the Inspector that in any factory, the temperature of air in a workroom is sufficiently high and is likely to exceed the limits prescribed in sub-rule (1), he may serve on the manager of the factory an order requiring him to provide sufficient number of whirling hygrometers or any other type of hygrometers and direct that the dry-bulb and wet-bulb readings in each such workroom shall be recorded at such positions as approved by the Inspector, twice during each working shift by a person especially nominated for the purpose by the manager and approved by the Inspector.
- (b) In the Inspector has reason to believe that a substantial amount of heat is added inside the environment of a workroom by radiation from walls, roof or other solid surroundings, he may serve on the manager of the factory an order requiring him to provide one or more globe thermometers referred to in the first proviso in sub-rule (1) and further requiring him to place the globe thermometers at places specified by him and keep a record of the temperatures in a suitable register.
- (3)(a) In every factory the amount of ventilating openings in a workroom below the eaves shall, except where mechanical means of ventilation as required by clause (b) below are provided, be of an aggregate area of not less than 15% of the floor area and shall be so located as to afford a continued supply of fresh air:

Provided that the Chief Inspector may relax the requirements regarding the amount of ventilating openings if he is satisfied that having regard to the location of the factory, orientation of the workroom, prevailing winds, roof height and the nature of manufacturing process carried on, sufficient supply of fresh air into the workroom is afforded during most of the part of the working:

Provided further that this requirement shall not apply in respect of workrooms of factories –

- (i) covered by section 15; or
- (ii) in which temperature and humidity are controlled by refrigeration.
- (b) Where in any factory owing to special circumstances such as situation with respect to adjacent buildings and height of the building with respect to floor space, the requirements of ventilation openings under clause (a) of this sub-rule cannot be complied with or in the opinion of the Inspector the temperature of air in a workroom is sufficiently high and is likely to exceed the limits prescribed in sub-rule (1), he may serve on the manager of the factory an order requiring him to provide additional ventilation either by means of roof ventilators or by mechanical means.
- (c) The amount of fresh air supplied by mechanical means of ventilation in an hour shall be equivalent to at least six times the cubic capacity of the workroom and shall be distributed evenly throughout the workroom without dead airpockets or undue draughts – caused by high inlet velocities.
- (d) In regions where in summer (15<sup>th</sup> March – 15<sup>th</sup> July) dry-bulb temperatures of outside air in the shade during most part of the day exceed 35 degrees centigrade and simultaneous wet-bulb temperatures are 25 degrees centigrade or below and in the opinion of the Inspector the manufacturing process carried on in the workroom of a factory permits thermal environments with relative humidity of 50% or more, the Inspector may serve on the manager of the factory an order to have sufficient supply of outside air for ventilation cooled by passing it through

water sprays either by means of unit type of evaporative air coolers (desert coolers) or, where supply of outside air is provided by mechanical means through ducts in a plenum system, by means of central air washing plants.

**Rules 25 to 35 prescribed under sub-section(1) of Section 15:**

**25. When artificial humidification not allowed** – There shall be no artificial humidification in any room of a cotton spinning or weaving factory –

- (a) by the use of steam during any period when the dry bulb temperature of that room exceeds 29.5 degrees centigrade; and
- (b) at any time when wet bulb reading of the hygrometer is higher than that specified in the following schedule in relation to the dry-bulb reading of the hygrometer at that time; or as regards a dry-bulb reading intermediate between any two dry-bulb readings indicated consecutively in the Schedule when the dry-bulb reading does not exceed the wet-bulb reading to the extent indicated in relation to the lower of these two dry-bulb readings:-

**SCHEDULE**

Reading in degrees centigrade

Dry-bulb	Wet-bulb	Dry-bulb	Wet-bulb	Dry-bulb	Wet-bulb
15.5	14.5	25.0	24.0	34.5	30.0
16.0	15.0	25.5	24.5	35.0	35.5
16.5	15.5	26.0	25.0	35.5	31.0
17.0	16.0	26.5	25.5	36.0	31.0
17.5	16.0	27.0	26.0	36.5	31.5
18.0	16.5	27.5	26.0	37.0	31.5
18.5	17.0	28.0	26.5	37.5	31.5
19.0	18.0	28.5	27.0	38.0	32.0
19.5	18.5	29.0	27.0	38.5	32.0
20.0	19.0	29.5	28.0	39.0	32.0
20.5	19.5	30.0	28.0	39.5	32.5
21.0	20.0	30.5	28.5	40.0	32.5
21.5	20.5	31.0	28.5	40.5	33.0
22.0	21.0	31.5	29.0	41.0	33.0
22.5	21.0	32.0	29.0	41.5	33.0
23.0	21.5	32.5	29.0	42.0	33.0

Reading in degrees centigrade

Dry-bulb	Wet-bulb	Dry-bulb	Wet-bulb	Dry-bulb	Wet-bulb
23.5	22.0	33.0	29.5	42.5	33.0
24.0	23.0	33.5	29.5	43.0	33.5
24.5	23.5	34.0	30.0	43.5	33.5

Provided, however, that clause (b) shall not apply when the difference between the wet-bulb temperature is indicated by the hygrometer in the department concerned and the wet-bulb temperature taken with a hygrometer outside in the shade is less than 2 degrees.

**26. Provision of hygrometer** – In all departments of cotton spinning and weaving mills wherein artificial humidification is adopted, hygrometers shall be provided and maintained in such positions as are approved by the Inspector. The number of hygrometers shall be regulated according to the following scale:-

(a) Weaving department –

One hygrometer for departments with less than 500 looms, and one additional hygrometer for every 500 or part of 500 looms in excess of 500.

(b) Other departments –

One hygrometer for each room of less than 8500 cubic metres capacity and one extra hygrometer for each 5670 cubic metres or part thereof, in excess of this.

(c) One additional hygrometer shall be provided and maintained outside each cotton spinning and weaving factory wherein artificial humidification is adopted, and in a position approved by the Inspector, for taking hygrometer shade readings.

**27. Exemption from maintenance of hygrometers** – When the Inspector is satisfied that the limits of humidity allowed by the Schedule to rule 25 are never exceeded, he may, for any department other than the weaving department, grant exemption from the maintenance of the hygrometer. The Inspector shall record such exemption in writing.

**28. Copy of Schedule to rule 25 to be affixed near every hygrometer** – A legible copy of the Schedule to rule 25 shall be affixed near each hygrometer.

**29. Temperature to be recorded at each hygrometer** – At each hygrometer maintained in accordance with rule 26, correct wet and dry-bulb temperatures shall be recorded thrice daily during each working day by competent persons nominated by the manager and approved by the Inspector. The temperature shall be taken between 6 am and 9 am, between 11 am and 14 pm (but not in the rest interval) and between 16 pm and 17.30 pm. In exceptional circumstances, such additional readings and between such hours as the Inspector may specify, shall be taken. The temperature shall be entered in Humidity Register in Form 9, maintained in the factory. At the end of each month, the persons who have taken the readings shall sign the Register and certify in the Register the correctness of the entries. The register shall always be available for inspection by the Inspector.

**30. Specifications of hygrometer** – (1) Each hygrometer shall comprise of two mercurial thermometers of wet-bulb and dry-bulb of similar construction, and equal in dimensions, scale and divisions of scale. They shall be mounted on a frame with a suitable reservoir containing water.

(2) The wet-bulb shall be closely covered with a single layer of muslin, kept wet by means of a wick attached to it and dropping into the water in the reservoir. The muslin covering and the wick shall be suitable for the purpose, clean and free from size or grease.

(3) No part of the wet-bulb shall be within 76 millimetres from the dry-bulb or less than 25 millimetres from the surface of the water in the reservoir and the water reservoir shall be below it, on the side of it away from the dry-bulb.

(4) The bulb shall be spherical and of suitable dimensions and shall be freely exposed on all sides to the air of the room.

(5) The bores of the stems shall be such that the position of the top of the mercury column shall be readily distinguishable at a distance of 60 centimetres.

(6) Each thermometer shall be graduated so that accurate readings may be taken between 10 and 50 degrees centigrade.

(7) Every degree from 10 degrees upto 50 degrees shall be clearly marked by horizontal lines on the stem, each fifth degree shall be marked by longer marks than the intermediate degrees and the temperature marked opposite each fifth degree, i.e. 10, 15, 20, 25, 30, 35, 40, 45, 50.

(8) The markings as above shall be accurate, that is to say, at no temperature between 10 and 50 degrees shall the indicated readings be in error by more than one ninth of a degree.

(9) A distinctive number shall be indelibly marked upon the thermometer.

(10) The accuracy of each thermometer shall be certified by the National Physical Laboratory, Delhi, or some competent authority appointed by the Chief Inspector and such certificate shall be attached to the humidity register.

**31. Thermometers to be maintained in efficient order** – Each thermometer shall be maintained at all times during the period of employment in efficient working order, so as to give accurate indications and in particular –

(a) the wick and the muslin covering of the wet-bulb shall be renewed once a week;

(b) the reservoir shall be filled with water which shall be completely renewed once a day. The Chief Inspector may direct the use of distilled water or pure rain water in any particular mill or mills in certain localities; and

(c) no water shall be applied directly to the wick or covering during the period of employment.

**32. Inaccurate thermometer not to be used without fresh certificate** – If an Inspector gives notice in writing that a thermometer is not accurate, it shall not, after one month from the date of such notice, be deemed to be accurate unless and until it has been re-examined as prescribed and a fresh certificate obtained which certificate shall be kept attached to the humidity register.

**33. Hygrometer not to be affixed to wall, etc. unless protected by wood** – (1) No hygrometer shall be affixed to a wall, pillar, or other surface unless protected therefrom by wood or other non-conducting material of at least 12 millimetres in thickness and at a distance of at least 25 millimetres from the bulb of each thermometer.

(2) No hygrometer shall be fixed at a height of more than 170centimetres from the floor to the top of thermometer stem or in the direct draughts from a fan, window or ventilating opening.

**34. No reading to be taken within 15 minutes of renewal of water** – No reading shall be taken for record on any hygrometer within 15 minutes of the renewal of water in the reservoir.

**35. How to introduce steam for humidification** – In any room in which steam pipes are used for the introduction of steam for the purpose of artificial humidification of the air, the following provisions shall apply:-

- (a) the diameter of such pipes shall not exceed 50 millimetres and in the case of pipes installed after 1<sup>st</sup> day of January 1950, the diameter shall not exceed 25 millimetres;
- (b) such pipes shall be as short as are reasonably practicable;
- (c) all hangers supporting such pipes shall be separated from the bare pipes by an efficient insulator not less than half an inch in thickness;
- (d) no uncovered jet from such pipe shall project more than 11.5 centimetres beyond the outer surface of any cover;
- (e) the steam pressure shall be as low as practicable and shall not exceed 5 kilograms per square centimetre; and
- (f) the pipe employed for the introduction of steam into the air in a department shall be effectively covered with such non-conducting material, as may be approved by the Inspector in order to minimise the amount of heat radiated by them into the department.

**Rules 36 to 40 prescribed under Sub-section (4) of Section 17.**

**36. Lighting application and commencement-** Subject to the provisions as contained hereunder, rules 36 to 40 shall apply to factories in which persons are being regularly employed in a manufacturing process or processes for more than 48 hours a week, or in shifts, provided that nothing in these rules shall be deemed to require the provision of lighting of a specified standard in any building or structure so constructed that, in the opinion of the Chief Inspector, it would not be reasonably practicable to comply with such requirement.

**37. Lighting of interior parts** – (1) The general illumination over those interior parts of a factory where persons are regularly employed shall be not less than 65 lux measured in the horizontal plane at a level of 90 cms. Above the floor.

Provided that in any such parts in which the mounting height of the light source or general illumination necessarily exceeds 7.6 metres measured from the floor or where the structure of

the room or the position or where the structure of the room or the position or construction of the fixed machinery or plant prevents the uniform attainment of this standard, the general illumination at the said level shall be not less than 22 lux and where work is actually being done the illumination shall be not less than 65 lux.

(2) The illumination over all other interior parts of the factory over which persons employed pass shall, when and where a person is passing, be not less than 5 lux at floor level.

(3) (i) In every factory, where natural lighting is not such that day light conditions are fairly uniform over the working or other areas and/or lighting, which shall be of uniform level, widely distributed to avoid hard shadows or strong contrast and free from direct or reflected glare, shall be provided. The minimum intensity of illumination for the different areas and work-rooms of the type given under column No. 2 shall be as given under column No. 3 of the Schedule 'A' appended hereto;

(ii) Notwithstanding the above, in every factory, where intense local lighting is further necessary on account of nature of work as mentioned in the column No. 2 of the Schedule 'B' appended hereto, the same shall be obtained by a combination of general lighting and supplementary lighting at the point of work. The minimum intensity of illumination for different tasks shall be as given under column No. 4 of the said Schedule.

(iii) In case of any doubt or dispute in regard to the classification of areas or tasks specifically mentioned in Schedule 'A' or corresponding to the examples mentioned in Schedule 'B' respectively, the decision of the Chief Inspector of Factories shall be final.

#### SCHEDULE 'A'

Sr. No.	Areas and work-room	Minimum intensity of illumination In Lux
1.	Stock-yards, main entrance and exit roads, cat-walls of outdoor plants, coal unloading and storage areas	20
2.	Passage-ways, corridors and stairways, warehouses, stock-rooms for large and bulky materials, platforms of outdoor plants, basements.	50
3.	Engine and boiler rooms, passengers and freight elevators, conveyers crating and boxing departments, store-rooms and stock-rooms for medium and fine materials, lockers rooms, toilet and wash rooms.	100

SCHEDULE 'B'

Sr. No.	Nature of work	Examples	Minimum intensity of illumination In Lux
1	2	3	4
1.	Where discrimination of detail is not essential	Handling of material of coarse nature, rough sorting, grinding of clay products, handling coal or ashes.	50
2.	Where slight discrimination details is essential	Production of semifinished iron and steel products, rough assembling, milling of grains, opening, carding, drawing, slubbing, roving spinning (ordinary) counts of cotton.	100
3.	Where moderate discrimination of detail is essential	Medium assembling, rough bench work and machine work, inspection and testing of products, canning sewing, ventering planning of lumber, sewing of light coloured textiles and leather products, weaving light thread, warping, slashing doubling (fancy) spinning fine counts.	200
4.	Where close discrimination of detail is essential	Medium bench and machine work fine testing flour grading, leather finishing, weaving cotton goods or light coloured woolen goods, welding sub-assembly drilling, riveting, book-binding and folding.	300
5.	Where discrimination of detail is involved under a fair degree of contrast for long periods of time.	Fine assembling, fine bench and machine work, fine inspection, fine polishing and beveling of glass, fine wood working weaving dark coloured woolen goods.	500
6.	Where discrimination of detail is extremely fine detail is involved under conditions of extremely poor contrast for long periods of time.	Extra fine assembling, extra fine inspection, testing of extra fine instruments, jewellery and watch manufacturing, grading and working of tobacco products, dark cloth hand tailoring, final perching in dye works, make-up and proof-reading in printing plants.	1,000

(4) The standard specified in this rule shall be without prejudice to the provision of any additional illumination required to render the lighting sufficient and suitable for the nature of the work.

**38. Prevent of glare** – (1) Where any source of artificial light in the factory is less than 4.9 metres above floor level, no part of the light source or of the lighting fitting having a brightness greater than 1.55 candles per sq. centimetre shall be visible to persons whilst normally employed within 30 metres of the source except where the angle of elevation from the eye to the source or part of the fitting, as the case may be exceeds 20 deg.

(2) Any local light, that is to say, an artificial light designed to illuminate particularly the area or part of the area of work of a single operative or small group of operatives working near each other, shall be provided with a suitable shade of opaque material to prevent glare or with other effective means by which the light source is completely screened from the eyes of every person employed at a normal working place, or shall be so placed that no such person is exposed to glare therefrom.

**39. Power of Chief Inspector to exempt** – Where the Chief Inspector is satisfied in respect of any particular factory or part thereof or in respect of any description of workroom or process that any requirement of rules 37 and 38 is inappropriate or is not reasonably practicable, he may by order in writing exempt the factory or part thereof, or description of workroom or process from such requirement to such extent and subject to such conditions as he may specify.

**40. Exemption from rule 37.** – (1) Nothing in rule 37 shall apply to the parts of factories specified in Part I of the Schedule annexed hereto.

(2) Nothing in sub-rule (1) of rules 37 shall apply to the factories or parts of factories respectively specified in Part II of the said Schedule.

## SCHEDULE

### PART I

Parts of factories in which light sensitive photographic materials are made or used in an exposed condition or where such exposing operations are carried on.

### PART II

Cement works.

Works for the crushing and grinding of limestone.

Gas works.

Coke oven works.

Electrical stations.

Flour mills.

Maltings and breweries.

Parts of factories in which the following processes are carried on:-

- Concrete or artificial stone making.
- Conversion of iron into steel.
- Smelting of iron ore.
- Iron or steel rolling
- Hot rolling or forging, tempering or annealing of metals.
- Glass blowing and other working in molten glass.
- Tar distilling.
- Petroleum refining and bleding.

**Rules 41 to 46 prescribed under Sub-section (I) of Section 18.**

**41. Quantity of drinking water** – The quantity of drinking water to be provided for the workers in every factory shall be at least five litres a day per worker employed in the factory and such drinking water shall be readily available at all times during working hours.

**42. Source of supply** – The water provided for drinking shall be supplied –

- (a) from the taps connected with a public water supply system, or
- (b) from any other source approved in writing by the Medical Inspector of Factories.

The water so supplied shall be kept in suitable vessels, receptacles or tanks fitted with taps, having dust proof covers, and placed on raised stands or platforms in shade and having suitable arrangement of drainage to carry away the waste water. Such vessels, receptacles or tanks shall be kept clean and the water replaced at least once every day. Also, all practicable measures shall be taken to ensure that the water is free from contamination.

**43. Omitted.**

**44. Cleanliness of wells or reservoir** – (1) Drinking water shall not be supplied from any open well or reservoir unless it is so constructed, situated, protected and maintained as to be free from the possibility of pollution by chemical or bacterial and extraneous impurities.

(2) Where drinking water is supplied from such well or reservoir the water in it shall be sterilized once a week or more frequently if the Inspector by written order so requires, and the date on which sterilising is carried out shall be recorded;

Provided that this requirement shall not apply to any such well or reservoir if the water therein is filtered and treated to the satisfaction of the Health Officer before it is supplied for consumption.

**45. Report from Health Officer** – The Inspector may by order in writing, direct the manager to obtain, at such time or at such intervals as he may direct, a report from the Health Officer as to the fitness for human consumption of the water supplied to the workers and in

every case to submit to the Inspector a copy of such report as soon as it is received from the Health Officer.

**46. Water Centres** - In every factory wherein more than 250 workers are ordinarily employed –

- (a) the drinking water supplied to the workers shall from the 1<sup>st</sup> of November of every year to 31<sup>st</sup> May of the succeeding year be cooled by ice or other effective method:

Provided that if ice is placed in the drinking water, the ice shall be cleaned and wholesome and shall be obtained only from a source approved in writing by the Health Officer.

- (b) (i) the cooled drinking water shall be supplied in every canteen, lunch-room and rest-room and also at conveniently accessible points throughout the factory which for the purpose of these rules shall be called ‘Water Centres’.
- (ii) at least one such water centre shall be provided on each floor if the factory has more than one floor;
- (c) the ‘Water Centres’ shall be sheltered from the weather and adequately drained;
- (d) (i) the number of ‘Water Centres’ to be provided shall be one ‘Water Centre’ for every 150 workers or part thereof employed at any one time in the factory.

Provided that in the case of the factory where the number of persons employed exceeds 500, it shall be sufficient if there is one ‘Water Centre’ as aforesaid for every 150 persons or part thereof thereafter, and in counting the number, account shall be taken of the maximum number of workers working at any time during the day.

- (ii) where drinking water is provided through taps or through drinking fountains each ‘Water Centre’ shall have at least three such taps or fountains. The taps or fountains shall be at least 60 cms apart, and shall have a trough to drain away the waste water. The trough and the walls and platform near the tap shall be laid in glazed tiles;

Provided that where mechanical refrigerating units with drinking water fountains distributed throughout the factory, are provided, the number of ‘Water Centres’ may not be according to the standards prescribed under sub-clause (i) above, as long as the total number of fountains provided is in accordance with the prescribed standard that is the number of ‘Water Centres’ as prescribed in sub-clause (i) were provided;

- (e) (i) every ‘Water Centre’ shall be maintained in a clean and orderly condition;
- (ii) every ‘Water Centre’ shall be in charge of a suitable person who shall distribute the water and who shall be provided with clean clothes while on duty:

Provided that in respect of factories where mechanical refrigerating units and taps are provided to the satisfaction of the Chief Inspector, he may exempt such a factory on an application made by the manager from the provisions of sub-clause (ii) on such conditions as he may deem fit.

**Rules 47 to 56 prescribed under Sub-section (3) of Section 19.**

**47. Latrine accommodations** – Latrine accommodation shall be provided in every factory on the following scale:-

- (a) where females are employed, there shall be at least one latrine for every 25 females;
- (b) where males are employed, there shall be at least one latrine for every 25 males:

Provided that where the number of males employed exceeds 100, it shall be sufficient if there is one latrine for every 25 males upto the first 100, and one for every 50 thereafter.

In calculating the number of latrines required under this rule, any odd number of workers less than 25 or 50, as the case may be, shall be reckoned as 25 or 50 and the number of workers to be considered shall be the maximum number employed at any time during the day.

**48. Privacy of latrines** – Every latrine shall be under cover and so partitioned off as to provide privacy, and shall have a proper door and fastenings.

**49. Sign-boards to be displayed** – Where workers of both sexes are employed, there shall be displayed outside each latrine block a notice in the language understood by the majority of the workers “For Men Only” and “For Women Only”, as the case may be. The notice shall also bear the figure of a man or of a woman, as the case may be.

**50. Urinal accommodation** – Urinal accommodation shall be provided for the use of male workers and there shall be at least one urinal of not less than 60 centimetres in length for every 50 males:

Provided that where the number of males employed exceeds 500, it shall be sufficient if there is one urinal for every 50 males upto the first 500 employed, and one for every 100 thereafter.

In calculating the urinal accommodation required under this rule, any odd number of workers less than 50 or 100 as the case may be, shall be reckoned as 50 or 100.

**51. Latrines and urinals to conform to public health requirements** – Latrines and urinals other than those connected with an efficient water borne sewage system, shall comply with the requirements of the Public Health Authorities.

**52. Certain latrines and urinals to be connected to sewerage system** – When any general system of underground sewage with an assured water supply for any particular locality is provided in a municipality, all latrines and urinals of a factory situated in such locality shall, if the factory is situated within 30 metres of an existing sewer, be connected with that sewerage system.

**53. White-washing, colour-washing of latrines and urinals** – The walls, ceiling and partition of every latrine and urinal shall be white-washed or colour-washed and the white-washing or colour-washing shall be repeated at least once in every four months. The dates on

which the white-washing or colour-washing is carried out shall be entered in the prescribed register in Form 8:

Provided that this rule shall not apply to latrines and urinals, the walls, ceilings or partitions of which are laid in glazed tiles or otherwise finished to provide a smooth, polished impervious surface and that they are washed with suitable detergents and disinfectants at least once in every four months.

**54. Construction and maintenance of drains** – All drains carrying waste or sullage water shall be constructed in masonry or other impermeable material and shall be regularly flushed and the effluent disposed off by connecting such drains with a suitable drainage line:

Provided that, where there is no such drainage line, the effluent shall be deodorized and rendered innocuous and then disposed off in a suitable manner to the satisfaction of the Health Officer.

**55. Water taps in latrines** – (1) Where piped water supply is available, a sufficient number of water taps, conveniently accessible, shall be provided in or near such latrine accommodation.

(2) If piped water supply is not available, sufficient quantity of water shall be kept stored in suitable receptacles near the latrines.

**56. Number of Sweepers** – In every factory employing number of workers in any shift as shown in column No. 2 of the Schedule appended hereto, there shall be employed at least a number of full time/part time sweepers as shown in column No. 3 of the said Schedule in the respective shift to clean the latrines, urinals and wash places provided in the factory for the use of the workers employed in that shift, in order to maintain the same in clean and sanitary condition at all times.

#### SCHEDULE

Sr. No.	No. of workers in the shift	No. of sweepers to be employed in the shift
1.	Upto to 100	1 part time
2.	Above 100 but not above 250	1 full time
3.	Above 250 but not above 500	2 full time
4.	Above 500 but not above 1000	3 full time
5.	Above 1000	3 full time plus one full time for every additional 500 or part thereof

**Rules 57 to 59 prescribed under sub-section (2) of section 20.**

**57. Number and location of spittoons** – The number and location of the spittoons to be

provided shall be to the satisfaction of the Inspector. Such spittoons shall be placed on a sand or a bracket 90 centimetres high.

**58. Type of spittoons** – The spittoons shall be of either of the following types:-

- (a) a galvanised iron container with a conical funnel-shaped cover. A layer of suitable disinfectant liquid shall always be maintained in the container; or
- (b) a container filled with dry, clean sand, and covered with a layer of bleaching powder;  
or
- (c) any other type approved by the Chief Inspector.

**59. Cleaning of spittoons** – The spittoons mentioned in clause (a) of rule 58 shall be emptied, cleaned and disinfected at least once every day; a spittoon mentioned in clause (b) of rule 58 shall be cleaned by scrapping out the top layer of sand as often as necessary or at least once every day.

**CHAPTER IV**  
**SAFETY**

**Further precautions prescribed under Sub-Section (2) of Section 21.**

**60. Further safety precautions** – Without prejudice to the provisions of sub-section (1) of Section 21 in regard to the fencing of machines, the further precautions specified in the Schedules annexed hereto shall apply to the machine noted in each Schedule.

**SCHEDULE 1**

**Textile Machinery except Machinery used in Jute Mills**

1. *Application* – The requirements of this Schedule shall apply to machinery in factories engaged in the manufacture or processing of textiles other than jute textiles. The Schedule would not apply to machinery in factories engaged exclusively in the manufacture of synthetic fibres.

2. *Definitions* – For the purposes of this Schedule –

- (a) “Calender” means a set of heavy rollers mounted on vertical side frames and arranged to pass cloth between them. Calenders may have two to ten rollers, or bowls, some of which can be heated.
- (b) “Embossing calender” means a calender with two or more rolls, one of which is engraved for producing figure effects of various kinds on a fabric.
- (c) “Card” means a machine consisting of cylinders of various sizes – and in certain cases flats – covered with card clothing and set in relation to each other so that fibres in staple form may be separated into individual relationship. The speed of the cylinders and their direction of rotation varies. The finished product is delivered as a silver. Cards of different types are: the revolving flat card, the roller-and-clearer card, etc.
- (d) “Card clothing” means the material with which the surfaces of the cylinder, doffer, flats, etc. of a card are covered and consists of a thick foundation material made of either textile fabrics through which are pressed many fine closely spaced, specially bent wires or mounted saw toothed wire.
- (e) “Comber” means a machine for combing fibres of cotton wool, etc. The essential parts are device for feeding forward a fringe of fibres at regular intervals and an arrangement of combs or pins, which, at the right time, pass through the fringe. All tangled fibres, short fibres and nips are removed and the long fibres are laid parallel.
- (f) “Combing machinery” means a general classification of machinery including combers, silver lap machines, ribbon lap machines, and gill boxes, but excluding cards.
- (g) Rotary staple “cutter” means a machine consisting of one or more rotary blades used for the purpose of cutting textile fibres into staple lengths.
- (h) “Garnett machine” means any of a number of types of machines for opening hard twisted waste of wool, cotton, silk, etc. Essentially, such machines consist of a licker-in; one or more cylinders, each having a complement worker and stripper

rolls; and a fancy roll and doffer. The action of such machines is somewhat like that of a wool card, but it is much more severe in that the various rolls are covered with Garnett wire instead of card clothing.

- (i) “Gill box” means a machine used in the worsted system of manufacturing yarns. Its function is to arrange fibres in parallel order. Essentially, it consists of a pair of feed rolls and a series of followers where the followers move at a faster surface speed and perform a combing action.
- (j) “In-running rolls” means any pair of rolls or drums between which there is a “nip”.
- (k) “Interlocking arrangement” means a device that prevents the setting in motion of a dangerous part of a machine or the machine itself while the guard, cover or door provided to safe guard against danger is open or unlocked and which will also hold the guard, cover or door closed and locked while the machine or the dangerous part is in motion.
- (l) “Kier” means a large metal vat, usually a pressure type, in which fabrics may be boiled out, bleached, etc.
- (m) “Ribbon lapper” means a machine or a part of a machine used to prepare laps for feeding a cotton comb; its purpose is to provide a uniform lap in which the fibres have been straightened as much as possible.
- (n) “Silver lapper” means a machine or a part of a machine in which a number of parallel card silvers are drafted slightly, laid side by side in a compact sheet, and wound into a cylindrical package.
- (o) “Loom” means a machine for effecting the interlocking of two series of yarns crossing one another at right angles. The warp yarns are wound on a wrap beam and pass through headles and reeds. The filling is shot across in a shuttle and settled in place by reeds and slay, and the fabric is wound on a cloth beam.
- (p) “Starch mangle” means a mangle that is used specifically for starching cotton goods. It commonly consists of two large rolls and a shallow open vat with several immersion rolls. The vat contains the starch solution.
- (q) “Water mangle” means a calendar having two or more rolls used for squeezing water from fabrics before drying. Water mangles also may be used in other ways during the finishing of various fabrics.
- (r) “Mule” means a type of spinning frame having a head stock and a carriage as its two main sections. The head stock is stationary. The carriage is movable and it carries the spindles which draft and spin the roving into yarn. The carriage extends over the whole width of the machine and moves slowly towards and away from the head stock during the spinning operation.
- (s) “Nip” is the danger zone between two rolls or drums which by virtue of their positioning and movement create a nipping hazard.
- (t) “Openers and pickers” means a general classification of machinery which includes breaker pickers, intermediate pickers, finisher pickers, single process pickers, multiple process pickers, willow machines card and picker waste cleaners, thread extractors, shredding machines, roving waste openers, shoddy pickers, bale breakers, feeders, vertical openers, lattice cleaners, horizontal cleaners and any similar machinery equipped with either cylinders, screen section calendar section,

rolls, or beaters used for the preparation of stock for further processing.

- (u) “Paddler” means a trough for a solution and two or more squeeze rolls between which cloth passes after being passed through a mordant or dye bath.
- (v) “Plaiting machine” means a machine used to lay cloth into folds of regular length for the purpose of subsequent process or use.
- (w) “Roller printing machine” means a machine consisting of a large central cylinder, or pressure bowl, around the lower part of the perimeter of which is placed a series of engraved color rollers (each having a color trough), a furnisher roller, doctor blades, etc. The machine is used for printing fabrics.
- (x) “Continuous bleaching range” means a machine for bleaching of cloth in rope or open-width form with a following arrangement. The cloth, after wetting out, pass through a squeeze roll into a saturator containing a solution of caustic soda and then to an enclosed J-Box. A V-shaped arrangement is attached to the front part of the J-box for uniform and rapid saturation of the cloth with steam before it is packed down in the J-box. The cloth, in a single strand rope form, passes over a guide roll down the first arm of the “V” and up the second. Steam is injected into the “V” at the upper end of the second arm so that the cloth is rapidly saturated with steam at this point. The J-box capacity is such that cloth will remain hot for a sufficient time to complete the scouring action. It then passes a series of washers with a squeeze roll in between. The cloth then passes through a second set of saturator, J-box and washer, where it is treated with the peroxide solution. By slight modification of the form of the unit, the same process can be applied to open-width cloth.
- (y) “Mercerizing range” means a 3-bowl mangle, a tenter frame, and a number of boxes for washing and scouring. The whole set up is in a straight line and all parts operate continuously. The combination is used to saturate the cloth with sodium hydroxide, stretch it while saturated and washing out most of the caustic before releasing tension.
- (z) “Sanforizing machine” means a machine consisting of a large steam-heated cylinder and endless, thick, woollen felt blanket which is in close contact with the cylinder for most of its perimeter, and an electrically heated shoe which presses the cloth against the blanket while the latter is in a stretched condition as it curves around the feed-in roll.
- (aa) “Shearing machine” means a machine used for shearing cloth. Cutting action is provided by a number of steel blades spirally mounted on a roller. The roller rotates in close contact with a fixed ledger blade. There may be one to six such rollers on a machine.
- (bb) “Singeing machine” means a machine which comprises of a heated roller, plate or an open gas flame. The cloth or yarn is rapidly passed over the roller or the plate or through the open gas flame to remove fuzz or hairiness by burning.
- (cc) “Slasher” means a machine used for applying a size mixture to warp yarns. Essentially, it consists of a stand for holding section beams, a size box, one or more cylindrical dryers or an enclosed hot air dryer, and a beaming end for winding the yarn on the loom beams.
- (dd) “Tenter frame” means a machine for drying cloth under tension. It essentially consists of a pair of endless travelling chains fitted with clips of fine pins and

carried on tracks. The cloth is firmly held at the selvages by the two chains which diverge as they move forward so that the cloth is brought to the desired width.

- (ee) “Wrapper” means a machine for preparing and arranging the yarns intended for the wrap of a fabric, specifically, a beam wrapper.

3. *General safety requirements* – (1) Every textile machine shall be provided with individual mechanical or electrical means for starting and stopping such machines. Belt shifter on machines driven by belts and shafting should be provided with a belt shifter lock or an equivalent positive locking device.

(2) Stopping and starting handles or other controls shall be of such design and so positioned as to prevent the operator’s hand or fingers from striking against any moving part or any other part of the machine.

(3) All belts, pulleys, gears, chains, sprocket wheels and other dangerous moving parts of machinery which either form part of the machinery or are used in association with it, shall be securely guarded.

4. *Opener and pickers* – (1) In all opening or picker machinery, beaters and other dangerous parts shall be securely fenced by suitable guards so as to prevent contact with them. Such guards and doors or covers of openings giving access to any dangerous part of the machinery shall be provided with inter-locking arrangement:

Provided that in the case of doors or covers of openings giving access to any dangerous part, other than beater covers, instead of the interlocking arrangement, such openings may be so fenced by guards which prevent access to any such dangerous part and which is either kept positively locked in position of fixed in such a manner that it cannot be removed without the use of hand tools.

(2) The feed rolls on all opening and picking machinery shall be covered with a guard designed to prevent the operator from reaching the nip while the machinery is in operation.

(3) The lap forming rollers shall be fitted with a guard or cover which shall prevent access to the nip at the intake of the lap roller and fluted roller as long as the weighted rack is down. The guard or cover shall be so locked that it cannot be raised until the machine is stopped and the machine cannot be started until the cover or guard is closed.

Provided that the foregoing provision shall not apply to the machines equipped with automatic lap forming devices.

Provided further that any such machine equipped with an automatic lap forming device shall not be used unless the automatic lap forming device is in efficient working order.

5. *Cotton cards* – (1) All cylinder doors shall be secured by an interlocking arrangement which shall prevent the door being opened until the cylinder has ceased to revolve and shall render it impossible to restart the machine until the door has been closed:

Provided that the latter requirement in respect of the automatic locking device shall not apply while stripping or grinding operations are carried out:

Provided further that stripping or grinding operations shall be carried out only by specially trained adult workers wearing tight fitting clothing whose names have been recorded in the register prescribed in this behalf as required under sub-section (1) of Section 22.

(2) The licker-in shall be guarded so as to prevent access to the dangerous parts.

(3) Every card shall be equipped with an arrangement that would enable the card cylinder to be driven by power during stripping/grinding operations without having to either shift the main belt to the fast pulley of the machine or to dismantle the interlocking mechanism. Such an arrangement shall be used only for stripping or grinding operations.

6. *Garnett machines* – (1) Garnett licker-ins shall be enclosed.

(2) Garnett fancy rolls shall be enclosed by guards. These shall be installed in a way that keeps worker rolls reasonably accessible for removal or adjustment.

(3) The underside of the garnett shall be guarded by a screen mesh or other form of enclosures to prevent access.

7. *Gill boxes* – (1) The feed end shall be guarded so as to prevent fingers being caught in the pins of the intersecting fallers.

(2) All nips of in-running rolls shall be guarded by suitable nip guards conforming to the following specifications:

Any opening which the guard may permit when fitted in position shall be so restricted with respect to the distance of the opening from any nip point through that opening and in any circumstances, the maximum width of the opening shall not exceed the following:

Distance of opening From nip point	Maximum width of opening
0 to 38 m	6 m
39 to 63 m	10 m
64 to 88 m	13 m
89 to 140 m	15 m
141 to 165 m	19 m
166 to 190 m	22 m
191 to 215 m	32 m

8. *Sliver and ribbon lappers (cotton)* – The calender drums and the lap spool shall be provided with a guard to prevent access to the nip between the inrunning rolls.

9. *Speed frames* – Jack box wheels at the head stock shall be guarded and the guard shall have interlocking arrangement.

10. *Spinning mules* – Wheels on spinning mule carriages shall be provided with substantial wheel guards, extending to within 6m of the rails.

11. *Warpers* – Swiveled double-bar gates shall be installed on all warpers operating in excess

of 410metres/min. These gates shall have interlocking arrangement, except for the purpose of inching or jogging:

Provided that the top and bottom bars of the gate shall be at least 1.05 and 0.53 metres high from the floor or working platform, and the gate shall be located 38m from the vertical tangement to the beam head.

12. *Slashers* – (1) Cylinder dryers: (a) All open nips of in-running rolls shall be guarded by nip guards conforming to the requirements in paragraph 7.

(b) When slashers are operated by by control levers, these levers shall be connected to a horizontal bar or treadle located not more than 170cm above the floor to control the operation from any point.

(c) Slashers operated by push button control shall have stop and start buttons located at each end of the machine, and additional buttons located on both sides of the machine at the size box and the delivery end. If calendar rolls are used, additional buttons shall be provided at both sides of the machine at points near to the nips, except when slashers are equipped with an enclosed dryer as in paragraph (b).

(2) Enclosed hot air dryers: (a) All open nips of the top squeezing rollers shall be guarded by nip guards conforming to the requirements in paragraph 7 (2).

(b) When slashers are operated by control levers, these levers shall be connected to a horizontal bar or treadle located not more than 170 cm above the floor to control the operation from any point.

(c) Slashers operated by push-button control shall have stop and start buttons located at each end of the machine and additional stop and start buttons located on both sides of the machines at intervals spaced not more than 1.83 metres on centres.

13. *Looms* – Each loom shall be equipped with suitable guards designed to minimise the danger from flying shuttles.

14. *Valves of kiers, tanks and other containers* – (1) Each valve controlling the flow of steam, injurious gases or liquids into a kier or any other tank or container into which a person is likely to enter in connection with a process, operation, maintenance or for any other purpose, shall be provided with a suitable locking arrangement to enable the said person to lock the valve securely in the closed position and retain the key with him before entering the kier, tank or container.

(2) Wherever boiling tanks, caustic tanks and any other containers from which liquids which are hot, corrosive or toxic may overflow or splash, are so located that the operator cannot see the contents from the floor or working area, emergency shut off valves which can be controlled from a point not subject to danger of splash shall be provided to prevent danger.

15. *Shearing machines* – All revolving blades on shearing machines shall be guarded so that the opening between the cloth surface and the bottom of the guard will not exceed 10 m.

16. *Continuous bleaching range (cotton and rayon)* – The nip of all in-running rolls on

opening width bleaching machine rolls shall be protected with a guard to prevent the worker from being caught at the nip. The guard shall extend across the entire length of the nip.

17.  *Mercerizing range (piece goods)*  – (1) A stopping device shall be provided at each end of the machine.

(2) A guard shall be provided at each end of the frame between the in-running chain and the clip opener.

(3) A nip guard shall be provided for the in-running rolls of the mangle and washers and the guard shall conform to the requirements in paragraph 7(2).

18.  *Tenter frames*  – (1) A stopping device shall be provided at each end of the machine.

(2) A guard shall be provided at each end of the machine frame at the in-running chain and clip opener.

19.  *Paddlers*  – Suitable nip guards conforming to the requirement in paragraph 7(2) shall be provided to all dangerous in-running rolls.

20.  *Centrifugal extractors*  – (1) Each extractor shall be provided with a guard for the basket and the guard shall have inter-locking arrangement.

(2) Each extractor shall be equipped with a mechanically or electrically operated brake to quickly stop the basket when the power driving the basket is shut off.

21.  *Squeezer or wringer extractor, water mangle, starch mangle, backwasher (worsted yarn) crabbing machines and decating machines*  – All in-running rolls shall be guarded with nip guards conforming to the requirements in paragraph 7(2).

22.  *Sanforizing and palmer machine*  – (1) Nip guards shall be provided on all accessible in-running rolls and these shall conform to the requirements in paragraph 7(2).

(2) Access from the sides to the nips of in-running rolls should be fenced by suitable side guards.

(3) A safety trip rod, cable or wire centre cord shall be provided across the front and back of all palmer cylinders extending the length of the face of the cylinder. The safety trip shall not be more than 170 cm above the level at which the operator stands and shall be readily accessible.

23.  *Rope washers*  – (1) Splash guards shall be installed on all rope washers unless the machine is so designed as to prevent the water or liquid from splashing the operator, the floor or working surface.

(2) A safety trip rod, cable or wire centre cord shall be provided across the front and back of all rope washers extending the length of the face of the washer. It shall operate readily whether pushed or pulled. This safety trip shall be not more than 170 cm above the level on which the operator stands and shall be readily accessible.

24.  *Laundry washer tumbler or shaker*  – (1) each drying tumbler, each double cylinder

shaker or clothes tumbler, and each washing machine shall be equipped with an inter-locking arrangement which will prevent the power operation of the inside cylinder when the outer door on the case or shell is open, and which will also prevent the outer door on the case or shell from being opened without shutting off the power and the cylinder coming to a stop. This should not prevent the movement of the inner cylinder by means of a hand operated mechanism or an inching device.

(2) Each closed barrel shall also be equipped with adequate means for holding open the doors or covers of the inner and outer cylinders or shells while it is being loaded or unloaded.

25. *Printing machine (roller type)* – (1) All in-running rolls shall be guarded by nip guards conforming to the requirement in paragraph 7(2).

(2) The engraved roller gears and the large crown wheel shall be guarded.

26. *Calenders* – The nip at the in-running side of the rolls shall be provided with a guard extending across the entire length of the nip and arranged to prevent the fingers of the workers from being pulled in between the rolls or between the guard and the rolls, and shall be so constructed that the cloth can be fed into the rolls safely.

27. *Rotary staple cutters* – The cutter shall be protected by a guard to prevent hands reaching the cutting zone.

28. *Plaiting machines* – Access to the trap between the knife and card bar shall be prevented by a guard.

29. *Hand bailing machine* – An angle iron handle-stop guard shall be installed at right angle to the frame of the machine. The stop guard shall be so designed and so located that it will prevent the handle from travelling beyond the vertical position should the handle slip from the operator's hand when the pawl has been released from the teeth of the take-up-gear.

30. *Flat-work ironer* – Each flat-work or collar ironer shall be equipped with a safety bar or other guard across the entire front of the feed or first pressure rolls, so arranged that the striking of the bar or guard by the hand of the operator or other person will stop the machine. The guard shall be such that the operator or other person cannot reach into the rolls without removing the guard. This may be either a vertical guard on all sides or a complete cover. If a vertical guard is used, the distance from the floor or working platform to the top of guard shall be not less than 1.83 metres.

**SCHEDULE II**  
**Woodworking Machinery**

1. *Definitions* – For the purpose of this Schedule

- (a) ‘woodworking machine’ means a circular saw, band saw, planing machine, chain mortising machine or vertical spindle moulding machine operating on wood or cork;
- (b) “circular saw” means a circular saw working in a bench (including a rack bench), but does not include a pendulum or similar saw which is moved towards the wood for the purpose of cutting operation;
- (c) “band saw” means a band saw, the cutting portion of which runs in a vertical direction but does not include a log saw or band re-sawing machine; and
- (d) “planing machine” means a machine for overhand planing or for thicknessing or for both operations.

2. *Stopping and starting device* – An efficient stopping and starting device shall be provided on every wood-working machine. The control of this device shall be in such a position as to be readily and conveniently operated by the person in charge of the machine.

3. *Space around machines* – The space surrounding every woodworking machine in motion shall be kept free from obstruction.

4. *Floors* – The floor surrounding every wood-working machine shall be maintained in good and level condition, and shall not be allowed to become slippery, and as far as practicable shall be kept free from chips or other loose material.

5. *Training and supervision* – (1) No person shall be employed at a woodworking machine unless he has been sufficiently trained to work under the adequate supervision of a person who has a thorough knowledge of the working of the machine.

(2) A person who is being trained to work a woodworking machine shall be fully and carefully instructed as to the dangers of the machine and the precautions to be observed to ensure safe working of the machine.

6. *Circular saws* – Every circular saw shall be fenced as follows:-

- (a) behind and in direct line with the saw there shall be a riving knife, which shall have a smooth surface, shall be strong, rigid and easily adjustable and shall also conform to the following conditions:-
  - (i) the edge of the knife nearer to the saw shall form an arc of a circle having a radius not exceeding the radius of the largest saw used on the bench;
  - (ii) the knife shall be maintained as close as practicable to the saw, having regard to the nature of the work being done at the time, and at the level of the bench table. The distance between the front edge of the knife and the teeth of the saw shall not exceed 12 millimetres; and

- (iii) for a saw of a diameter of less than 60 centimetres the knife shall extend upwards from the bench table to within 25 millimetres of the top of the saw, and for a saw of a diameter 60 centimetres or over shall extend upwards from the bench table to a height of at least 23 centimetres.
- (b) the top of the saw shall be covered by a strong and easily adjustable guard, with a flange at the side of the saw farthest from the fence. The guard shall be kept so adjusted that the said flange shall extend below the roots of the teeth of the saw. The guard shall extend from the top of the riving knife to a point as low as practicable at the cutting edge of the saw;
- (c) the part of the saw below the bench table shall be protected by two plates of metal or other suitable material, one on each side of the saw; such plates shall not be more than 15 centimetres apart, and shall extend from the axis of the saw outwards to a distance of not less than 5 centimetres beyond the teeth of the saw. Metal plates, if not beaded, shall be of a thickness of at least 2.5 millimetres, or, if beaded, be of a thickness of at least 1.25 millimetres.

7. *Push sticks* – A push stick or other suitable appliance shall be provided for use at every circular saw and at every vertical spindle moulding machine to enable the work to be done without unnecessary risk.

8. *Band saws* – Every band saw shall be guarded as follows-

- (a) both sides of the bottom pulley shall be completely encased by sheet or expanded metal or other suitable material;
- (b) the front of the top pulley shall be covered with sheet or expanded metal or other suitable material; and
- (c) all portions of the blade shall be enclosed or otherwise securely guarded, except the portion of the blade between the bench table and the top guide.

9. *Planing machines* – (1) A planing machine (other than a planing machine which is mechanically fed) shall not be used for overhand planing unless it is fitted with a cylindrical cutter block.

(2) Every planing machine used for overhand planing shall be provided with a 'bridge' guard capable of covering the full length and breadth of the cutting slot in the bench, and so constructed as to be easily adjusted both in a vertical and horizontal direction.

(3) The feed roller of every planing machine used for thicknessing except the combined machine for overhand, planing and thicknessing shall be provided with an efficient guard.

10. *Vertical spindle moulding machines* – (1) The cutter of every vertical spindle moulding machine shall be guarded by the most efficient guard having regard to the nature of the work being performed.

(2) The wood being moulded at a vertical spindle moulding machine, shall, if practicable, be held in a jig or holder of such construction as to reduce as far as possible the risk of accident to the worker.

11. *Chain mortising machines* – The chain of every chain mortising machine shall be provided with a guard which shall enclose the cutters as far as practicable.

12. *Adjustment and maintenance of guards* – The guards and other appliances required under this Schedule shall be –

- (a) maintained in an efficient state;
- (b) constantly kept in position while the machinery is in motion; and
- (c) so adjusted as to enable the work to be done without unnecessary risk.

13. *Exemptions* – Paragraphs 6, 8, 9 and 10 shall not apply to any wood working machine in respect of which it can be proved that other safeguards are provided, maintained and used which render the machine as safe as it would be if guarded in the manner prescribed in this Schedule.

### **SCHEDULE III**

#### **Rubber and Plastic Mills**

1. *Definition* – (i) A “Rubber and Plastic Mill” shall mean machine with rollers used in breaking down, cracking, washing, grating, mixing, refining and warming of rubber or rubber compounds and plastic or plastic compounds.

(ii) A “Calender” shall mean machine with rolls used for fractioning, sheeting, coating and spreading of rubber or rubber compounds and plastic or plastic compounds.

2. *Installation of machines* – Rubber and plastic mills shall be so installed that the top of the front roll is not less than 105 centimetres above the floor or working level:

Provided that in existing installations where the top of the front roll is below this height, a strong, rigid distance-bar guard shall be fitted across the front of the machine in such a position that the operator cannot reach the nip of the roller from the normal working position of the operator.

3. *Safety devices* – (i) Rubber and plastic mills shall be equipped with –

- (a) hoppers so constructed or guarded that it is impossible for the operators to come into contact in any manner with the nip of the rolls; or
- (b) horizontal safety-trip rods or tight wire cables across both front and rear, which will, when pushed or pulled, operate instantly, to disconnect the power and apply the brakes or to reverse the rolls.
- (c) Safety-trip rods or tight wire cables on rubber mills shall extend across the entire length of the face of the rolls and shall be located not more than 175 centimetres

above the floor or working level.

(ii) Calender machines shall be equipped with –

- (a) Horizontal safety-trip rods or tight wire across both front and rear, which will when pushed or pulled operate instantly, to disconnect the power and apply the brakes or to reverse the roll;
- (b) Safety-trip rods or tight wire cables on calender machines shall extend across the entire length of the face of the roll and shall be located not more than 170 centimetres above the floor or working level;
- (c) On each side of all calenders and near both ends of the face of the rolls there shall be a vertical tight wire cable connecting with the bar tripping mechanism at the top and fastened to the frame within 30 centimetres of the floor. These cables should be positioned at a distance of not more than 30 centimetres from the face of the roll and at a distance of not less than 25 millimetres from the calender frame.

4. *Maintenance and safety devices* – Safety trip rods and tight wire cables on all rubber mills and calenders shall be examined and tested daily in the presence of the manager or other responsible person and if any defect is disclosed by such examination and test, the mill shall not be used until such defect has been remedied.

5. *Injunction Moulding Machine* – (a) An electrical interlock arrangement shall be provided so that the moulds cannot be closed unless the front safety gate is fully closed and on opening the front safety gate, the moulds will stop automatically.

- (b) In addition to the above arrangement an hydraulic safety shall also be incorporated with the front safety gate. This shall prevent the tail stock mould plate from moving forward on opening of the front safety gate.
- (c) At the rear of the machine, there shall be provided either an efficient fixed guard or a sliding gate which shall be electrically inter-locked with the movement of the mould plates in the manner of the front safety gage as required under (a) above so as to prevent access to the danger zone of the moulds in motion from the rear.

#### **SCHEDULE IV**

##### **Centrifugal Machines**

1. *Definition* – “Centrifugal machines” include centrifugal extractors or droextractors, separators and driers.

2. Every part of centrifugal machine shall be –

- (a) of good design and construction and of adequate strength;
- (b) properly maintained; and
- (c) examined thoroughly by a competent person at regular intervals.

3. *Interlocking guard for drum or basket* – (1) The cage housing the rotating drum or basket of every centrifugal machine shall be provided with a strong lid. The design and construction of the cage as well as the lid shall be such that no access is possible to the drum or basket when the lid is closed.

(2) Every centrifugal machine shall be provided with an efficient interlocking device that will effectively prevent the lid referred to in sub-paragraph (1) from being opened while the drum or basket is in motion and prevent the drum or basket being set in motion while the lid is in the open position.

4. *Braking arrangement* – Every centrifugal machine shall be provide with an effective braking arrangement capable of bringing the drum or basket to rest within as short a period of time as reasonably practicable after the power is cut off.

5. *Operating speed* – No centrifugal machine shall be operated at a speed in excess of the manufacturer's rating which shall be legibly stamped at easily visible places both on the inside of the basket and on the outside of the machine casing.

6. *Exceptions* – Sub-paragraph (2) of paragraph 3, paragraphs 4 and 5 shall not apply in case of top lung machines or similar machines used in the sugar manufacturing industry.

## **SCHEDULE V**

### **Shears and Guillotine Machines**

1. *Definition* – The term 'shears and guillotine' means a machine, whether driven by power or otherwise, equipped with a straight beveled blade operating vertically against a resisting edge and used for shearing metals or non-mettallic substances.

2. A barrier metal guard of adequate strength shall be provided at the front of the knife, fastened to the machine frame and shall be so fixed as would prevent any part of the operator's body to reach the descending blade from above, below or through the barrier guard or from the sides:

Provided that in case of machines used in the paper printing and allied industries where a fixed barrier metal guard is not suitable on account of the height and volume of the material being fed, there shall be provided suitable starting devices which require simultaneous action of both the hands of the operator or an automatic device which will remove both the hands of the operator from the danger zone at every descent of the blade.

3. At the back end of such machines, an inclined guard shall be provided which the slit pieces would slide and be collected at a safe distance in a manner as would prevent a person at the back from reaching the descending blade.

## **SCHEDULE VI**

### **Agitators and Mixing Machines**

1. *Definition* – "Agitators and Mixing Machines" means a tank or other container equipped with power-driven mixing arms, blades or paddle wheels fixed to revolvable shafts or other simple mechanical devices for blending/stirring liquids with other liquids or with solid substances or combinations of these.

2. When the top of an open agitator tank, beater tank, tank or paddle tank or a similar vessel is less than 1 metre above the adjacent floor or working level, adequate standard railings shall be installed on all open sides.

3. Agitators and mixing machines shall be provided with an efficient inter-lock arrangement for the top lid, to prevent access to the agitating, stirring or similar devices,

whilst in motion and would prevent restart under power with the lids in open position.

4. When other inspection or examination openings are provided at the top or sides of the container vessels of the agitator and mixing machines, such openings shall be provide with standard grill guards as would prevent access of any part of the operator's body coming in contact with agitator, stirring or similar devices whilst in motion.

5. When discharge holes, openings, chutes or similar arrangements are provided at the bottom or at the sides of the container vessels of the agitator and mixing machines, they shall be so designed, shaped, guarded or situated as would prevent access of any part of operator's body coming in contact with agitating, stirring or similar devices, whilst in motion inside the vessel.

## **SCHEDULE VII**

### **Leather Plastic and Rubber Stripper Machines**

Strippers for trimming or punching tanned hides, plastic rubber sheets in leather making, footwear manufacturing or in similar industries shall be provided with suitable devices which require simultaneous action of both the hands of the operator or an automatic device which will remove both the hands of the operator from the danger zone at every descent of the blade, punch or stripper cutter.

## **SCHEDULE VIII**

### **Guarding of Projection**

1. In all machinery driven by power and installed in any factory after commencement of this rule, all couplings with projecting bolt heads and similar projections shall be completely encased or otherwise, effectively guarded as to prevent danger.

#### **Rules prescribed under sub-section (I) of section 22 and section 112.**

**61. Register of specially trained adult workers** – Register of workers attending to machinery as provided in sub-section (1) of section 22 shall be in Form 10.

**62. Tight fitting clothing** – A worker required to wear tight fitting clothing under sub-section (1) of section 22 shall be provided by the occupier with such clothing which shall consist of at least a pair sleeves shirt or vest. Such clothing shall be returned to the occupier on termination of service or when new clothing is provided.

#### **Rule prescribed under section 41.**

**63. Belts, etc. to be regularly examined** – All belts shall be regularly examined to ensure that the joints are safe and the belts are at proper tension.

**Rule prescribed under sub-section (2) of section 23.**

**64. Employment of young persons on dangerous machines** – The machines specified in sections 28, 29 and 30 and the machines mentioned below shall be deemed to be of such dangerous character that young persons shall not work at them unless the provisions of sub-section (1) of section 23 are complied with –

- (a) Power presses other than hydraulic presses.
- (b) Milling machines used in the metal trades.
- (c) Circular saws.
- (d) Platen printing machines.
- (e) Guillotine machines.

**Rule prescribed under sub-section (8) of section 28.**

**65. Hoist examination** – particulars of – A register shall be maintained to record particulars of examination of hoists or lifts and shall give particulars as shown in Form 11.

**Exemption under sub-section (4) of section 28.**

**66. Exemption of certain hoists and lifts** – In pursuance of the provisions of sub-section (4) of section 28, in respect of any class or description of hoist or lift specified in the first column of the following Schedule, the requirements of section 28 specified in the second column of the said Schedule and set opposite to that class or description of hoist or lift shall not apply:-

SCHEDULE

Class or description of Hoist or lift	Requirements which shall not apply
(1)	(2)
Hoist or lifts mainly used for raising materials for charging blast furnances lime kilns.	Sub-section (1) (b) in so far as it requires a gate at the bottom landing; sub-section (1) or (d); sub-section (1) (e).
Hoist not connected with mechanical and which are not used for carrying persons.	Sub-section (1) (b) in so far as it requires power the hoistways or liftways enclosure to be so constructed as to prevent any person or thing from being trapped between any part of the hoist or lift and an fixed structure or moving part; sub-section (1) (e).

**Rule prescribed under sub-section (2) of section 29.**

**67. Lifting machines, chains, ropes and lifting tackles.** – (1) No lifting machine and no chain, rope or lifting tackle, except a fibre rope or fibre rope sling, shall be taken into use in any factory for the first time in that factory unless it has been tested and all parts have been thoroughly examined by a competent person and a certificate of such a test and examination specifying the safe working load or loads and signed by the person making the test and the examination, has been obtained and is kept available for inspection.

(2) Every jib-crane so constructed that the safe working load may be varied by the raising or lowering of the jib, shall have attached thereto either an automatic indicator of safe working loads or an automatic jib angle indicator and a table indicating the safe working loads at corresponding inclinations of the jib or corresponding radii of the load.

(3) A table showing the safe working loads of every kind and size of chain, rope or lifting tackle in use, and, in the case of multiple sling, the safe working loads at different angles of the legs, shall be posted in the store room in which the chains, ropes or lifting tackles are kept, and in prominent positions on the premises and no chain, rope or lifting tackle not shown in the table shall be used:

Provided that this sub-rule shall not apply in respect of such lifting tackle if the safe working load thereof, or in the case of a multiple sling, the safe working load at different angles of the legs, is plainly marked upon it.

(4) The register to be maintained under clause (a) (iii) of sub-section (1) of section 29 of the Act shall be in Form 12 and shall be kept readily available for inspection.

(5) All rails on which a traveling crane moves and every tracks on which the carriage of a transporter or runway moves shall be of proper size and adequate strength and have an even running surface; and every such rail or track shall be properly laid, adequately supported and properly maintained.

(6) To provide access to rail tracks of overhead travelling cranes suitable passage-ways of at least 50 centimetres width with toeboards and a double hand rails 90 centimetres high shall be provided alongside, and clear of, the rail tracks of overhead travelling cranes, such that no moving part of the crane can strike persons on the ways, and the passage-way shall be at a lower level than the crane track itself. Safe access ladders shall be provided at suitable intervals to afford access to these passage-ways, and from passage-ways to the rail tracks.

Provided that the Chief Inspector may, for reasons to be specified in writing, exempt any factory in respect of any overhead travelling crane from the operation of any provision of this sub-rule subject to such conditions as he may specify.

(7) All chains and lifting tackles except a rope sling shall, unless they have been subjected to such other heat treatment as may be approved by the Chief Inspector of Factories, be effectively annealed under the supervision of a competent person at the following intervals:

- (a) all chains, slings, rings, hooks, shackles and swivels used in connection with molten metal or molten slag or when they are made of 12.5 millimetres bar or smaller, once at least in every six months;
- (b) all other chains, rings, hooks, shackles and swivels in general use, once at least in every twelve months;

Provided that chains and lifting tackle not in frequent use shall, subject to the Chief Inspector's approval, be annealed only when necessary. Particulars of such annealing shall be entered in a register in Form 12.

(8) Nothing in the foregoing sub-rule (7) shall apply to the following classes of chains and lifting tackles:-

- (a) chains made of malleable cast iron;
- (b) plate link chains;
- (c) chains, rings, hooks, shackles and swivels made of steel or of any non-ferrous metal;
- (d) pitched chains, working on sprocket or pocketed wheels;
- (e) rings, hooks, shackles and swivels permanently attached to pitched chains, pulley blocks or weighing machines;
- (f) hooks and swivels having screw threaded parts or ball bearing or other case hardened parts;
- (g) socket shackles secured to wire ropes by white-metal capping;
- (h) bodeaux connections; and
- (i) any chain or lifting tackle which has been subjected to the heat treatment known as "normalising" instead of annealing:

Provided that such chains and lifting tackles shall be thoroughly examined by a competent person once at least in every twelve months and particulars entered in the register kept in Form 12.

(9) All lifting machines, ropes, chains and lifting tackles, except a fibre sling, which have been lengthened, altered or repaired by welding or otherwise, shall, before being again taken into use, be adequately re-tested and re-examined by a competent person and certificate of such test and examination be obtained, and particulars entered in the register kept in Form 12.

(10) No person under 18 years of age and no person who is not sufficiently competent and reliable shall be employed as driver of a lifting machine whether driven by mechanical power or otherwise, or to give signals to a driver.

(11) Where the Chief Inspector of Factories is satisfied that in a factory due to shutdown or for any other reasons it is not practicable to maintain a minimum distance of 6 metres between the person employed or working on or near the wheel track of a travelling crane and the crane, he may at the request of the manager, reduce the distance to such extent as he may consider necessary and also prescribe further precautions indicating appointment of suitable number of supervisors to ensure the safety of the persons while they are employed or working on or near the track.

### **Rules prescribed under sub-section (2) of section 31.**

**68. Pressure vessels or plant** – (1) Interpretation – In this rule –

- (a) "design pressure" means the maximum pressure that a pressure vessel or plant is designed to withstand safely when operating normally;
- (b) "maximum permissible working pressure" means the maximum pressure at which a

pressure vessel or plant is permitted to be operated or used under this rule and is determined by the technical requirements of the process;

- (c) “plant” means a system of piping that is connected to a pressure vessel and is used to contain a gas, vapour or liquid under pressure greater than the atmospheric pressure, and includes the pressure vessel;
- (d) “pressure vessel” means a vessel that may be used for containing, storing, distributing, transferring, distilling, processing or otherwise handling any gas, vapour or liquid under pressure greater than the atmospheric pressure and includes any pipelines fitting or other equipment attached thereto or used in connection therewith; and
- (e) “competent person” means a person who is, in the opinion of the Chief Inspector, capable by virtue of his qualifications, training and experience, of conducting a thorough examination and pressure tests, as required, on a pressure vessel or plant, and of making a full report on its condition.

(2) *Exceptions* – Nothing in this rule shall apply to –

- (a) vessels made of ferrous materials having an internal operating pressure not exceeding 1 kilogram per square centimetre.
- (b) Steam boilers, steam and feed pipes and their fittings coming under the purview of the Indian Boilers Act, 1923;
- (c) Metal bottles or cylinders used for storage or transport of compressed gases or liquefied or dissolved gases under pressure covered by the Gas Cylinder Rules, 1940 framed under the Indian Explosives Act, 1884;
- (d) Vessels in which internal pressure is due solely to the static heat of liquid;
- (e) Vessels with a nominal water capacity not exceeding 500 litres connected in a water-pumping system containing air that is compressed to serve as a cushion;
- (f) Vessel for nuclear energy application;
- (g) Refrigeration plant having a capacity of 3 tone or less of refrigeration in 24 hours; and
- (h) Working cylinders of steam engines or prime movers, feed pumps and steam traps; turbine casings; compressor cylinders; steam separators or dryers; steam strainers; steam de-superheaters; oil separators; air receivers for fire sprinkler installations; air receivers of mono type machines provided the maximum working pressure of the air receiver does not exceed 1.33 kilograms per square centimetre and the capacity 85 litres; air receivers of electrical circuit breakers; air receivers of electrical relays; air vessels on pumps, pipe coils, accessories of instruments and appliances such as cylinders and piston assemblies used for operating relays and interlocking type of guards; vessels with liquids subjected to static heat only; and hydraulically operating cylinders other than any cylinder communicating with an air loaded accumulator.

(3) *Design and construction* – Every pressure vessel or plant used in a factory –

- (a) shall be properly designed on sound engineering practice;
- (b) shall be of good construction, sound material, adequate strength and free from any patent defects; and

(c) shall be properly maintained in a safe conditions:

Provided that the pressure vessel or plan in respect of the design and construction of which there is an Indian Standard or a standard of the country of manufacture or any other law or regulation in force, shall be designed and constructed in accordance with the said standard, law or regulation, as the case may be, and a certificate thereof shall be obtained from the manufacturer or from the competent person which shall be kept and produced on demand by an Inspector.

(4) *Safety device* – Every pressure vessel shall be fitted with –

- (a) a suitable safety valve or other effective pressure relieving device of adequate capacity to ensure that the maximum permissible working pressure of the pressure vessel shall not be exceeded. It shall be set to operate at a pressure not exceeding the maximum permissible working pressure and when more than one protective device is provided, only one of the devices need to be set to operate at the maximum permissible working pressure and the additional device shall be set to discharge at a pressure not more than 5 per cent in excess of the maximum permissible working pressure;
- (b) a suitable pressure gauge with a dial range not less than 1.5 times the maximum permissible working pressure, easily visible and designed to show at all times the correct internal pressure and marked with a prominent red mark at the maximum permissible working pressure of the pressure vessels;
- (c) a suitable nipple and globe valve connected for the exclusive purpose of attaching a test pressure gauge for checking the accuracy of the pressure gauge referred to in clause (b) of this sub-rule;
- (d) a suitable stop valve or valves by which the pressure vessel may be isolated from other pressure vessels or plant or source of supply of pressure. Such a stop valve or valves shall be located as close to the pressure vessel as possible and shall be easily accessible; and
- (e) a suitable drain cock or valve at the lowest part of the pressure vessel for the discharge of the liquid or other substances that may collect in the pressure vessel;

Provided that it shall be sufficient for the purpose of this sub-rule if the safety valve or pressure relieving device, the pressure gauge and the stop valve are mounted on a pipeline immediately adjacent to the pressure vessel and where there is a range of two or more similar pressure vessels served by the same pressure lead, only one set of such mountings need be fitted on the pressure lead immediately adjacent to the range or pressure lead immediately adjacent to the range or pressure vessels, provided they cannot be isolated.

(5) *Pressure reducing devices* –

- (a) Every pressure vessel which is designed for a working pressure less than the pressure at source of supply, or less than the pressure which can be obtained in the pipe connecting the pressure vessel with any other source of supply, shall be fitted with a suitable pressure reducing valve or other suitable automatic device to prevent the maximum permissible working pressure of the pressure vessel being exceeded.
- (b) To further protect the pressure vessel in the event of failure of the reducing valve or device, at least one safety valve having a capacity sufficient to release all the steam,

vapour or gas without undue pressure rise as determined by the pressure at the source of supply and the size of the pipe connecting the source of supply, shall be fitted on the low pressure side of the reducing valve.

(6) *Pressure vessel or plant being taken into use –*

- (a) No new pressure vessel or plant shall be taken into use in a factory after coming into force of this rule unless it has been hydrostatically tested by a competent person at a pressure at least 1.3 times the design pressure, and no pressure vessel or plant which has been previously used or has remained isolated or idle for a period exceeding 2 months or which has undergone alterations or repairs shall be taken into use in a factory unless it has been thoroughly examined by a competent person externally and internally, if practicable, and has been hydrostatically tested by the competent persons at a pressure which shall be 1.5 times the maximum permissible working pressure:

Provided, however, that the pressure vessel or plant which is so designed and constructed that it cannot be safely filled with water or liquid or is used in service when even some traces of water cannot be tolerated, shall be pneumatically tested at a pressure not less than the design pressure or the maximum permissible working pressure as the case may be:

Provided further that the pressure vessel or plant which is lined with glass shall be tested hydrostatically or pneumatically as required at a pressure not less than the design pressure or maximum permissible working pressure as the case may be:

Design pressure shall not be less than the maximum permissible working pressure and shall take into account the possible fluctuations of pressure during actual operation.

- (b) No pressure vessel or plant shall be used in a factory unless there has been obtained from the maker of the pressure vessel or plant or from the competent person a certificate specifying the design pressure thereof, and stating the nature of tests to which the pressure vessel or plant and its fittings (if any) have been subjected, and every pressure vessel or plant so used in a factory shall be marked so as to enable it to be identified as to be the pressure vessel or plant to which the certificate relates and the certificate shall be kept available for perusal by the Inspector.
- (c) No pressure vessel or plant shall be permitted to be operated or used at a pressure higher than its design pressure, or the maximum permissible working pressure as shown in the certificate.

(7) *In-service test and examination –*

- (a) Every pressure vessel or plant in service shall be thoroughly examined by a competent person –
  - (i) externally, once in every six months, to ensure general condition of the vessel and the working of its fittings, and
  - (ii) internally, once in every twelve months, to ensure condition of the walls, seams, and ties, both inside and outside the vessel, soundness of the parts of the vessel, and the effects of corrosion:

Provided that if by reason of the construction of a pressure vessel or plant, a thorough internal examination is not possible, this examination may be replaced by a hydrostatic test which shall be carried out once in every two years.

Provided further that for a pressure vessel or plant in continuous process which cannot be frequently opened, the period of internal examination may be extended to four years; and

(iii) by an hydraulic test once in every period of four years:

Provided that in respect of a pressure vessel or plant with thin walls, such as sizing cylinder made of copper or any other non-ferrous metal, periodic hydrostatic test may be dispensed with subject to the condition that the requirements laid down in sub-rule (8) are fulfilled.

Provided further that if the Chief Inspector certifies that it is impracticable to carry out thorough external examination of any pressure vessel or plant every six months as required in sub-clause (i), or if owing to its construction and use a pressure vessel or plant cannot be hydrostatically tested as required in sub-clauses (ii) and (iii), a thorough external examination of the pressure vessel or plant shall be carried out at least once in every two years and at least once in every four years a thorough systematic non-destructive test like ultrasonic test for metal thickness or other defects of all parts, the failure of which might lead to eventual rupture of the pressure vessel or plant, shall be carried out.

(b) The pressure for the hydrostatic test to be carried out for the purpose of this sub-rule shall be 1.25 times the design pressure or 1.5 times the maximum permissible working pressure, whichever is less.

(8) *Thin walled pressure vessel or plant –*

- (a) In respect of any pressure vessel or plant of thin walls such as sizing cylinder made of copper or any other non-ferrous metal, the maximum permissible working pressure shall be reduced at the rate of 5 per cent of the original maximum permissible working pressure for every year of its use after the first five years and no such cylinder shall be allowed to continue to be used for more than twenty years after it was first taken into use.
- (b) If any information as to the date of construction, thickness of walls, or maximum permissible working pressure is not available, the age of such pressure vessel or plant shall be determined by the competent person in consultation with the Chief Inspector from the other particulars available with the manager.
- (c) Every new and second hand pressure vessel or plant of thin walls to which repairs likely to affect its strength or safety have been carried out, shall be tested before use to at least 1.5 times its maximum permissible working pressure.

(9) *Report by competent person -*

- (a) If during any examination any doubt arises as to the ability of the pressure vessel or plant to work safely until the next prescribed examination, the competent person shall enter in the prescribed register his observations, findings and conclusions with other relevant remarks with reasons and may authorise the pressure vessel or plant to be used and kept in operation subject to a lowering of maximum permissible working pressure, or to more frequent or special examination or test, or subject to both these conditions.
- (b) A report of every examination or test carried out shall be completed in form 13 and shall be signed by the person making the examination or test, and shall be kept available for perusal by the Inspector at all hours when the factory or any part thereof is working.
- (c) Where the report of any examination under this rule specified any conditions for

securing the safe working of any pressure vessel or plant, the pressure vessel or plant shall not be used unless the specified condition is fulfilled.

- (d) The competent person making report of any examination under this rule, shall within seven days of the completion of the examination, send to the Inspector a copy of the report in every case where the maximum permissible working pressure is reduced or the examination shows that the pressure vessel or plant or any part thereof cannot continue to be used with safety unless certain repairs are carried out or unless any other safety measure is taken.

**Rule prescribed under sub-section (2) of Section 34:**

**69. Excessive weights-** (1) Definitions .– For the purpose of this rule, unless there is anything repugnant in the subject or context,-

- (a) “manual transport of loads” means any transport in which the weight of the load is wholly borne by one worker, and, it covers the lifting and putting down of loads;
- (b) “regular manual transport of loads” means any activity which is continuously or principally devoted to the manual transport of loads, or which normally includes, even though intermittently, the manual transport of loads.

- (2) No person, unaided by another person, or mechanical aid, be required or allowed to lift, put down, carry or move by hand or on head any load of material, article, tool, appliance exceeding the maximum limit in weight as set out in the following Schedule:-

**SCHEDULE**

Persons	Maximum weight of material, article, tool or appliance
(a) Adult (male)	55 Kilograms
(b) Adult (female)	30 Kilograms
(c) Adolescent (male)	30 Kilograms
(d) Adolescent (female)	20 Kilograms
(e) Child (male)	16 Kilograms
(f) Child (female)	14 Kilograms

- (3) No woman or young person (adolescent or child) shall engage, in conjunction with others, in lifting, carrying or moving by hand or on head any material, article, tool or appliance, if the weight thereof exceeds the weight fixed by the Schedule to sub-rule (2) for any of the persons engaged, multiplied by the number of the persons engaged.
- (4) Taking into account all conditions in which the work is to be performed, no worker shall be required or permitted to engage in the manual transport of load, which by reason of its weight, is likely to jeopardize his health or safety.

- (5) Wherever reasonably practicable, suitable technical devices shall be used for the manual transport of loads.
- (6) Notwithstanding the fact that workers are engaged in the regular manual transport of loads within the permissible limits as set out in sub-rule (2), they should be subjected to prior to regular assignment and periodical examination at an interval of 12 months if the assignment of such jobs, exceeds more than 12 months”.

**Rule prescribed under Section 35:**

**70. Protection of eyes** – Effective screens or suitable goggles shall be provided for the protection of persons employed in or in the immediate vicinity of the following processes:-

- (a) The processes specified in Schedule I annexed hereto, being processes which involve risk of injury to eyes from particles or fragments thrown off in the course of the processes.
- (b) The processes specified in Schedule II annexed hereto being processes which involve risk of injury to eyes by reasons of exposure to excessive light or infrared or ultra-violet radiations.

**SCHEDULE I**

1. Breaking, cutting, dressing or carving of bricks, stone, concrete, slag or similar materials by means of a hammer, chisel, pick or similar hand tool or by means of portable tool driven by mechanical power, and the dry grinding of surfaces of any such materials by means of a wheel or disc driven by mechanical power, where, in any of the foregoing cases, particles or fragments are liable to be thrown off towards the face of the operator in the course of the process.
2. Dry grinding of surfaces of metal by applying them by hand to a wheel, disc or band driven by mechanical power, and of surfaces of metal by means of a portable tool driven by mechanical power.
3. Dividing into separate parts of metal, bricks, stone, concrete or similar materials by means of a high speed saw driven by mechanical power or by means of an abrasive cutting-off wheel or disc driven by mechanical power.
4. Turning of metals or articles of metal, where particles or fragments are liable to be thrown off towards the face of the operator in the course of the process.
5. Drilling by means of portable tools, where particles or fragments are liable to be thrown off towards the face of the operator in the course of the process.
6. Welding and cutting of metals by means of an electric, oxy-acetylene or similar process.
7. Hot fettling of steel casting by means of flux injected burner or air torch, and de-seaming of metal.
8. Fettling of metal castings involving the removal of metal, including runners, gates and risers, and removal of any other material during the course of such fitting.
9. Chipping of metal, and chipping, knocking out, cutting out or cutting off of cold rivets, belts, nuts, lugs, pins, cellars or similar articles from any structure or plant, or from part of any structure or plant, by means of a hammer, chisel, punch or similar hand tool, or by means of a portable tool driven by mechanical power.

10. Chipping or scurfing of paint, scale, slag, rust or other corrosion from the surface metal and other hard materials by means of a hand tool or by a portable tool driven by mechanical power.
11. Breaking of scrap metal by means of a hammer or by means of a tool driven by mechanical power.
12. Routing of metal, where particles or fragments are liable to be thrown off towards the face of the operator in the course of the process.
13. Work with drop hammers and power hammers used in either case for the manufacture of forgings, and work by any person not working with such circumstances and in such a position that particles or fragments are liable to be thrown off towards his face during work with drop hammers or power hammers.
14. Work at a furnace where there is risk to the eye from molten metal.
15. Pouring or skimming of molten metal.
16. Work involving risk to the eyes from hot sand being thrown off.
17. Turning or dressing of an abrasive wheel.
18. Handling in open vessels or manipulation of strong acids, or dangerous corrosive liquids or materials, and operation, maintenance or dismantling of plant or any part of plant, being plant or part of plant which contains or has contained such acids, liquids or materials, unless the plant or part of plant has been so prepared (by isolation, reduction of pressure or otherwise) or designed and constructed as to prevent risk of injury.
19. Any other process wherein there is a risk of injury to eyes from particles or fragments thrown off during the course of the process.

## SCHEDULE II

1. Welding or cutting of metals by means of an electrical, oxy-acetylene or similar process.
2. All work on furnaces where there is risk of exposure to excessive light or infra-red radiations.
3. Process such as rolling, casting or forging of metals, where there is risk of exposure to excessive light or infra-red radiations.
4. Any other process wherein there is a risk of injury to eyes from exposure to excessive light or infra-red or ultra-violet radiations.

### **Rule prescribed under sub-section (6) of Section 36:**

**71. Minimum dimensions of man-holes** – Every chamber, tank, vat, pipe flue or other confined space in which persons may have to enter and which may contain dangerous fumes to such an extent as to involve risk of the persons being overcome thereby, shall, unless there is other effective means of egress, be provided with a man-hole which may be rectangular, oval or circular in shape, and which shall –

- (a) in the case of rectangular or oval shape, be not less than 40 centimetres long and 30 centimetres wide;
- (b) in the case of a circular shape, be not less than 40 centimetres in diameter.

### **Exemption under sub-section (5) of Section 37:**

**72. Exemptions** – The requirements of sub-section (4) of Section 37 shall not apply to the following processes carried on in any factory:-

- (a) The operation of repairing a water sealed gas-holder by the electric welding process, subject to the following conditions:-
  - (i) The gas-holder shall contain only the following gases, separately or mixed at a pressure greater than atmospheric pressure, namely, town gas, coke-oven gas, producer gas, blast furnace gas or gases other than air, used in their manufacture:

Provided that this exemption shall not apply to any gas-holder containing acetylene or mixture of gases, to which acetylene has been added intentionally;

- (ii) Welding shall only be done by the electric welding process and shall be carried out by experience operatives under the constant supervision of a competent person.
- (b) The operations of cutting or welding steel or wrought iron gas mains and services by the application of heat, subject to the following conditions:-
  - (i) the main or service shall be situated in the open air, and it shall contain only the following gases, separately or mixed at a pressure greater than atmospheric pressure, namely, town gas, coke-oven gas, producer gas, blast furnace gas or gases other than air, used in their manufacture;
  - (ii) the main or service shall not contain acetylene or any gas or mixture of gases to which acetylene has been added intentionally;
  - (iii) The operation shall be carried out by an experienced person or persons and at least two persons (including those carrying out the operations) experienced in work on gas mains and over 18 years of age shall be present during the operation;
  - (iv) The site of the operation shall be free from any inflammable or explosive gas or vapour;
  - (v) Where acetylene gas is used as a source of heat in connection with an operation, it shall be compressed and contained in a porous substance in a cylinder; and
  - (vi) Prior to the application of any flame to the gas main or service, this shall be pierced or drilled and the escaping gas ignited.
- (c) The operation of repairing an oil tank on any ship by the electric welding process, subject to the following conditions –
  - (i) The only oil contained in the tank shall have a flash point of not less than 66 deg C (close test) and a certificate to this effect shall be obtained from two competent analysts;
  - (ii) The analyst's certificate shall be kept available for inspection by an Inspector, or by any person employed or working on the ship;
  - (iii) The welding operation shall be carried out only on the exterior surface of the

tank of a place –

- (a) which is free from oil or oil leakage in inflammable quantities; and
  - (b) which is not less than 30 centimetres below the nearest part of the surface of the oil within the tank; and
- (iv) Welding shall be done only by the electric welding and shall be carried out by experienced operators under the constant supervision of a competent person.

**Rule prescribed under Section 38 and 41:**

**73. Fire** – (1) Processes, equipment, plant, etc. involving serious explosion and serious fire hazards –

- (a) All processes involving serious explosion and flash fire hazard shall be located in segregated buildings where the equipment shall be so arranged that only a minimum number of employees are exposed to such hazards at any one time.
- (b) All industrial processes involving serious fire hazard shall be located in buildings or work places separated from one another by walls of fire-resistant construction.
- (c) Equipment and plant involving serious fire or flash fire hazard shall, wherever possible, be so constructed and installed that in case of fire, they can be easily isolated.
- (d) Ventilation ducts, pneumatic conveyors and similar equipment involving a serious fire risk shall be provided with flame-arresting or automatic fire extinguishing appliances.
- (e) In all workplaces having serious fire or flash fire hazards, passages between machines, installations or piles of material shall be at least 90 cm wide.

(2) *Access for fire fighting* – Buildings and plants shall be so laid out and roads, passageways, etc. so maintained as to permit unobstructed access for fire fighting.

(3) *Protection against lightning* – Protection from lightning shall be provided for –

- (i) buildings in which explosive or highly inflammable substances are manufactured, used, handled or stored;
- (ii) storage tanks containing oils, paints or other inflammable liquids;
- (iii) grain elevators; and
- (iv) buildings, tall chimneys or stacks where inflammable gases, fumes, dust or lint are likely to be present.

(4) *Explosives* – All explosives shall be handled, transported, stored and used in accordance with the provisions in the Indian Explosives Act, 1884.

(5) *Precautions against ignition* – Wherever there is danger of fire or explosion from accumulation of inflammable or explosive substances in air –

- (a) all electrical apparatus shall either be excluded from the area of risk or they shall be of such construction and so installed and maintained as to prevent the danger of their being a source of ignition;

- (b) effective measures shall be adopted for prevention of accumulation of static charges to a dangerous extent;
  - (c) workers shall wear shoes without iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction;
  - (d) smoking, lighting or carrying of matches, lighters or smoking materials shall be prohibited;
  - (e) transmission belts with iron fasteners shall not be used; and
  - (f) all other precautions, as are reasonably practicable, shall be taken to prevent initiation of ignition from all other possible sources such as open flames, frictional sparks, overheated surfaces of machinery or plant, chemical or physical-chemical reaction and radiant heat.
- (6) *Spontaneous ignition* – Where materials are likely to induce spontaneous ignition, care shall be taken to avoid formation of air pocket and to ensure adequate ventilation.
- (7) *Cylinders containing compressed gas* – Cylinders containing compressed gas may only be stored in open if they are protected against excessive variation of temperature, direct rays of sun, or continuous dampness. Such cylinders shall never be stored near highly inflammable substances, furnaces or hot processes. The room where such cylinders are stored shall have adequate ventilation.
- (8) *Storage of inflammable liquids* – (1) The quantity of inflammable liquids in any work room shall be the minimum required for the process or processes carried on in such room. Inflammable liquids shall be stored in suitable containers with close fitting covers:
- (a) Provided that not more than 20 litres of inflammable liquids having a flash point of 21 deg C or less shall be kept or stored in any work room.
  - (b) Inflammable liquids shall be stored in closed containers and in limited quantities in well ventilated rooms of fire resisting construction which are isolated from the remainder of the building by fire walls and self closing fire doors.
  - (c) Large quantities of such liquids shall be stored in isolated adequately ventilated building of fire resisting construction or in storage tanks, preferably underground and at a distance from any building as required in the Petroleum Rules, 1976.
  - (d) Effective steps shall be taken to prevent leakage of such liquids into basements, sumps or drains and to confine any escaping liquid within safe limits.
- (9) *Accumulation of inflammable dust, gas, fume or vapour in air or inflammable waste material on the floors* –
- (a) Effective steps shall be taken for removal or prevention of the accumulation in the air of inflammable dust, gas, fume or vapour to an extent which is likely to be dangerous.
  - (b) No waste material of a inflammable nature shall be permitted to accumulate on the floors and shall be removed at least once in a day or shift, and more often, when possible. Such materials shall be placed in suitable metal containers with covers wherever possible.
- (10) *Fire exits* – (a) In this rule –
- (i) “horizontal exit” means an arrangement which allows alternative egress from a

floor area to another floor at or near the same level in an adjoining building or an adjoining part of the same building with adequate separation; and

- (ii) “travel distance” means the distance an occupant has to travel to reach an exit.
- (b) An exit may be a doorway, corridor, passageway to an internal or external stairway or to a verandah. An exit may also include a horizontal exist leading to an adjoining building at the same level.
- (c) Lifts, escalators and revolving doors shall not be considered as exits for the purpose of this sub-rule.
- (d) In every room of a factory exits sufficient to permit safe escape of the occupants in case of fire or other emergency shall be provided which shall be free of any obstruction.
- (e) The exits shall be clearly visible and suitably illuminated with suitable arrangement by whatever artificial lighting adopted for this purpose, to maintain the required illumination in case of failure of the normal source of electric supply.
- (f) The exits shall be marked in a language understood by the majority of the workers.
- (g) Fire resisting doors or roller shutters shall be provided at appropriate places along the escape routes to prevent spread of fire and smoke, particularly at the entrance of lifts or stairs where funnel or flue effect may be created inducing an upward spread of fire.
- (h) All exits shall provide continuous means of aggress to the exterior of a building or to an exterior open space leading to a street.
- (i) Exits shall be so located that the travel distance on the floor shall not exceed 30 metres.
- (j) In case of those factories where high hazard materials are stored or used, the travel distance to the exit shall not exceed 2.5 metres and there shall be at least two ways of escape from every room, howsoever small, except toilet rooms, so located that the points of access thereto are out of or suitably shielded from areas of high hazards.
- (k) Wherever more than one exit is required for any room space or floor, exits shall be placed as remote from each other as possible and shall be arranged to provide direct access in separate directions from any point in the area served.
- (l) The unit of exit width used to measure capacity of any exist shall be 50 cm. A clear width of 25 cm. shall be counted as an additional half unit. Clear width of less than 25 cm shall not be counted for exit width.
- (m) Occupants per unit width shall be 50 for stairs and 75 for doors.
- (n) For determining the exits required, the occupant load shall be reckoned on the basis of actual number of occupants within any floor area or 10 square metres per person, whichever is more.
- (o) There shall not be less than two exists serving every floor area above and below the ground floor, and at least one of them shall be an internal enclosed stairway.
- (p) For every building or structure used for storage only, and every section thereof considered separately, shall have access to at least one exit so arranged and located

as to provide a suitable means of escape for any person employed therein, and in any such room wherein more than 10 persons may be normally present, at least two separate means of exist shall be available, as remote from each other as practicable.

- (q) Every storage area shall have access to at least one means of exit which can be readily opened.
- (r) Every exit doorway shall open into an enclosed stairway, a horizontal exit on a corridor or passageway providing continuous and protected means of aggress.
- (s) No exit doorway shall be less than 100 cm in width and not less than 200 cm in height.
- (t) Exit doorways shall open towards, that is, away from the room but shall not obstruct the travel along any exit. No door when opened, shall reduce the required width of stairway or landing to less than 90 cm. Overhead or sliding doors shall not be installed for this purpose.
- (u) An exit door shall not open immediately upon a flight of stairs. A landing equal to at least the width of the doorway shall be provided in the stairway at each doorway. The level of landing shall be the same as that of the floor which it serves.
- (v) The exit doorways shall be openable from the side which they serve without the use of a key.
- (w) Exit corridors and passageways shall be of a width not less than the aggregate required width of exit doorways leading from there in the direction of travel to the exterior.
- (x) Where stairways discharge through corridors and passageways, the height of the corridors and passageways shall not be less than 2.4 metres.
- (y) Internal stairs shall be constructed of non-combustible materials throughout.
- (z) Internal stairs shall be constructed as a self-contained unit width at least one side adjacent to an external wall and shall be completely enclosed.
- (aa) A staircase shall not be arranged around a lift shaft unless the latter is totally enclosed by a material having a fire-resistance rating not lower than that of the type of construction of the former.
- (bb) Hollow combustible construction shall not be permitted.
- (cc) The minimum width of an internal staircase shall be 100 cm.
- (dd) The minimum width of treads without nosing shall be 25 cm, for an internal staircase. The treads shall be constructed and maintained in a manner to prevent slipping.
- (ee) The maximum height of a riser shall be 19 cm and the number of risers shall be limited to 12 per flight.
- (ff) Hand rails shall be provided with a minimum height of 100cm and shall be firmly supported.
- (gg) The use of spiral staircase shall be limited to low occupant load and to a building of height of 9 metres, unless they are connected to platform such as balconies and terraces to allow escapees to pause. A spiral staircase shall be not less than 300 cm in diameter and have adequate head room.

- (hh) The width of a horizontal exit shall be the same as for the exit doorways.
  - (ii) The horizontal exit shall be equipped with at least one fire door of self closing type.
  - (jj) The floor area on the opposite or refuge side of a horizontal exit shall be sufficient to accommodate occupants of the floor areas served, allowing not less than 0.3 square metre per person. The refuge area shall be provided with exits adequate to meet the requirements of this sub-rule. At least one of the exits shall lead directly to the exterior or street.
  - (kk) Where there is difference in level between connected areas for horizontal exit, ramps not more than 1 in 8 slope shall be provided. For this purpose stops shall not be used.
  - (ll) Doors in horizontal exits shall be openable at all times.
  - (mm) Ramps with a slope of not more than 1 in 10 may be substituted for the requirements of staircase. For all slopes exceeding 1 in 10 and wherever the use is such as to involve danger of slipping, the ramp shall be surfaced with non-slipping material.
  - (nn) In any building not provided with automatic fire alarm a manual fire alarm system shall be provided if the total capacity of the building is over 500 persons, or if more than 25 persons are employed above or below the ground floor, except that no manual fire alarm shall be required in one storey buildings where the entire area is undivided and all parts thereof are clearly visible to all occupants.
- (11) *First-aid-fire fighting arrangements-*
- (a) In every factory there shall be provided and maintained adequate and suitable fire fighting requirement for fighting fires in the early stages, (hereinafter referred to as first-aid fire fighting equipment) in this rule.
  - (b) The types of first-aid fire fighting equipment to be provided shall be determined by considering the different types of fire risks which are classified as follows:-
    - (i) “*Class A fire*” – Fire due to combustible materials such as wood, textiles, paper, rubbish and the like.
      1. “*Light hazard*” – Occupancies like offices, assembly halls, canteens, rest-rooms, ambulance rooms and the like;
      2. “*Ordinary hazard*” – Occupancies like saw mills, carpentry shop, small timber yards, book binding shops, engineering workshop and the like;
      3. “*Extra hazard*” – Occupancies like large timber yards, godowns storing fibrous materials, floor mills, cotton mills, jute mills, large wood working factories and the like;
    - (ii) “*Class B fire*” – fire due to inflammable liquids like oil, petroleum products, solvents, grease, paint, etc.
    - (iii) “*Class C fire*” – Fire arising out of gaseous substances.
    - (iv) “*Class D fire*” – Fire arising from reactive chemicals, active metals and the like.
    - (v) “*Class E fire*” – Fire involving electrical equipment and delicate machinery and the like.

(c) The number and types of first-aid fire fighting equipment to be provided shall be as per the following scale:

(i) Class A fire –

1. *Light hazard* – One 9 litre water bucket for every 100 square metres of floor area or part thereof and one 9-litre water type (soda-acid) or gas pressure or bucket pump) extinguisher shall be provided for each 6 buckets or part thereof with a minimum of one extinguisher and two buckets per compartment of the building. These equipment shall be so distributed over the entire floor areas that a person shall have to travel not more than 25 metres from any point to reach the nearest equipment.

2. *Ordinary hazard* – One 9-litre water bucket for every 100 square metres of floor area or part thereof and one 9-litre water type (soda-acid, gas pressure or bucket pump) extinguisher shall be provided for each six buckets or part thereof, with a minimum of 2 extinguishers and 4 buckets per compartment of the building. These equipment shall be so distributed over the entire floor area that a person shall have to travel not more than 15 metres from any point to reach the nearest equipment.

3. *Extra hazard* – The scale of equipment would be what is prescribed for ordinary hazard and, in addition, such extra equipment as, in the opinion of the Inspector, are necessary having regard to the special nature of occupancy.

Provided that in special cases, the Inspector, after taking into consideration the circumstances, authorise that the buckets prescribed in this clause may be dispensed with, provided the number of the extinguishers provided is double than that what is prescribed.

(ii) Class B fire –

There shall be at least one fire extinguisher either foam type or carbon dioxide or dry powder type per 50 square metres of floor area and shall be so distributed that no person is required to travel more than 15 metres from any point to reach the nearest equipment. In addition to the requirements of extinguishers specified here, requirements as laid down in clause (i) shall also be provided.

(iii) Class C fire –

Carbon dioxide or dry chemical powder extinguishers shall be provided near each plant or group of plants.

(iv) Class D fire –

Special dry powder (chloride based) type of extinguishers, or sand buckets shall be provided on a scale as laid down for Class B fire. The Inspector may require a higher scale of portable equipment to be provided depending upon the risk involved.

(v) Class E fire –

Carbon dioxide or dry power type extinguishers, or sand buckets shall be provided on a scale as laid down for Class B fire. The Inspector may require a higher scale of portable equipment to be provided depending upon the risk involved.

- (d) The first-aid fire fighting equipment shall conform to the relevant Indian Standards.
- (e) As far as possible the first-aid fire fighting equipment shall all be similar in shape and appearance and shall have the same method of operation.
- (f) All first-aid fire fighting equipment shall be placed in a conspicuous position and shall be readily and easily accessible for immediate use. Generally, these equipment shall be placed as near as possible to the exits or stair landing or normal routes of escape.
- (g) All water buckets and bucket pump type extinguishers shall be filled with clean water. All sand buckets shall be filled with clean, dry and fire sand.
- (h) All other extinguishers shall be charged appropriately in accordance with the instructions of the manufacturer.
- (i) Each first-aid fire fighting equipment shall be allotted a serial number by which it shall be referred to in the records. The following details shall be painted with white paint on the body of each equipment:
  - 1. Serial number
  - 2. Date of last refilling; and
  - 3. Date of last inspection.
- (j) First-aid fire fighting equipment shall be placed on platforms or in cabinets in such a way that their bottom is 75 cms above the floor level. Fire buckets shall be placed on hooks attached to a suitable stand or wall in such a way that their bottom is 75 cms above the floor level. Such equipment if placed outside the building, shall be under sheds or covers.
- (k) All extinguishers shall be thoroughly cleaned and recharged immediately after discharge. Sufficient refill material shall be kept readily available for this purpose at all times.
- (l) All first-aid fire fighting equipment shall be subjected to routine maintenance, inspection and testing to be carried out by properly trained persons. Periodicity of the routine maintenance, inspection and test shall conform to the relevant Indian Standards.

(12) *Other fire fighting arrangements* – (a) In every factory, adequate provision of water supply for fire fighting shall be made and where the amount of water required in litres per minute, as calculated from the formula  $A+B+C+D$  divided by 20 is 550 or more, power driven trailer pumps of adequate capacity to meet the requirement of water as calculated above shall be provided and maintained.

In the above formula-

- A = the total area in square metres of all floors including galleries in all buildings of the factory;
- B = the total area in square metres of all floors and galleries including open spaces in which combustible materials are handled or stored;
- C = the total area in square metres of all floors over 15 metres above ground level; and
- D = the total area in square metres of all floors of all buildings other than those of fire resisting construction.

Provided that in areas where the fire risk involved does not require use of water, such areas under B, C, and D may, for the purpose of calculation, be halved:

Provided further that where the areas under B, C or D are protected by permanent automatic fire fighting installations approved by any fire association or fire insurance company, such areas may, for the purpose of calculation, be halved:

Provided also that where the factory is situated at not more than 3 kilometres from an established city or town fire service, the pumping capacity based on the amount of water arrived at by the formula above may be reduced by 25%; but no account shall be taken of this reduction in calculating water supply required under clause (a).

- (b) Each trailer pump shall be provided with equipment as per Schedule appended to this rule. Such equipment shall conform to the relevant Indian Standards.
- (c) Trailer pumps shall be housed in a separate shed or sheds which shall be sited close to a principal source of water supplies in the vicinity of the main risks of the factory.
- (d) In factories where the area is such as cannot be reached by man-hauling of trailer pumps within reasonable time vehicles with towing attachment shall be provided at the scale of one for every four trailer pumps with a minimum of one such vehicle kept available at all times.
- (e) Water supply shall be provided to give flow of water as required under clause (a) for at least 100 minutes. At least 50% of this water supply or 450,000 litres whichever is less, shall be in the form of static tanks of adequate capacities (not less than 450,000 litres each) distributed round the factory with due regard to the potential fire risks in the factory. (Where piped supply is provided, the size of the main shall not be less than 15 centimetres diameter and it shall be capable of supplying a minimum of 4500 litres per minute at a pressure of not less than 7 kilograms per square centimetre).
- (f) All trailer pumps including the equipment provided with them and the vehicles for towing them shall be maintained in good condition and subjected to periodical inspection and testing as required.

(13) *Personnel in charge of equipment and for fire fighting, fire drills, etc* – (a) the first-aid and other fire fighting equipment to be provided as required in sub-rules (11) and (12) shall be in charge of a trained responsible person.

- (b) Sufficient number of persons shall be trained in the proper handling of fire fighting equipment as referred to in clause (a) and their use against the types of fire for which they are intended in order to ensure that adequate number of persons are available for fire fighting both by means of first-aid fire fighting equipment and other equipment. Wherever vehicles with towing attachment are to be provided as required in clause (d) of sub-rule (12) sufficient number of persons shall be trained in driving these vehicles to ensure that trained persons are available for driving them whenever the need arises.
- (c) Fire fighting drills shall be held at least once in every 3 months.

(14) Automatic sprinklers and fire hydrants shall be in addition and not in substitution of the requirements in sub-rules (11) and (12).

(15) If the Chief Inspector is satisfied in respect of any factory or any part of the factory that owing to the exceptional circumstances such as inadequacy of water supply or infrequency of the manufacturing process or for any other reason, to be recorded in writing, all or any of the requirements of the rules are impracticable or not necessary for the protection of workers, he may by order in writing (which he may at his discretion revoke) exempt such factory or part of the factory from all or any of the provisions of the rules subject to conditions as he may by such order prescribe.

## **SCHEDULE**

### **Equipment to be provided with trailer pump**

For light trailer pump of a capacity of 680 litres/minute

- 1 Armoured suction hose of 9 metres length; with wrenches.
- 1 Metal suction strainer.
- 1 Basket strainer.
- 1 Two-way suction collecting-head.
- 1 Suction adaptor.
- 10 Unlined or rubber lined 70mm delivery hose of 25 metres length complete with quick-release couplings.
- 1 Dividing breaching-piece.
- 2 Branch-piece with 15mm nozzles.
- 1 Diffuser nozzle.
- 1 Standpipe with blank cap.
- 1 Hydrant key
- 4 Collapsible canvas buckets
- 1 Fire hook (preventor) with cutting edge.
- 1 25mm manila rope of 30 metres length.
- 1 Extension ladder of 9 metres length (where necessary).
- 1 Heavy axe
- 1 Spade
- 1 Pick axe
- 1 Crowbar
- 1 Saw
- 1 Hurricane lamp
- 1 Electric lamp.
- 1 Pair of rubber gloves.

For large trailer pump of a capacity of 1800 litres/minute

- 1 Armoured suction hose of 9 metres length, with wrenches.
- 1 Metal strainer.
- 1 Basket strainer
- 1 Three-way suction collecting head.
- 1 Suction adaptor
- 14 Unlined or rubber lined 70mm delivery hose of 25 metres length complete with quick-release couplings.
- 1 Dividing breaching-piece
- 4 Branch pipes with one 25mm two 20mm and one diffuser nozzles.
- 2 Standpipe with blank caps.
- 2 Hydrant keys
- 6 Collapsible canvas buckets.
- 1 Ceiling hook (preventor) with cutting edge.
- 1 50mm manila rope of 30 metres length.
- 1 Extension ladder of 9 metres length (where necessary)
- 1 Heavy axe
- 1 Spade
- 1 Pick axe
- 1 Crowbar
- 1 Saw
- 1 Hurricane lamp
- 1 Electric lamp.
- 1 Pair of rubber gloves

*NOTE:* If it appears to the Chief Inspector of Factories that in any factory the provision of breathing apparatus is necessary he may by order in writing require the occupier to provide suitable breathing apparatus in addition to the equipment for light trailer pump or large trailer pump as the case may be.

**Rule prescribed under Section 40-B:**

**74. Safety Officers – (1) Qualifications –**

- (a) A person shall not be eligible for appointment as a Safety Officer unless he-
  - (i) possesses-
    - (aa) a recognised degree in any branch of engineering or technology and has had practical experience of working in a factory in a supervisory capacity for a period of not less than 2 years; or

- (bb) a recognised degree in physics or chemistry and has had practical experience of working in a factory in a supervisory capacity for a period of not less than 5 years; or
  - (cc) a recognised diploma in any branch of engineering or technology and has had practical experience of working in a factory in a supervisory capacity for a period of not less than 5 years;
  - (ii) Possesses a degree or diploma in industrial safety awarded by the University or Board of Technical Education of any State Government or Union territory Administration in this behalf, and.
  - (iii) had adequate knowledge of the language spoken by majority of the workers in the region in which the factory where he is to be appointed is situated.
- (b) Notwithstanding the provisions contained in clause (a), any person who –
- (i) possesses a recognised degree or diploma in engineering or technology or a degree in physics or chemistry and has had experience of not less than 5 years in a department of the Central or State Government which deals with the administration of the Factories Act, 1948 or the Indian Dock Labourers Act, 1934; or
  - (ii) possesses a recognised degree or diploma in engineering or technology or a degree in physics or chemistry and has had experience of not less than 5 years, full time, on training, education, consultancy or research in the field of accident prevention in industry or in any institution or Government department;

shall also be eligible for appointment as a Safety Officer:

Provided that the Chief Inspector may, subject to such conditions as he may specify, grant exemption from the requirements of this sub-rule, if in his opinion, a suitable person possessing the necessary qualifications and experience is not available for appointment.

Provided further that in the case of a person who has been working as a Safety Officer for a period of not less than 3 years on the date of commencement of this rule the Chief Inspector may subject to such conditions as he may specify, relax all or any of the above said qualifications.

(2) *Conditions of service* – (a) Where the number of Safety Officers to be appointed in a factory as required by a notification in the Official Gazette exceeds, one, one of them shall be designated as the Chief Safety Officer and shall have a status higher than that of the others. The Chief Safety Officer shall be in overall charge of the safety functions as envisaged in sub-rule (3), the other Safety Officers shall be working under his control.

- (b) The Chief Safety Officer or the Safety Officer in the case of factories where only one Safety Officer is required to be appointed shall be given the status of a senior executive and he shall work directly under the control of the chief executive of the factory. All other Safety Officers shall be given appropriate status to enable them to discharge their functions effectively.
- (c) The scale of pay and the allowances to be granted to the Safety Officers including the Chief Safety Officer, and the other conditions of their service shall be the same as those of the other officers of corresponding status in the factory, i.e. those officers

reporting directly the Chief Executive.

- (d) In the case of dismissal or discharge, a Safety Officer shall have a right to appeal to the Government whose decision thereon shall be final.

(3) *Duties of Safety Officers* – (a) The duties of a Safety Officer shall be to advise and assist the factory management in the fulfillment of its obligations, statutory or otherwise, concerning prevention of personal injuries and maintaining a safe working environment. These duties shall include the following, namely-

- (i) to advise the concerned departments in planning and organizing measures necessary for the effective control of personal injuries;
- (ii) to advise on safety aspects in all job studies, and to carry out detailed job safety studies of selected jobs;
- (iii) to check and evaluate the effectiveness of the action taken or proposed to be taken to prevent personal injuries;
- (iv) to advise the purchasing and stores department in ensuring the availability of high quality personal protective equipment;
- (v) to provide advice on matters related to carrying out plant safety inspections;
- (vi) to carry out plant safety inspections in order to observe the physical conditions of work and the work practices and procedures followed by workers and to render advice on measures to be adopted for removing the unsafe physical conditions and preventing unsafe actions by workers;
- (vii) to render advice on matters related to reporting and investigation of industrial accidents and diseases;
- (viii) to investigate selected accidents;
- (ix) to investigate the cases of industrial diseases contracted and dangerous occurrences reportable under rule 132;
- (x) to advise on the maintenance of such records as are necessary relating to accidents, dangerous occurrences and industrial diseases;
- (xi) to promote setting up of safety committees and to act as adviser and catalyst to such committees;
- (xii) to organize in association with the concerned departments, campaigns, competitions, contests and other activities which will develop and maintain the interest of the workers in establishing and maintaining safe conditions of work and procedures; and
- (xiii) to design and conduct either independently or in collaboration with the training department, suitable training and educational Programme for the prevention of personal injuries.

(4) *Facilities to be provided to Safety Officers* – An occupier of the factory shall provide each Safety Officer with such facilities, equipment and information as are necessary to enable him to discharge his duties effectively.

(5) *Prohibition of performance of other duties* – No Safety Officer shall be required or

permitted to do any work which is inconsistent with or detrimental to the performance of the duties prescribed in sub-rule (3).

**Rules prescribed under Section 41:**

**75. Buildings and structures** – No building, wall, chimney, bridge, tunnel, road, gallery, stairway, ramp, floor, platform, staging, or other structure, whether of a permanent or temporary character, shall be constructed, situated or maintained in any factory in such a manner as to cause risk of bodily injury.

**76. Machinery and Plant** – No machinery, plant or equipment shall be constructed, situated, operated or maintained in any factory in such a manner as to cause risk of bodily injury.

**77. Methods of work** – No process or work shall be carried in any factory in such a manner as to cause risk of bodily injury.

**78. Stacking and storing of material, etc.** – No materials or equipment shall be stacked or stored in such a manner as to cause risk of bodily injury.

**79. Ladders** – All ladders used in replacing belts shall be specially made and reserved for that work and provide with hooks or an effective non-kid device. Ladders provided with hooks must have hooks fitted in such suitable position that they rest on the shaft when the bottom end of the ladder is resting on the floor.

**80. Protection of workers attending to prime movers** – (1) In every factory the work of oiling or attending to prime movers shall be done only by a specially trained adult male worker authorized to do such work whose name has been recorded in the register maintained in Form 10.

(2) Every such worker while oiling or attending to a prime mover shall wear tight-fitting clothing.

(3) A worker required to wear tight-fitting clothing under sub-rule (2) shall be provided by the occupier with clothing which shall consist of at least a pair of closely fitting shorts and a closely-fitting half-sleeve shirt or vest. Such clothing shall be returned to the occupier on termination of service or when new clothing is provided.

**81. Water-sealed gasholder** – (1) The expression “gasholder” means a water-sealed gasholder which has a storage capacity of not less than 141.5 cubic metres.

(2) Every gasholder shall be of adequate material and strength of sound construction and properly maintained.

(3) Where there is more one gasholder in a factory, every gasholder shall be marked in a conspicuous position with a distinguishing number or letter.

(4) Every gasholder shall be thoroughly examined externally by a competent person at least once in a period of 12 months.

(5) In the case of gasholder of which any lift has been in use for more than 10 years, the internal state of the sheeting shall, within one year of the coming into operation of these rules and thereafter at least once a every period of four years, be examined by a competent person by means of electronic or other accurate devices:

Provided that if the Chief Inspector is satisfied that such electronic or other accurate devices are not available, he may permit the cutting of samples from the crown end the sides of the holder:

Provided further that if the above examination raises a doubt an interval visual examination shall be made.

(6). All possible steps shall be taken to prevent or minimize ingress of impurities in the gasholder.

(7). No gasholder shall be taken to prevent except under the direct supervision of a person who, by his training, experience and knowledge of the necessary precautions against risks of explosion and of persons being overcome by gas, is competent to supervise such work.

(8). (a) All sample discs cut under sub-rule (5) above shall be kept readily available for inspection.

- b) A permanent register in Form 14 duly signed by the occupier or manager shall be maintained.
- c) The results of examinations by the competent person carried out as required under sub-rules (4) and (5) shall be recorded in Form 15.
- d) A copy of the report in Form 14 shall be kept in the register in Form 13 and both the register and the report shall be readily available or inspection.

(9). The Inspector of Factories shall inspect the gasholder at lest once in a period of 12 months.

### **Rules Prescribed under Sections 41 and 112:**

#### **82. Use of polymerizing machines in the printing departments of cotton textile mills.**

(1). The following precautions shall be taken when fabric are processed in polymerizing or curing machine for fixing prints by the emulsion technique, namely,-

- a) printed fabrics shall be thoroughly dried by passing them over drying cans or through a hot flue or other equally efficient means, before the same are allowed to pass through the polymerising machine;
- b) the exhaust flap or damper shall be provided with a hole or opening so that at least two third of it is always open;
- c) infra-red ray heaters of the machines shall be cut off while running the prints;
- d) the electrical heater shall be connected to a separate circuit and shall be provided with an isolation switch so as to ensure that it is completely cut off in an emergency;
- e) the electrical heater shall be so located that if there is any dropping of the solvent due to condensation, it does not directly come in contact with the heaters.

- f) The drive of the exhaust fan shall be interlocked with the main drive of the machine in such a way that if the exhaust motor stops, the machine including all heating devices shall also stop;
- g) The electrical heater shall have thermostats to regulate the temperature so that the heaters shall automatically cut off, if the temperature rises above the pre-set value;
- h) Adequate flaps shall be provided on top of the machine which can open and let off the fumes outside the workroom in case of an explosion or in case any pressure in built up;
- i) Filter gauze shall be cleaned at least once a week;
- j) Exhaust duct shall be cleaned at least once a week; and
- k) Tension of the V-belt drive of the fans shall be checked every week.

2) The machine shall be examined under the direct supervision of a responsible person designated by the occupier or manager, who by his experience and knowledge of necessary precautions against risks of explosion, is fit to supervise such work.

3) A register shall be maintained in which the details of the various checks carried under sub-rule 92) shall be entered and every entry made therein shall be signed by the person making the checks.

### **83. Shipbuilding and ship-repairing:-**

(1). Application- This rule shall apply as respects work carried out in any of the operations as defined in sub-rule (2).

(2). *Definitions.*- In this rule unless there is anything repugnant to the subject or context.-

- (a) “certificate of entry” means a certificate which is given by a person who is competent to give such certificates, and certifies that he has in an adequate and suitable manner tested the atmosphere in the oil-tank or oil-tanks specified in the certificate and found that having regard to all the circumstances of the case, including the likelihood or otherwise of the atmosphere being or becoming dangerous, entry to the oil-tank or oil-tanks without wearing breathing apparatus may in his opinion be permitted;
- (b) “hot work” means any work which involves-
  - (i) welding, burning, soldering, brazing, sand blasting or chipping by spark producing tools; or
  - (ii) use of non-flameproof electrical equipment or equipment with internal combustions engines:

and includes any other work which is likely to produce sufficient heat capable of igniting inflammable gases or vapours;

- (c) “naked light certificate” means a certificate which is given by a person who is competent analyst and who is competent to give such certificate, and certifies that he has in an adequate and suitable manner, tested for the presence of inflammable vapour in the oil-tank, compartment, space or other part of the vessel specified in the certificate and found it to be free therefrom and that having regard to all the

circumstances of the case including the likelihood or otherwise of the atmosphere becoming inflammable, the use of naked light, fires, lamps, or heated rivets or any hot work to be carried out may in his opinion be permitted in the oil-tank, compartment, space or other part of the vessel specified in the certificates;

- (d) “oil” means any liquid which has a flash point view 132 degrees centigrade and also includes lubricating oils, liquid methane, liquid butane and liquid propane;

*Explanations.-* Flash point wherever it occurs in this rule shall be flash as determined by Abel Closed Cup or Pensky-Marten Closed Cup procedures as described in I.S. 1448-1960.

- (e) “oil-tank” means any tank or compartment in which oil is or has been carried;
- (f) “the operation” means-
- (i) construction, reconstruction or breaking up of any ship or vessel, repairing, refitting, painting and finishing;
  - (ii) the scaling, scurfing or cleaning of its boilers (including combustion chambers or smoke bores); and
  - (iii) the cleaning of its bilges or oil-fuel tanks or any of its tanks last used for carrying oil.

For the purpose of this definition the expression “oil” means oil of any description whether or not oil within the meaning of foregoing definition of that expression;

- (g) “ship and vessels” shall have the same meanings as assigned to them in the Merchant Shipping Act, 1958;
- (h) “shipyard” means any temporary platform on or from which persons thereof, in which ships or vessels are constructed, reconstructed, repaired, refitted or finished;
- (i) “stage” means any temporary platform on or from which persons employed perform work on connection with the operations, but does not include a boatswain’s chair;
- (j) “staging” includes any stage, and any upright, thwart pin, wedge, distance piece, belt or other appliance or material, not being part of the structure of the vessel, which is used in connection with the support of any stage, and any guard-rails connected with a stage, and
- (k) “tanks” means a vessel constructed or adopted for carrying a cargo of oil in bulk.

### **ACCESS AND STAGING**

(3) *General access to vessels in a shipyard-* All main gangways giving general access to a vessel in a shipyard, whether from the ground or from a wharf or quay and all cross gangways leading from such a main gangway on to the vessel, shall-

- (a) be at least 60 centimeters wide;
- (b) be securely protected on each side to a height of a least 90 centimeters by strongly constructed upper and lower hand-rails and by a secure toe-board projecting at least 15 centimetres above the floor;
- (c) be of good construction, sound material and adequate strength;

- (d) be stable and wherever practicable, of permanent construction;
- (e) be kept in position as long as required; and
- (f) maintained in good repair.

4) *Access to dry dock.-*

- (a) Every flight of steps giving access from ground level either to an altar or to the bottom of a dry dock shall be provided throughout on each side with a substantial hand-rail. In the case of an open side, secure fencing to a height of at least 90 centimeters shall be provided by means of upper and lower rails, taut ropes or chains, or by other equally safe means. For the purpose of this clause a flight of steps which is divided into two by a chute for materials, with no space between either side of the chute and the steps, shall be deemed to be one flight of steps.
- (b) Such hand-rails and fencing as aforesaid shall be kept in position save when and to the extent to which their absence is necessary (whether or not for the purposes of the operations) for the access of persons, or for the movement of materials or vessels of the or for traffic or working, or for repairs, but hand-rails or fencing removed for any of these purposes shall be kept readily available and shall be replaced as soon as possible.

(5) *Access to vessels in dry rock.-*

- (a) If a ship is lying in a dry dock for the purpose of undergoing any of the operations, there shall be provided as means of access for the use of workers at such times as they have to pass to, or from, the ship or dry dock-
  - i) where reasonably practicable one or more ship's accommodation ladders; or
  - ii) One or more soundly constructed gangways or similar constructions.
- (b) The means so provided shall be not less than 55 centimeters wide properly secured and fenced throughout on each side to a clear height of 90 centimeters by means of upper and lower rails, taut ropes or chains or by any other safe means, except that in a case of the ship's accommodation ladder, such fencing shall be necessary on one side only provided where the other side is properly protected by the ship's side.
- (c) Where at any dry dock, there is a gangway giving access from an altar of the dock to a vessel which is in the dock for the purpose of undergoing any of the operations, and the edge of the altar is unfenced, adequate hand-holds shall be available for any length of the altar which workers commonly use when passing between the gangway and the nearest flight of steps which gives access to ground level.

(6) *Access to and from bulwarks.-* Where there is gangway leading on a bulwark of a vessel there shall be provided.-

- (a) wherever practicable, a platform at the inboard end of the gangway with safe means of access therefrom to the docks; or
- (b) where such a platform is not practicable, a second gangway or stairway leading from a bulwark on the dock which are either attached to the first mentioned gangway or

placed continuous to it, in which case means of access, securely protected by fencing, shall be provided from one to the other.

(7) *Access to staging, etc.-*

- (a) Where outside staging is erected in a shipyard, there shall be provided sufficient ladders giving direct access to the stages having regard to the extent of the staging and to the work to be done.
- (b) Where a vessel is under construction or reconstruction and workers are liable to go forward or aft or athwartship across or along uncovered deck-beams, or across or along floors, sufficient planks shall be provided on these deck-beams or on these floors for the purpose of access to or from places of work, and sufficient and suitable portable ladders shall be provided so as to give access either from the ground or outer bottom plating to the top of the floor.
- (c) Without prejudice to any other provision in this rule requiring a greater width, no footway or passageway constructed of planks shall be less than 45 centimeters wide.

(8) *Ladders-*

- (a) Subject to clauses (b) and (c) of this sub-rule, every ladder affords a means of access, communication or support to a person shall-
  - (i) be soundly constructed and properly maintained; and
  - (ii) be of adequate strength for the purpose for which it is used and;
  - (iii) be securely fixed either-
    - (aa) as near its upper resting place as possible, or
    - (bb) where this is impracticable, as at its base or where such fixing is impracticable a person shall be stationed at the base of the ladder when in use to prevent it from slipping; and
  - (iv) unless there is other adequate hand-hold extend to a height of at least 75 centimeters above the place of landing or the highest rung to be reached by the foot of any person working on the ladder, as the case may be, or, if this is impracticable, to the greatest practicable height;
- (b) Requirements (iii) and (iv) of the preceding clause of this sub-rule shall not apply to fixed ladders of a ship which do not comply with requirements (I) and (ii) of this clause.
- (c) Any worker who removes any ladder and sets it up in a new position shall, as regards that ladder, comply with requirements (iii) of clause (a) of this sub-rule.
- (d) Rope ladders shall provide foot-hold of a depth including any space behind the ladder of not less than 12 centimeters and, so far as is reasonably practicable, suitable provision shall be made for preventing such ladders from twisting.

(9) *Lashing of ladders-*

- (a) A fiber rope, or a rope made with strands consisting of wire cords covered with fibre, shall not be used to secure a ladder used for the purpose of the operations.

- (b) A wire rope shall not be used to secure any such ladder unless its ends are ferruled, but this provision shall not apply in the case of an end which is so situated or protected that a person using the ladder is not liable to come into contact with it so as to suffer injury.

(10) *Material for staging.-*

- (a) A sufficient supply of sound and substantial material and appliances shall be available in convenient place or places for the construction of staging.
- (b) All planks and other materials and appliances intended to be used or re-used for staging shall be carefully examined before being taken into use or re-use in any staging. Every examination required by this clause shall be carried out by a person competent for the purpose.

(11) *Staging dry dock altars and shoring sills-*

- (a) All staging and every part thereof shall be of good constructions, of suitable and sound material and of adequate strength for the purpose for which it is used and shall be properly maintained, and every up-right and thwart shall be kept so fixed, secured or placed in position as to prevent so far as is reasonably practicable, accidental displacements.
- (b) All planks forming stages shall be securely fastened to prevent them from slipping unless they extend 45 centimeters or more beyond the inside edge of the thwart or support on which they rest.
- (c) All staging used in connection with the operations shall be inspected perform work in connection from use, and thereafter at regular and frequent intervals, by a responsible person.
- (d) All dry dock altars and shoring sills on or from which persons perform work in connections with the operations shall be sound construction and properly maintained.
- (e) All parts of stages, all parts of footways or passageways constructed of planks, and all parts of dry dock altars or shoring sills, being parts on or from which persons perform work in connection with the operations, shall so far as is reasonably practicable, be kept clear of all substances likely to make foot-hold or hand-hold insecure.

(12) *Upright used for hoisting block-*

- (a) If any upright forming part of staging is used as a fixing for a pulley block for hoisting materials.-
  - (i) It shall be properly housed in the ground or shall otherwise be adequately secured so as to prevent it from rising; or
  - (ii) It shall be suitably protected against damage by the action of the chain or wire or other means of securing the pulley block to the upright.
- (b) No upright forming part of staging shall be used as an anchorage for a load pulley block, unless the upright is not likely to be displaced by such use.

(13) *Support of stage on planks.*- Planks supported on the rungs of ladders shall not be used to supported stages.

(14) *Suspended stages.*-

- (a) Stages suspended by ropes or chains shall be secured as far as possible so as to prevent them from swinging.
- (b) A fibre rope, or a rope made of strands consisting of wire cores covered with fibre, shall not be used for suspending a stage except that fibre ropes may be used in the case of a stage or which the suspension ropes are revved through blocks.
- (c) Chains, ropes, blocks and other gear used for the suspension of stages shall be of sound material, adequate strength and suitable quality, and in good condition.
- (d) Appropriate steps shall be taken to prevent ropes or chains used for supporting a stage from coming into contact with sharp edges of any part of a vessel.

(15) *Boatswains' chairs.*-

- (a) Boatswains' chair and chains, ropes or other gear used for their suspension shall be of sound material, adequate strength and suitable quality and the chains, ropes or other gear shall be securely attached.
- (b) Suitable measures shall be taken to prevent where possible.
  - (i) The spinning of a boatswain's chair;
  - (ii) the tipping of a boatswain's chair and
  - (iii) any occupant falling therefrom.

(16) *Rising stages.* – All planks forming a rising stage at the bow end of a vessel shall be securely fastened to prevent them from slipping.

(17). *Width of staging.* – Without prejudice to the other provisions of these sub-rules, all stages shall be of sufficient width as is reasonable in all the circumstances of the case to secure the safety of the persons working thereon.

(18). *Stages from which a person is liable to fall more than 2 metres or into water.*

- (a) This sub-rule applies to stages from which a person is liable to fall a distance of more than 2 metres or into water in which there is a risk of drowning
- (b) Every stage to which this sub-rule applies –
  - (i) shall so far as is reasonably practicable be closely boarded, planked or plated;
  - (ii) shall be so constructed or placed that a person is not liable to fall as aforesaid through a gap in the staging not being a gap necessary and no large than necessary having regard to the nature of the work being carried on; and
  - (iii) shall be at least 45 centimetres wide.

- (c) Every side of a stage to which this sub-rule applies shall –
  - (i) if it is not a side immediately adjacent to any part of a vessel, be fenced (subject to the provisions of clauses (d) to (g) of this sub-rule) with a guard-rail or guard-rails to a height of at least 1 metre above the stage, which rail or rails shall be so placed as to prevent so far as practicable the fall of persons from the stage or from any raised standing place on the stage; or
  - (ii) if it is a side immediately adjacent to any part of a vessel, be placed as near as practicable to that part having regard to the nature of the work being carried on and to the nature of the structure of the vessel.
- (d) In the case of stages which are suspended by ropes or chains, and which are used solely for painting, the fencing required by sub-clause I) of the preceding clause may be provided by means of taut guard-rope or taut guard-ropes.
- (e) No side of a stage or, as the case may be, no part of the side of a stage need be fenced in pursuance of clause c) I) of this sub-rule in cases where, and as long as, the nature of the work being carried on makes the fencing of that side or, as the case may be, that part impracticable.
- (f) Guard-rails provided in pursuance of clause c) I) of this sub-rule may be removed for the time and to the extent necessary for the access of persons or for the movement of materials, but guard-rails removed for either of these purposes shall be replaced as soon as practicable.
- (g) Where it is not reasonably practicable to comply with the provisions of clause c) I) of this sub-rule, workers shall be provided with suitable safety belts equipped with life lines which are secured with a minimum amount of slack to a fixed structure.

Further precautions against falls of persons, materials and articles -

(19) *Fencing of dry docks.* –

- (a) Fencing shall be provided at or near the edges of a dry dock at ground level, including edges above flights of steps and chutes for materials. The height of such fencing shall be no point be less than 1 metre.
- (b) Such fencing as aforesaid shall be kept in position save when and to the extent to which its absence is necessary (whether or not for the purposes of the operations) for the access of persons, or for movement of materials or vessels or for traffic or working, or for repair, but fencing removed for any of these purposes shall be kept readily available and shall be replaced as soon as practicable.

(20). *Protection of openings.* –

- (a) Every side or edge of an opening in a deck or tank top of a vessel, being a side or edge which may be a source of danger to workers shall, except where and while the opening is securely covered or where the side or edge is protected to a height of not less than 75 centimetres by a coming or other part of the vessel, be provided with fencing to a height of not less than 90 centimetres above the edge or side and such fencing shall be kept in position save when and to the extent to which its absence is necessary (whether or not for purposes of the operations) for the access of persons, or for the movement of materials, or for traffic or working, or for repair, but fencing

removed for any of these purposes shall be kept readily available and shall be replaced as soon as practicable.

- (b) Clause (a) of this sub-rule shall not apply –
  - (i) to that part of an opening in a deck or tank top which is at the head of a stairway or ladder-way intended to be used while the operations are being carried on; or
  - (iii) to parts of a deck or tank top which are intended to be plated, except such parts where the plating has necessarily to be delayed so that the opening may be used for the purpose of the operations.

(21). *Fall or articles from stage.* – Where workers are at work outside a vessel on a stage adjacent to part of the structure of the vessel and other workers are at work directly beneath that stage, the planks of the stage shall be in such a position that no article liable to cause injury to the workers can fall between the planks, and the inside plank of the stage shall be placed as near as practicable to the structure of the vessel having regard to the nature of the work being carried on.

(22). *Boxes for rivets, etc.* –

- (a) Boxes or other suitable receptacles for rivets, nuts, bolts and welding rods shall be provided for the use of workers.
- (b) It shall be the duty of the workers to use, so far as practicable, the boxes or other suitable receptacles so provided.

(23). *Throwing down materials and articles.* –

- (a) Subject to the provisions of clause b) of this sub-rule, parts of staging, tools and other articles and materials shall not be thrown down from a height where they are liable to cause injury to workers, but shall be properly lowered.
- (b) When the work to be done necessarily involves the throwing down from a height of articles or materials, conspicuous notice shall be posted to warn persons from working or passing underneath the place from which articles or materials may fall, or the work shall be done under the direct supervision of a competent person in authority.
- (c) No person shall throw down any articles or materials from a height except in accordance with the requirements of this sub-rule.

(24). *Loose articles or materials.* – So far as practicable, steps shall be taken to minimise the risk arising from loose articles or materials being left lying about in any place from which they may fall on workers or persons passing underneath.

## RAISING AND LOWERING

(25). *Securences of loads.-*

- (a) Loads shall be securely suspended or supported whilst being raised or lowered, and all reasonable precautions shall be taken to prevent danger from slipping or displacement.
- (b) Where by reason of the nature or position of the operations load is liable, whilst being move by a lifting machine or lifting tackle, to come into contact with any object so that the object may become displaces, special measures shall be adopted to prevent the danger so far as is reasonably practicable.

(26). *Support of lifting machines and lifting tackle.-* Every lifting machine and all lifting tackles shall be adequately and suitably supported or suspended having regard to the purpose for which it is used.

(27). *Wire ropes with broken wires.-* No wire rope shall be used if in any length of ten diameters the total number of visible broken wires exceeds five per cent of the total number of wires, or if the rope shows signs of excessive wear or corrosion or other serious defect.

(28). *Splices in wire ropes.-* A thimble or loop splice made in any wire rope shall have at least three tucks with a whole strand of the rope and two tucks with one half of the wires cut out of each strand. All tucks shall be against the lay of the rope.

Provided that this sub-rule shall not operate to prevent the use of another form of splice which can be shown to be as efficient as the form of splice specified I this sub-rule.

(29). *Knotted chains, etc.*

- (a) No chain or wire rope shall be used when there is a knot tied in any part thereof.
- (b) No chain which is shortened or joined to another chain by means of bolts and nuts shall be used;

Provided that this does not exclude the use of a chain bolted or joined to another chain by an approved and properly constructed attachment.

(30) *Precautions against damage to chains and ropes.* Appropriate steps shall be taken to prevent, so far as practicable, the use of chains or ropes for raising or lowering in circumstances in which they are in or liable to come into contact with sharp edges of plant, materials or loads, or with sharp edges of any part of the vessel on which work is being carried out.

(31) *Loads on lifting appliances -* No load shall be left suspended from a lifting appliance other than a self-sustaining, manually operated lifting appliance unless there is a competent person in charge of the appliance while the load is so left.

(32). *Heavy loads,-* Where there is reason to believe that a load being appliance other than appliance weighs more than 20 tonnes its weight shall be ascertained by means of an accurate weighing machine or by the estimation of a person competent for the purpose, and shall be

clearly marked on the load;

Provided that this sub-rule shall not apply to any load lifted or lowered by a crane which has either a fixed or a derricking jib and which is lifted with an approved type of indicator in good working order which-

- (a) indicates clearly to the driver or person operating the crane when the load being carried approaches the safe working load of the crane for the radius of the jib at which the load is carried; and
- (b) gives an efficient sound signal when the load moved is in excess of the safe working load of the crane at that radius.

Precautions against asphyxiation, injurious fumes or explosions.

(33) *Certification for entry into confined spaces likely to contain dangerous fumes.*- A space shall not be certified under section 36(3) (a) of the Act unless.

- (a) effectively steps have been taken to prevent any ingress of dangerous fumes;
- (b) any sludge or other deposit liable to give off dangerous fumes has been removed and the space contains no other material liable to give off dangerous fumes; and
- (c) the space has been adequately ventilated and tested for dangerous fumes and has a supply of air adequate for respiration.

Provided that no account shall be taken for the purposes of clause (b) of this sub-rule of any deposit or other material liable to give off dangerous fumes in significant quantities.

(34). *Precautions against shortage of oxygen.*- No person shall enter or remain in any confined space a vessel, being a confined space in which there is reason to apprehend that the proportion of oxygen in the air is so low as to involve risk of persons being overcome, unless either-

- (a) The space has been and remains adequately ventilated and a responsible person has tested it and certified that it is safe for entry without breathing apparatus; or
- (b) He is wearing a suitable breathing apparatus and a safety belt securely attached to a rope, the free end of which is held by a person standing outside the confined space.

(35). *Rivet fires.*-

- (a) Rivet fires shall not be taken into or used in or remain in any confined space or board or in a vessel unless there is adequate ventilation to prevent the accumulation of fumes.
- (b) No person employed shall move a rivet fire into any confined space on board or in a vessel unless he has been authorised by his employer to move the fire into that space.

(36). *Gas cylinders and acetylene generators.*-

- (a) No cylinder which contains or has contained oxygen or any flammable gas or vapour at a pressure above atmospheric pressure and no acetylene generating plant, shall be installed or placed within 5 meters of any substantial source of heat (including any

boiler or furnace when alight) other than the burner or blowpipe operated from the cylinder or plant.

- (b) No such cylinder and no such plant shall be taken below the weather deck in the case of a vessel undergoing repair, or below the topmost completed deck in the case of a vessel under construction, unless it is installed or placed in a part of the vessel which is adequately ventilated to prevent any dangerous concentration of a gas or fumes.

(37). *Further provision as to acetylene generators*

- (a) The following provision shall be observed as respects any acetylene generating plant:-
  - (i) no such plant shall be installed or placed in any confined space unless effective and suitable provision is made for securing and maintaining the adequate ventilation of that space so as to prevent, so far as practicable, any dangerous accumulation of gas;
  - (ii) any person attending or operating any such plant shall have been fully instructed in its working and a copy of the maker's instruction for that type of plant shall be constantly available for his use;
  - (iii) The charging and cleaning of such plant shall so far as practicable be done during daylight; and
  - (iv) Partly spent calcium carbide shall not be recharged into an acetylene generators.
- (b) No person shall smoke or strike a light or take a naked light or a lamp in or into any acetylene generator house or shed or in or into dangerous proximity to any acetylene generating plant in the open air or on board a vessel:

Provided that this clause shall not apply as respects a generator in the open air or on board a vessel which, since it was last charged, has been thoroughly cleaned and freed from any calcium carbide and acetylene gas.

- (c) A prominent notice prohibiting smoking, naked lights and lamps shall be exhibited on or near every acetylene generating plant whilst it is charged or is being charged or is being cleaned.

(38). *Construction of plant for cutting, welding or heating metal.-*

- (a) Pipes or hoses for the supply of oxygen or any flammable gas or vapour to any apparatus for cutting, welding or heating metal shall be of good construction and sound materials and be properly maintained.
- (b) Such pipes or hoses shall be securely attached to the apparatus and other connections by means of suitable clips or other effective appliances.
- (c) Efficient reducing and regulating valves for reducing the pressure of the gases shall be provided and maintained in connection with all cylinders containing oxygen or any flammable gas or vapour at a pressure above atmospheric pressure while the gases or vapour from such cylinders are being used in any process of cutting, welding, or heating metal.

- (d) Where acetylene gas is used for cutting, welding or heating metal-
  - (i) A properly constructed and efficient back pressure valve and flame arrester shall be provided and maintained in the acetylene supply pipe between each burner or blow-pipe and the acetylene generator, cylinder or container from which it is supplied, and shall be placed as near as practicable to the burner or blow-pipe, except that these requirements shall not apply where an acetylene cylinder serves only one burner or blow-pipe; and
  - (ii) Any hydraulic valve provided in pursuance of the preceding sub-clause shall be the duty of every worker who used the burner or blow-pipe to inspect the hydraulic valve accordingly.
- (e) The operating valves of burners or blow-pipe to which oxygen or any flammable gas or vapour is supplied for the purpose of cutting, welding or heating metal shall be so constructed, or the operating mechanism shall be so protected, that the valves cannot be opened accidentally.

(39). *Precautions after use of apparatus for cutting, welding or heating metal.*

- (a) In the case of apparatus on board a vessel and used for cutting, welding or heating metal with the aid of oxygen or any inflammable gas or vapour supplied at a pressure above atmospheric pressure, the precautions specified in the following clauses of this sub-rule shall be taken when such use ceases for the day or for a substantial period and the apparatus is to be left on board, but need not be taken when such use is discontinued merely during short interruption of works. The requirements in clauses (c) and (d) of this sub-rule shall not apply during a meal interval provided that a responsible person is placed in charge of the plant and equipment referred to therein.
- (b) Supply valves of cylinders, generators and gas mains shall be securely closed and the valve key shall be kept in the custody of a responsible person.
- (c) Movable pipes or hoses used for conveying oxygen or inflammable gas or vapour and the welding and cutting torches shall, in the case of a vessel undergoing construction, be brought to the topmost completed deck, or in the case of a vessel undergoing repair, to weather deck or in either case to some other place of safety which is adequately ventilated to prevent any dangerous concentration of gas or fumes:

Provided that where, owing to the nature of the work, it is impracticable to comply with the foregoing requirements of this clause, the pipes or hoses shall be disconnected from cylinders, generators or gas main, as the case may be.

- (d) When cylinders or acetylene generating plant have been taken below deck as permitted by clause (b) of this sub-rule (36) such cylinders or acetylene generating plant shall be brought to a weather deck or, in the case of a vessel undergoing construction, to the topmost completed deck.

(40). *Naked lights and hot work oil-carrying vessels.-*

- (a) Subject to the provisions of clause (b) of this sub-rule and to the provision of sub-rule (48) and without prejudice to the provisions of sub-rules (46) and (47), no naked light, fire or lamp (other than a safety lamp of a type approved for the purpose of this

sub-rule)-

- (i) shall be permitted to be applied to, or to be in, or any hot work permitted to be carried out in any part of tanker, a naked light certificate has been obtained and is in force in respect of those parts of the tanker for which, in the opinion of a competent analyst, a naked light certificate is necessary.

Provided that a naked light, fire or lamp of a kind specified in writing by a competent analyst may be applied to, or any hot work of a type specified by him carried on, any part of the tanker so specified;

(ii) shall be permitted-

- (aa) to be in any oil-tank on board or in a vessel in which oil-tank the oil last carried was oil having a flash point of less than 23 degrees centigrade or was liquid methane, liquid propane or liquid butane, nor any hot work permitted to be carried out in any such oil tank or vessel, unless a naked light certificate has previously been obtained on the same day and is in force in respect of that oil-tank and of any oil-tank, compartment or space adjacent thereto;
- (bb) to be applied to the outer surface of any oil-tank on board or in a vessel in which oil-tank the oil last carried was such oil as aforesaid nor any work of such a nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapours permitted to be carried out on the outer surface of such oil-tank or vessel, unless a naked light certificate has previously been obtained on the same day and is in force in respect of that oil-tank;
- (cc) to be applied to the outer surface of, or to be in, any compartment or space adjacent to an oil-tank on board or in a vessel in which oil-tank the oil last carried was such oil as aforesaid, nor any hot work permitted to be carried out in such compartment or space as aforesaid, nor any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapour permitted to be carried out on the outer surface of such compartment or space, unless a naked light certificate has previously been obtained on the same day and is in force in respect of that compartment or space:

Provided that where in any such case referred to in paragraphs (aa), (bb), or (cc) of this sub-clause a competent analyst has certified that daily naked light certificates are unnecessary or are necessary only to a specified extend, such a daily certificate need not be obtained or, as the case may be, need only be obtained to the specified extend;

- (iii) shall be permitted to be applied to the outer surface of, or to be in, any oil-tank on board or in a vessel nor any hot work permitted to be carried out in any such oil-tank or vessel, nor any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapours, permitted to be carried out on the outer surface of the oil-tank or vessel, unless, since oil was last carried in that oil-tank, a naked light certificate has been obtained and is in force in respect of that oil-tank;
- (iv) shall be permitted to be applied to the outer surface of, or to be in, any compartment or space adjacent to an oil-tank on board or in a vessel nor any

work of such nature which is likely to produce sufficient heat capable to igniting inflammable gases or vapours, permitted to be carried out on the outer surface of any such compartment or space, unless, since oil was last carried as cargo in that oil-tank, a naked light certificate has been obtained and is in force in respect of that compartment or space.

- (b) Notwithstanding anything in clause (a) of this sub-rule, heated rivets may be permitted in force place without naked light certificate being in force in respect of that place if expressly so authorised by a competent analyst who certifies that after adequately and suitable testing, he is satisfied having regard to all the circumstances of the case, including the likelihood or otherwise of the atmosphere becoming inflammable, that the place is sufficiently free from inflammable vapour; but such heated rivets shall, where practicable, be passed through tubes.
- (c) No person shall introduce, have or apply naked light, fire or lamp (other than safety lamp of a type approved for the purpose of this sub-rule) into, in or to any place where they are prohibited by this sub-rule.
- (d) No person shall carry out hot work or any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapours, in any place or any surface where they are prohibited by this sub-rule.
- (e) In this sub-rule the expression 'competent analyst' means an analyst who is competent to give a naked light certificate.

(41) *Entering oil-tanks.*

- (a) No person (other than an analyst entering with a view to issuing a certificate of entry) shall, unless he is wearing a breathing apparatus of a type approved for the purpose of this sub-rule, enter or remain in an oil-tank on board or in a vessel unless, since the oil-tank last contained oil, a certificate of entry has been obtained and is in force in respect of the tank.
- (b) Without prejudice to clause (a) of this sub-rule, no person (other than an analyst entering as aforesaid) shall be allowed or required to enter or remain in oil-tank on board or in a vessel in which oil-tank the oil last carried was oil having a flash point of less than 23 centigrade unless, since the oil-tank last contained oil, an analyst has certified that the atmosphere is sufficiently free from flammable mixture.
- (c) The provisions of this sub-rule are without prejudice to the requirements of sub-rule (34).

(42) *Duration of certificates.* – Any naked light certificate or certificate of entry may be issued subject to a condition that it shall not remain in force after a time specified in the certificate.

(43) *Posting of certificates.* – Every occupier for whom a naked light certificate or a certificate of entry is obtained shall ensure that the certificate or a duplicate thereof is posted as soon as may be and remains posted in a position where it may be conveniently read by all persons concerned.

(44) *Maintaining safe atmosphere.*

- (a) When conditions in an oil-tank in respect of which a naked light certificate has been issued, are such that there is a possibility of oil vapour being released from residues or other sources, test shall be carried out by a competent analyst at such intervals as may be required so as to ensure that the conditions in the tank are maintained safe.
- (b) Whenever hot work is carried on a naked light, fire or lamp is allowed to be, on the weather deck over spaces, in respect of which a naked light certificate has not been issued, all covers of manholes and opening on deck and all valves (except those which are connected to high vent pipes) connecting the weather deck with the said spaces, shall be closed.
- (c) A record of all the tests carried out for the purpose of sub-rules (34), (40) and (41) shall be maintained in a register which should furnish the date, time, location and results of the tests.

(45). *Cleaning of oil-tanks -*

- (a) Subject to the provisions of sub-rule (48), before a test for inflammable vapour is carried out with a view to the issue of a naked light certificate for the purposes of sub-rule (40) in respect of an oil-tank on board or in a vessel, that oil-tank shall, since oil was last introduced into the tank, be cleaned and ventilated in accordance with clause(b) of this sub-rule.
- (b) The said cleaning and ventilation shall be carried out by the following methods:-
  - (i) the oil-tank shall be treated in such manner and for such period as will ensure the vaporization of all volatile oil;
  - (ii) all residual oil and any sludge or other deposit in the oil-tank shall be removed therefrom;
  - (iii) after the oil-tank has been so cleaned-
    - (aa) all covers of manholes and other opening therein shall be removed and it shall be thoroughly ventilated by mechanical or other efficient means with a view to remove all oil vapour; and then
    - (bb) the interior surfaces, if any deposit remains thereon, shall be washed or scraped down.

(46). *Invalidation of certificates.*

- (a) If during the course of work in, or to the outer surface of, any part of a tanker or aircraft carrier, any pipe or tank joint is opened or broken or any other event occurs so that there is a risk of oil- vapour entering or arising in that part of the tanker or aircraft carrier, that work shall be suspended and thereafter any certificate of entry previously issued in respect of any oil-tank in that part and any naked light certificate previously issued in respect of that part shall be no longer in force.
- (b) If (in the case of a vessel other than a tanker or aircraft carrier) during the course of work in any oil-tank or in any compartment or space adjacent thereto, any pipe or tank joint is opened or broken or any other event occurs so that there is a risk of oil

vapour entering or arising in the oil-tank or in any compartment or space adjacent thereto that work shall be suspended and thereafter any certificate of entry previously issued in respect of the oil-tank and any naked light certificate previously issued in respect of the oil-tank or any compartment or space adjacent thereto shall be no longer in force.

(47) *Provisions as to work in other compartments or spaces.*

- (a) without prejudice to the other provisions of this rule, if the presence of oil in such quality and in such quantity and in such position as to be likely to give rise to fire or explosion is detected in any part of a vessel, being a part to which this sub-rule applies and in which repairs of the following kind are to be or are being undertaken, that is to say, repairs involving the use of a naked light, fire or lamp {other than a safety lamp of a type approved for the purposes of sub-rule (40)], or involving hot work, such repairs shall not be started or continued until a naked light certificate has been issued or, as the case may be, reissued in respect of that part of the vessel.
- (b) This sub-rule shall apply to bilges, shaft tunnels, pump rooms and to compartments and spaces other than those to which clause (a) (iv) of sub-rule (40) applies.

(48) *Exemptions.*- If the Chief Inspector is satisfied, by a reasons, shall be the nature of the work and the circumstances in which it is carried out, that any provisions of sub-rules (33) to (45) or part thereof can be suspended or relaxed without danger to the health or safety of any person, he may grant the suspension or relaxation in writing specifying such conditions as he may consider fit. Any such suspension or relaxation may be revoked at any time.

#### **PRECAUTIONS IN USE OF ELECTRICAL ENERGY.**

(49) *Earthing.*- Electrical energy other than generated by an independent generating unit on board shall not be taken for use, or used in, or in connection with any of the operations unless the body of the ship is securely earthed in such a manner as to ensure an immediate and safe discharge of energy to the earth. A ship or vessel shall not be considered as securely earthed for the purpose of this sub-rule only on account of its being partly submerged in water.

(50) *Arc welding.*-

- (a) Electric arc welding shall not be carried on in connection with any of the operations unless separate and fully insulated welding return conductors as the case may be, of adequate electrical capacity are provided for return of the current to the transformer or generator of the welding set.
- (b) The return end of the source of the welding current shall not be earthed.
- (c) All work on which welding is carried on shall be securely earthed independently to an earth electrode by means of conductor or conductors as the case may be, of adequate capacity, unless all such work are conducted to any structure of the shop or vessel in such a manner as to ensure adequate connection to earth as aforesaid.

(51). *Cutting of energy in certain cases.*- Electrical energy shall be cut off from all portable electric tools and manual electrode holders within any tank, compartment or space referred to in sub-rules (340 and (40) or in any other confined space during all times when such tools or holders are not in operations:

Provided that for determining whether any such portable electric tool or elector holder is not operation, no account shall be taken of brief interruptions of work occurring during normal working:

Provided further that energy may not be cut off from any such equipments of a responsible person is left in charge of it in such tank, compartment or space concerned.

Provided further that cutting of all electrical energy by operation of any switch or control provided on the portable tool or electrodes holder itself should not be taken as fulfilling the requirements of this sub-rule.

### **MISCELLANEOUS SAFETY PROVISIONS**

(52). *Lighting.*- All parts of a vessel and all other places where the operations are being carried on, and all approaches shall be such parts and no places to which a worker may be required to proceed in the course of his employment, shall be sufficiently and suitably lighted. In providing such lighting, due regards shall be given to avoidance of glare and formation of shadows, to the safety of the vessel and cargo, of the navigation of other vessels, and to any local statutory requirements as to the lighting of the harbour or dock.

(53). *Work in boilers, etc.*

- (a) No work shall be permitted in any boiler, boiler-furnace or boiler-flue until it has been sufficiently cooled to make work conditions safe for the workers.
- (b) Before any worker enters any steam boiler which consist of a range of two or more steam boiler.
  - (i) all inlets through which steam or hot water might otherwise enter the boiler from any other part of the range shall be disconnected from that part; or.
  - (ii) all valves or taps controlling such entry shall be closed and securely locked.
- (c) While workers remain in any steam boiler to which clause (b) of this sub-rule applied, all such inlets as are referred to in that clause shall remain disconnected or all such valves or taps as are herein referred to shall remain closed and securely locked.
- (d) No worker shall be allowed or required to enter or remain in, and no person shall enter or remain, in any steam boiler to which clause (b) of this sub-rule applies unless the provisions of that clause are being complied with.

(54). *Hatch beams.*- The hatch beams of any hatch in use for the operations shall, if not removed be adequately secured to prevent their displacement.

(55) *Jumped-up bolts.*- Bolts which have been jumped-up and re-screw securing plates on the sides of vessels, and no worker shall use such belts for this purpose.

(56). *Work in or on all boats:-*

- (a) Before workers are permitted to work in or on any life boat, either stowed or in suspended position, precautions shall be taken to prevent the boat from falling due to accidental tripping of the releasing gear or movement of the devits, and capsizing of the boat if in checks.
- (b) Workers shall not be permitted to remain in life boats while the life boats are being hoisted into final stowed position.

### **PROTECTIVE WEAR**

(57). *Hand protection.-* Adequate protection for the hands shall be available for all workers when using cutting or welding apparatus to which oxygen or any inflammable gas or vapour is supplied at a pressure greater than atmospheric pressure or when engaged in machine caulking or machine riveting or in transporting or stacking plates or in handling plates at machines.

(58). *Protection in connection with cutting or welding*

- (a) Suitable goggles fitted with tinted eye-pieces shall be provided and maintained for all persons employed when using cutting or welding apparatus to which oxygen or any flammable gas or vapour is supplied at a pressure above atmospheric pressure.
- (b) There shall be provided and maintained for the use of all persons employed when engaged in the process of electric welding-
  - (i) suitable helmets or suitable head-shields or suitable hand shields to protect the eyes and face from hot metal and from rays likely to be injurious and
  - (ii) suitable gauntlets to protect the hands and fore-arms from hot metal and from rays likely to be injurious.
- (c) When electric welding is in progress at any place and persons other than those engaged in that process are employed in a position where the rays process are employed in a position where the rays are likely to be injurious to their eyes, screens, shall where practicable, be provided at that place for the protection of those persons. Where it is not practicable to provide effective protection of these persons by screening, suitable goggles shall be provided for their use.

(59). *Eye protection for other processes.-* Suitable goggles or effective screens shall be provided to protect the eyes of all workers in any of the following processes:

- (a) the cutting out or cutting off of cold rivets or bolts from boilers or other plant or from ships;
- (b) the chipping , scaling or scurfing of boiler or ship's plates;
- (d) drilling by means of portable machine tools and dry grinding of metals;

(60). *Head protection.*- When workers are employed in areas where there is danger of falling objects they shall be provided with suitable safety helmets.

(61). *Safety belts and life lines.*-

- (a) Whenever any workers is engaged on work at a place from which he is liable to fall more than 2 meters, he shall be provided with safety belts equipped with life lines which are secured with a minimum of slacks, to a fixed structure unless any other effective means such as provisions of guard rails or ropes are taken to prevent his falling.
- (b) All safety belts and life lines shall be examined at frequent intervals by a competent person to ensure that no belt or life line which is not in good condition is used.

### **HEALTH AND WELFARE**

(62). *Prohibition of employment of young persons in certain processes.*- No young person shall be employed in-

- (a) the application of asbestos by means of a spray;
- (b) the breaking down for removal of asbestos lagging;
- (c) the cleaning of sacks or other containers which have contained asbestos;
- (d) the cutting of material containing asbestos by means of portable power driven saws;  
or
- (e) the scaling, scurfing or cleaning of boilers, combustion chambers or smoke boxes, where his work exposes him to dust of such a character and to such an extent as to be likely to be injurious or offensive to persons employed in such work.

(63). *Lead processes.*-

- (a) Lead paint shall not be applied in the form of a spray in the interior painting of any part of a ship or vessel.
- (b) Wherever lead sheathing work is carried on for making cold storage chambers in the ships, efficient exhaust draughts with portable extractors should be provided to remove the lead fumes from the confined spaces.

(64). *Stretchers, ambulances and ambulance rooms, etc.,-*

- (a) In every shipyard there shall be provided and kept readily available.
  - (i) a sufficient number of suitably constructed sling stretchers or other similar appliances for raising injured persons;
  - (ii) a sufficient number of carrying or wheel stretchers; and

- (iii) a sufficient supply of suitable reviving apparatus and oxygen, and the stretchers, appliances and apparatus so provided shall be properly maintained.
- b) In every shipyard there shall always be readily available during working hours a responsible person or responsible persons whose duty it is to summon an ambulance or other means of transport if needed in cases of accident or illness. Legible copies of a notice indicating that person or, as the case may be, those persons shall be affixed in prominent positions in every shipyard.
- c) In every shipyard other than a dry dock available for hire-
  - (i) in which the number of persons employed normally exceeds five hundreds; or
  - (ii) in which the number of persons employed normally exceeds one hundred and which is more than ten miles from a hospital;

there shall be provided and maintained in good order and in clean conditions a properly constructed ambulance room containing at least the equipments prescribed in the rules framed under section 45 if the Act. The room shall be used only for the purpose of treatment and rest and shall be in the charge of a suitably qualified person who shall always be readily available during working hours, and record shall be kept of all cases of accident or sickness treated in the room.

### **TRAINING AND SUPERVISION**

(65). *Young persons-*

- (a) No young person shall unless employed in a shipyard or shipyards for at least six months, be employed in connection with the operations in a shipyard on a stage from which, or in any part of a ship where he is liable to fall a distance of more than 2 meters or, into water in which there is a risk of drowning.
- (b) Any persons under the age of sixteen shall, when employed in the operations in shipyard be placed under the charge of an experienced workman.

(66). *Safety supervision.-* In the case of every shipyard other than a dry available for hire, being a shipyard where the number of workers regularly or from time to time exceeds five hundred, a person experienced in the work of such yards shall be appointed and employed exclusively to exercise general supervision of the observance of these rules and to promote the safe conduct of the work generally.

**84. Safety measures in factories where equipment or pipelines containing inflammable materials are operated.-** Where work of opening any equipment of pipeline containing inflammable liquids or gases is to be carried out in any factory, the following provisions shall be complied with, namely.

I. The system of work permits shall be introduced and unless the equipment or the pipeline is certified to be free of inflammable gas or liquid, no person shall be allowed to enter or open the same.

II. The work or opening such equipment or pipeline shall not be commenced unless the following operations are carried out and checked by the Supervisor in-charge of the Process Department of the Factory:-

- (i) *Blanking operations.*- The equipment or pipeline to be opened for repairs or maintenance shall be effectively blanked so as to ensure that no inflammable gas or liquid can enter the same under any circumstances during the operations of repair and maintenance. The Supervisor of the Process Department shall check personally of these operations and shall certify accordingly.
- (ii) Flushing operation.- The Supervisor of the Process Department shall carry out the steaming or flushing out with water of the equipment or pipeline and shall certify to the effect.

III. (i) *Opening of the equipment* .- The supervisor of the Engineering Department of the factory in-charge of the work of opening of such equipment or pipeline or getting clearance from the Supervisor incharge of the Process Department, shall satisfy himself that the above operation are complete and shall sign the work permits issued by the Supervisor of the Process Department.

- (ii) It shall be the joint responsibility of the Supervisor of the Process department and the Supervisor of the Engineering Department to check and ensure that hot lines, if any in the vicinity of such works are properly screened, in accordance with the safety instruction of the a factory management. The work permit shall have as specific entry for this operations which shall be signed by both the Supervisor.

IV. No part of the running equipment or pipeline shall be opened unless a gas test is conducted by a responsible person to ensure that the equipment or pipeline is safe for opening.

V. No workers whose clothes have been contaminated with inflammable of random shall be allowed to work where any such running equipment or pipeline is being opened.

VI. The Safety Officer or any officer authorised by him, shall have system of random checking on the work permits issued and he shall report any serious deficiencies to the Works Manager directly.

VII. All drains of such equipments or pipeline shall be laid into the drains to prevent any splashing of the training inflammable liquids or gases.

VIII. Before commencing the opening operation, it shall be ensured that specific person trained in fire-fighting operations, is kept available and the presence shall be ensured throughout the operation of the opening of equipment.

**85. Safety measures in gas works.**- In respect of any factory where inflammable gas is produced by carbonization of coal, oil or any other similar substance, the following provisions shall be complied with, namely-

- (i) No pipe, valve or any cover of any equipment into which gas is normally to flow shall be opened unless it is ensured that the equipment is no more supplied with any inflammable or explosive gas at a pressure greater than atmospheric pressure.
- (ii) Before undertaking repairs of every sort to any pipe, valve or any other

equipment connected with any part in the plant or machinery or any gas works (not being a gas-holder) it shall be ensured that the gas under pressure does not reach the point where such pipe, valve or equipments is being opened by the removal of any bolts and nuts or by cutting either by mechanical means or by application of heat and that such pipe, valve or equipment is so isolated from the gas-holder or any other equipment generating gas that no gas under the pressure reaches the point of repair.

- (iii) Before loosening the bolts and nuts or before undertaking the cutting of any pipe, valve or equipment in any gas works, a definite test shall be carried out by a competent person that no gas under pressure is fed to the point of repair. Details of the test carried out shall be mentioned in a certificate which shall be signed by the competent person. A copy of such certificate shall be displayed prominently near the place of repair and shall be made available on demand to every worked employed in connection with such repairs for his perusal.
- (iv) Every worked employed in connection with such repairs and working near any pipe, valve or other equipment while it is being opened shall be supplied with a mask and a respirator fed by air fresh from a point away from the point of repair. It shall be ensured that the worker shall wear the respirator while working near the point of repair.
- (v) Electrical wiring or any electrical equipment (not being electrical are welding equipment) used near the point of repair shall be so arranged that there are no trailing cables along the floor. All electrical equipment shall be of flame-proof type:

Provided that the provisions of this rule shall not apply to mains and services, plant or machinery installed in the open air subject to the following conditions :-

- (a) The main or service shall be situated in the open air, and it shall contain only the following gases, separately or mixed at a pressure greater than atmospheric pressure, namely, town gas, coke-oven gas, producer gas, blast furnace gas or gases other air, used in their manufacture;
- (b) The main or service shall not contain acetylene or any gas or mixed of gases to which acetylene has been added intentionally;
- (c) The operation shall be carried out by an experienced person or persons and at least two persons (including those carrying out the operations) experienced in work on gas mains and over 18 years of age shall be present during the operation;
- (d) The site of the operation shall be free from any inflammable or explosive gas or vapour;
- (e) Where acetylene gas is used as a source of heat in connection with an operation, it shall be compressed and contained in a porous substance in a cylinder; and
- (f) Prior to the application of any flame to the gas main or service, this shall be pierced or drilled and the escaping gas ignited.

*Explanation* : (1) It shall not be considered an effective measure to stop the gas under pressure from reaching the point of repair if only an inflated bladder is used as the obstruction between the source of gas under pressure and the point of repair:

Provided that where gas valves cannot be provided, it shall be considered an effective measure to stop the gas pressure from reaching the point of repairs if inflated bags alone are inserted against gas pressures not in excess of those indicated below:

Diameter (in) of gas main	Pressure in inches of water gauge
Upto and including 4	10
5 to 10	8
11 to 17	6
18 to 24	5
Over 24	3

and a competent person is kept constantly during the operation to watch and control the pressures within the limits specified as above and that

Such bags must be tested on site for soundness and at least two spare bags are made available on site.

(2) The competent person for the purpose of this rule shall be the Chief Engineer of the factory or a person certified by the Chief Engineer in writing to be the competent person.

**86. Fragile Roofs – Provision of Crawling Boards, etc.** – In any factory, no person shall be required to stand or pass over or work on or near any roof or ceiling covered with fragile material like A. C. Sheets or similar material through which he is liable to fall, in case it breaks or gives way to a distance of more than metres unless –

- (a) suitable and sufficient ladders, duck ladders or crawling boards, which shall be securely supported, are provided and used; and
- (b) a permit to work on the fragile roof is issued to him each time he is required to work thereon by a responsible person of the factory concerned.

*Explanation* : Fragile material means sheets made of asbestos cement or made from similar materials such as Perspex, polyester or other types of plastic fibres.

**87. Special Safety Precautions for certain highly hazardous chemical process.** – In respect of any factory engaged in carrying out any hazardous chemical processes or such parts of any processes as are specified in the Schedule annexed hereto the following provisions shall be complied with viz. :-

(1) *Process Hazards.* – Before commencing any large scale experimental works or any new manufacture, all possible steps shall be taken to ascertain definitely all the hazards involved both from the actual operations and also from the point of view of the chemical reactions. The properties of the raw materials used, the final products to be made and any byproducts arising during manufacture shall be carefully studied and adequate and suitable provisions shall be made in advance for dealing with any hazards including effects on workers which may be inherent in the process or which may arise during the process of manufacture.

- (b) The plant, machinery or equipment concerned with the hazardous process shall be in-charges of such operators only who have been trained and made thoroughly conversant to be fit persons to be in-charge thereof and no other persons shall be allowed to operate the plant, machinery or equipment. The operators shall be regular employees of the occupier and shall in no case be persons who are employed as contract workers.
- (c) The work of the operators shall be supervised on an overall basis by at least one competent person, who for the purpose of this sub-rule shall at least be a graduate in Chemical Engineering or Chemical Technology with specialised knowledge in respect of the processes given in the schedule:

Provided that the Chief Inspector of Factories may accept a graduate in chemistry having adequate knowledge of the process given in the Schedule and also adequate experience and training or any other qualifications, if in his opinion they are equipment to the qualifications aforesaid.

(2) *Emergency instructions.*- Simple and special instructions shall be framed to ensure that effective measures will be carried out in cases of emergency, to deal with possible escapes of inflammable explosive, toxic or deleterious gases, vapours, liquids, or dust. These instructions shall be in the language be displayed in bold letters at prominent places in the different sections trained and fully instructed in the prompt action to be taken in such emergencies and also in the general hazards encountered in this process.

(3) *Fire and explosion risks.*-In any part of the factory where there is a danger due to fire or explosion from inflammable gas, vapour or dust.-

- (i) No internal combustion engine and no electric motor or other electrical equipment or instruments capable of generating sparks or otherwise causing combustion shall be installed or used in a building engaged in the processes. All electrical fitting shall be of suitable flame-proof construction.
- (ii) All pipes carrying hot exhaust or chemicals shall be installed outside the plant building and where this is not possible, these pipes including the flanged portion shall be effectively large.
- (iii) Where an inflammable atmosphere is likely to occur the soles of footwear worn but workers shall have no metal on them and the wheels of trucks or conveyors shall be constructed of non-sparking materials. Adequate precaution shall be taken on prevent the ignition of explosive or inflammable atmosphere by sparks emitted from locomotives or other vehicles operating in the vicinity.
- (iv) Portable electric hand lamps shall not be used unless of an intrinsically safe type and all portable electric tools and appliances connected by flexible wires shall not be used, unless these are of suitable flame-proof construction.
- (v) No electric arc lamp or naked light fixed or portable, shall be used an no person shall have in his possession any match or any apparatus of any type for producing a naked light or spark and all incandescent electric lights shall be in double airtight covers.
- (vi) Prominent notices in the languages understood by the majority of the workers and legible by day and by night, prohibiting smoking the use of naked lights and the carrying of matched or any apparatus for producing a naked light or spark shall be affixed at the entrance of every room or place where there is the

risk of fire or explosion from inflammable liquid gas, vapour or dust. In the case of illiterate workers, the contents of the notices shall be fully and carefully explained to them when they commence work in the factory for the first time and again when they have completed one week of service.

- (vii) A sufficient supply of spades, scrapers and pails made from suitable non-sparking material shall be provided for the use of persons employed in cleaning out and or removing residue from any chamber, still, tank or other vessels of material of any inflammable or explosive nature.
- (viii) All machinery and plant, particularly pipe lines, belt-drives stirrer on which static electricity is likely to accumulate shall be effectively earthed. Receptacles for inflammable liquids shall have metallic connections to earthed supply tanks to prevent sparking due to static charge build up.

(4) *Additional special precautions.-*

- (i) The heating of the process of required, shall not be carried out by immersion or other types of heaters deriving energy from electricity.
- (ii) The steam heating coils places in the lower part of the vessel shall never be kept uncovered or allowed to be heated dry. A substantial amount of the liquid shall be ensured in the vessel after each operation to prevent them from being dry:

Provided that in case of using vessels filled with high melting products, the steam shall be stopped disconnected to the heating coils, before draining process is started to ensure that the heating coils are free of steam before they are uncovered.

- (iii) Steam shall be supplied through a pressure reducing valve and safety valve correctly set to ensure that the critical temperature of the process is not exceeded.
- (iv) A suitable rupture disc shall be provided on the vessel in addition to the usual spring-loaded safety valve. The pipe duct leading away from the rupture disc shall be taken out of the workroom to minimize resistance at the time of blowing and to avoid any chance of a secondary vapour/ air explosion.
- (v) The vent line of the vessel shall carry a flame arrestor.
- (vi) Breaking of vaccum, if the process is done under vaccum, on account of consideration of special hazards inherent in the process, shall be done only with nitrogen, other suitable inert gas or steam. Compressed air connection to the manifolds of the vessel equipment shall be avoided.
- (vii) There shall be an automatic cut-off device of steam supply or other heating devices as well as of further feed to the vessel set to operate, no sooner the critical temperature is reached, beyond which the reaction, of any, in the vessels is likely to get out of control or reach run-away stage.
- (viii) There shall be arrangement of such a nature that it would be possible to introduce quickly, preferably chilled water or at least ordinary cool water circulation in the steam or other heating coils, no sooner the heating element is cut-off or separate coil or jackets for this purpose shall be provided for the vessel
- (ix) An alarm system shall be provided linked to the pressure indicator of the vessel,

so that automatically an audible warning will be given as soon as the pressure exceeds the present safe limit.

- (x) There shall be provided an automatic arrangement of such a nature that if the mechanical agitation, where so provided, fails on account of failure of motive powers or due to broken shaft, broken blades, falling off of blades or such other contingencies, the supply of steam or other heating devices as well as further feed of material would stop automatically.

(5) *Exemptions.*- If the Chief Inspector of Factories is satisfied in respect of any factory or any process that owing to the special conditions or special methods of work adopted or by reason of the infrequency of the process or for other reasons, all or any of the requirements of this rule are not necessary for the protection of persons employed in any factory or any process, he may by order in writing (which he may in his discretion revoke at any time) exempt such factory or such process from all or any of the provisions of this rule, subject to such condition as he may by such order prescribe to such condition as he may by such order prescribe and he may, in his discretion add, subtract or modify such conditions as deemed fit by him at any time.

## SCHEDULE

- (1) Nitro or Amino processes means the manufacture of nitro or amino derivative of Phenol Toluene and of Benzene or its Comologus and the making of explosives with the aid of any of these substances.
- (2) Halogenation process means the addition or substitution reaction with a wide variety of:-
  - (a) Chlorination agents and systems such as Chlorine gas, Hydrochloric Acid, Sodium/ Hypochloride, Phosgene, Thionyl Chloride (SOCl<sub>2</sub>) Sulphonyl Chloride, (SO<sub>2</sub>/Cl<sub>2</sub>) Phosphorous and such others.
  - (b) Fluorination agent such as Fluorine.
  - (c) Bromination agents such as a Bromine.
  - (d) Iodination agents such as Iodine, in liquid or gas phases.
- (3) Aromatization and Isomerization process.

**88. Reaction vessels and kettles.**- (1) This rule applies to reaction vessels and kettles, hereinafter referred to as reaction vessels, which normally work at a pressure not above the atmospheric pressure but in which there is likelihood of pressure being created above the atmospheric pressure due to reaction getting out of control or any other circumstances.

(2) In the event of the vessel being heated by electrical means, a suitable thermostatic control device shall be provided to prevent the temperature exceeding the safe limit.

(3) Where steam is used for heating purposes in a reaction vessels, it shall be supplied through a suitable pressure reducing valve or any other suitable automatic device to prevent the maximum permissible steam pressure being exceeded, unless the pressure of the steam in the supply line itself cannot exceed the said maximum permissible pressure.

(4) A suitable safety valve or rupture disc of adequate size and capacity shall be provided to

effectively prevent the pressure being built up in the reaction vessel beyond the safe limit. Effective arrangements shall be made to ensure that the released gases, fumes, vapours, liquids or dusts, as the case may be, are led away and disposed off through suitable pipes without causing any hazard. Where inflammable gases or vapours are likely to be vented out from the vessel, the discharge end shall be provided with a flame arrestor.

(5) Every reaction vessel shall be provided with a pressure gauge the appropriate range.

(6) In addition to the devices as mentioned in the foregoing provisions, means be provided for automatically stopping the feed into the vessel as soon as process conditions deviate from the normal limits to an extent which can be considered as dangerous.

(7) Wherever necessary, an effective system for cooling, flooding or blanketing shall be provided, for the purpose of controlling the reaction and process conditions within the safe limits of temperature and pressure.

(8) An automatic auditory and visual warning device shall be provided for clear warning whenever process conditions exceed the present limits. This device, wherever possible, shall be integrated with automatic process correction system.

(9) A notice pointing out the possible circumstances in which pressures above atmospheric pressure may be built up in the reaction vessel, the dangers involved and the precautions to be taken by the operators shall be displayed at a conspicuous place near the vessel.

#### **89. Examination of eye sight of certain workers.-**

1) No person shall be employed to operate a crane, locomotive or fork-lift truck, or to give signals to a crane or locomotive operator unless his eye sight and colour vision has been examined and declared fit by a qualified ophthalmologist to work whether with or without the use of corrective glasses.

(2) The eye sight and colour vision of the person employed as referred to in sub-rule (1) shall be examined at least once in every 6 months beyond that age.

(3) Any fee payable for an examination of a person under this sub-rule shall be paid by the occupier and shall not be recoverable from that person.

(4) The record of examination or re-examination carried out as required under sub-rule (1) shall be maintained in Form No. 16.

#### **Rules prescribed under sections 41 and 41-G**

#### **90 Safety Committee.-** (1) In every factory-

- (a) wherein 100 or more workers are ordinarily employed; or
- (b) which carries on any process or operations declared to be dangerous under section 87 of the Act; or
- (c) which carries on 'hazardous processes' as defined under section 2 (cb) of the Act;

(2) The representative of the management on the safety Committee shall include;

- (a) A senior official, who by his position in the organisation can contribute effectively to the functioning of the Committee, shall be the Chairman,

- (b) A Safety Office and a Factory Medical Officer, wherever available and the Safety Officer in such a case shall be the Secretary of the Committee.
  - (c) A representative each from the production, maintenance and purchase departments.
- (3) The workers' representatives on this Committee shall be elected by the workers.
- (4) The Safety Committee shall consist of equal number of representatives of the management and the employees, and the minimum number of representatives shall be six.
- (5) The tenure of the Committee shall be two years.
- (6) Safety Committee shall meet as often as necessary but at least once in every month. The minutes of the meeting shall be recorded and produced to the Inspector on demand.
- (7) Safety Committee shall have the right to be adequately and suitably informed of-
- (a) potential safety and health hazards to which the workers may be exposed at work place.
  - (b) Data on accidents as well as data resulting from surveillance of the working environment and of the health of workers exposed to hazardous substances so far as the factory is concerned, provided that the Committee undertakes to use the data on a confidential basis and solely to provide guidance and advice on measures to improve the working environment and the health and safety of the workers.
- (8) Functions and duties of the Safety Committee shall include.
- (a) Assisting and co-operating with the management in achieving the aims and objectives outlined in the 'Health and Safety Policy of the occupier.
  - (b) Dealing with all matters concerning health, safety and environment and to arrive at practicable solutions to problem encountered.
  - (c) Creating safety awareness amongst all workers.
  - (d) Undertaking educational training promotional activities.
  - (e) Discussion on reports of safety environmental and occupational health surveys, safety audits, risk assessment, emergency and disaster management plans and implementation of the recommendations made in the reports.
  - (f) Carrying out health and safety surveys and identifying causes of accidents.
  - (g) Looking into any complaint made on the likelihood of an imminent danger to the safety and health of the workers, and suggesting corrective measures; and
  - (h) Reviewing the implementation of the recommendation made by it.
- (9) Where owing to the size of the factory, or any other reasons, the functions referred to in sub-rule (8) cannot be effectively carried out by the Safety Committee, it may establish sub-committees as may be required to assist it.
- (10) The Provisions of sub-rules (3), (4), (5), (6), (7) and (8) shall apply to the sub-committees also whenever such committees are set up."

## **Rules prescribed under Section 41-A (I) and Section 112**

**90A- Site Appraisal Committee** .- (1) Constitution – The following provisions shall govern the functioning of the Site Appraisal Committee (hereinafter be referred to as the “Committee” in these rules :

- (a) The State Government may constitute a Site Appraisal Committee and re-constitute the Committee as and when necessary;
- (b) The State Government may appoint a senior official of the Factories Inspectorate, Preferably with qualification in Chemical Engineering, to be the Secretary of the Committee;
- (c) The State Government may appoint the following as members of the committee:-
  - (i) A representative of the Fire Services Organisation of the State Government;
  - (ii) A representative of the State Department of Industries;
  - (iii) A representative of the Director general of Factory Advice Service and Labour Institutes, Bombay.

(2) No member, unless required to do so by a Court of Law, shall disclose otherwise than in connection with the purpose of the Act, at any time, any information relating to manufacturing or commercial business or any working process which may come to his knowledge during his tenure as a Member of this Committee.

(3) Application for appraisal of sites.-

- (a) Application for appraisal of sites in respect of the Factories covered under section 2(cb) of the Act shall be submitted to the Chairman of the Site Appraisal Committee.
- (b) The application for site appraisal, along with 15 copies thereof, shall be submitted in the prescribed Form 15-A. The Committee may the prescribed item in the applications form if it considers the same to be not relevant to the application under consideration.

(4) Functions of the Committee-

- (a) The secretary shall arrange to register the applications received for appraisal of site on a separate register and acknowledge the same within a period of 7 days.
- (b) The Secretary shall fix up meeting in such a manner that all the applications received and registered are referred to the Committee within a period of one month from the date of their receipts.
- (c) The Committee may adopt a procedure for its working, keeping in view the need for expeditious disposal of applications.
- (d) The Committee shall examine the application for appraisal of a site with reference to the prohibitions and restrictions on the location of industry and the carrying on of process and operations in different areas as per the provisions of rule 5 of the Environment (Protection) Rules, 1986, framed under the Environment Protection Act, 1986.

- (e) The Committee may call for documents, examine, inspect the site if necessary and take other steps for formulating its views in regard to the suitability of the site.
- (f) Wherever the proposed site requires clearance by the Ministry of Industry or the Ministry of Environment and Forests, the application for Site Appraisal will be considered by the site Appraisal Committee only after such clearance has been received.

**Rules prescribed under section 7A(3), 41B(2) and 112**

**90B- Health and Safety Policy** – (1) Occupier of every factory, except as provided for in sub-rule (2)m shall prepare a written statement of his policy in respect of health and safety of workers at work.

(2) All factories.-

- (a) covered under section 2(m) (I) but employing less than 50 workers.
- (b) Covered under section 2(m) (ii) but employing less than 100 workers;

are exempted from requirements of sub-rule (1) :

Provided that they are not covered in the First Schedule under section 2 (cb) or carrying out processes or operations declared to be dangerous under section 87 of the Act.

(3) Notwithstanding anything contained in sub-rule (2), the Chief Inspector may require the Occupiers of any of the factories or class or description of factories to comply with the requirements of sub-rule (1), if, in his opinion, it is expedient to do so.

(4) The Health and Safety Policy should contain or deal with:

- (a) declared intention and commitment of the top management to health, safety and environment and compliance with all the relevant statutory requirements.
- (b) Organizational set-up to carry out the declared policy clearly assigning the responsibility at different levels and
- (c) Arrangements for making the policy effective.

(5) In particular, the policy should specify the following:

- (a) arrangements involving the workers;
- (b) intentions of taking into account the health and safety performance of individuals at different levels while considering their career advancement;
- (c) fixing the responsibility of the contractors, sub-contractors, transporters and other agencies entering the premises.
- (d) Providing a resume of health and safety performance of the factory on its Annual Report;
- (e) Relevant techniques and methods, such as safety audits and risk assessment for periodical assessment of the status on health, safety and environment and taking all the medical measures.
- (f) Stating its intentions of integrate health and safety in all decisions, including

those dealing with purchase of plant, equipments machinery and material, as well as selection and placement of personnel.

- (g) Arrangements for informing, education and training and retraining its own employees at different levels and the public, wherever required.

(6) A copy of the declared Health and Safety Policy signed by the occupier shall be made available to the Inspectorate having jurisdiction over the factory and to the Chief Inspector.

(7) the policy shall be made widely known by-

- (a) making copies available to all workers including contract workers, apprentices, transport, workers, suppliers, etc.
- (b) displaying copies of the policy at conspicuous places; and
- (c) any other means of communication;

in a language understood by majority of workers.

(8) The occupier shall revise the Safety Policy as often as may be appropriate, but it shall necessarily be revised under the following circumstances :-

- (a) whenever any expansion or modification having implications on safety and health of persons at work is made; or
- (b) whenever new substance (s) or articles are introduced in the manufacturing process having implications on health and safety of persons exposed to such substances.

### **Rules prescribed under Section 41B and Section 112**

**90-C – Collection and development and dissemination of information** –(1) The occupier of every factory carrying on a “hazardous process” shall arrange to obtain or develop information in the form of Material Safety Data Sheet (MSDS) in respect of every hazardous substance or material handle in the manufacture, transportation and storage in the factory. It shall be accessible upon request to a worker for reference.

- (a) Every such Material Safety Data Sheet shall include the following information:-
  - i) The identity used on the label;
  - ii) Hazardous ingredients of the substance;
  - iii) Physical and chemical characteristics of the hazardous substance;
  - iv) The physical hazards of the hazardous substance, including the potential for fire, explosion and reactivity;
  - v) The health hazards of the hazardous substances, including signs and symptoms of exposure, and any medical conditions which are generally recognised as being aggravated by exposure to the substance;
  - vi) The primary route (S) of entry;
  - vii) The permissible limits of exposure prescribed in the second Schedule under section 41-F of the Act, and in respect of a chemical not covered by the said Schedule, any exposure limit used or recommended by the manufacturer,

importer or occupier;

- viii) Any generally applicable precautions for safe handling and use of the hazardous substance, which are known, including appropriate hygienic practices, protective measures during repairs and maintenance of contaminated equipment, procedures for clean-up of spills and leaks;
  - ix) Any generally applicable control measures, such as appropriate engineering controls, work practices, or use of personal protective equipment;
  - x) Emergency and first-aid procedures;
  - xi) The date of preparation of the Material Safety Data Sheet, or the last change to it; and
  - xii) The name, address and telephone number of the manufacturer, importer, occupier or other responsible party preparing or distributing the Material Safety Data Sheet, who can provide additional information on the hazardous substance and appropriate emergency procedures, if necessary.
- (b) The occupier, while obtaining or developing a Material safety Data Sheet in respect of hazardous substance, shall ensure that the information recorded, accurately reflects the scientific evidence used in making the hazardous determination. If he becomes newly aware of any significant information regarding the hazards, of a substance, or ways to protect against the hazards, this new information shall be added to the Material Safety Data Sheet, as soon as practicable.
- (c) An example of such Material Safety Data Sheet is given in the Schedule to this rule.

(2) Labelling –( A) Every container of a hazardous substance shall be clearly labelled or marked to identify –

- a) the contents of the container;
- b) the name and address of the manufacturer or importer of hazardous substance;
- c) the physical and health hazards; and
- (d) the recommended personal protective equipment needed to work safely with the hazardous substance.

(B) In case a container is required to be transported by road outside the factory premises it should, in addition, be labelled or marked in accordance with the requirements laid down under rule 90L.

## SCHEDULE

### Material Safety Data Sheet

#### 1. *Chemical Identity*

Chemical Name	Chemical classification	
Synonyms	Trade Name	
Formula	C.A.S.No.	U.N.No:
Shipping Name		

Codes/Label

Hazchem No.:

Regulated identification \_\_\_\_\_

Hazardous waste

I.D. No.:

Hazardous Ingredients	C.A.S.No.	Hazardous Ingredients	C.A.S.No.
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1.

3.

2.

4.

## 2. Physical and Chemical Data

Boiling Range/Point	°C	Physical State	Appearance
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Melting/Freezing Point	°C	Vapour pressure at 35°C	mmHg	Odour
------------------------	----	----------------------------	------	-------

Vapour Density Air=1AT 30°C	Solubility in water	Others
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Specific Gravity Water=1	pH
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## 3. Fire and Explosion Hazard Data

Flammability Yes/No	LEL	%Flash Point °C	Autoignition °C Temperature
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TDG Flammability	UEL	%Flash Point °C
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Explosion Sensitivity to Impact	Explosion Sensitivity to Static Electricity	Hazardous Combustion Product
------------------------------------	--	---------------------------------

## Hazardous Polymerisation

Combustible Liquid	Explosive Material	Corrosive Material
--------------------	-----------------------	-----------------------

Flammable Material	Oxidiser	Others
--------------------	----------	--------

Pyrophoric Material	Organic Peroxide
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## 4. Reactivity Data Chemical Stability

Incompatibility with other material

Reactivity

Hazardous Reaction Products

5. Health Hazard Data

Routes of Entry

Effects of Exposure/Symptoms

Emergency Treatment

TLV (ACGIH)	ppm	mg/m3	STEL	ppm	mg/m3
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Permissible Exposure Limit	ppm	mg/m3	Odour Threshold	ppm	mg/m3
LD50			LD50		

NFPA Hazard signals	Health	Flammability	Stability	Special
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6. Preventive Measures

Personnel Protective Equipment

Handling and Storage Precautions

7. Emergency and First Aid Measure

FIRE	FIRE EXTINGUISHING MEDIA
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FIRE	Special Procedure Unusual Hazards
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EXPOSURE	First Aid Measures Antidotes/Dosages
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SPILLS	Steps to be taken Waste Disposal Method.
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8. Additional Information/References

9. Manufacturer/Suppliers Data

Name of firm	Contact person in emergency
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Mailing Address	Local Bodies involved
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Telephone/Telex Nos.:  
Telegraphic Address

Standard Packing  
Tremcard Details/Ref.  
Other

## 10. Disclaimer

Information contained in this material data sheet is believed to be reliable but no representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. It is upto the manufacturer/seller to ensure that the information contained in the material safety data sheet is relevant to the products manufactured/handled or sold by him as the case may be. The Government makes no warranties expressed or implied in respect of the adequacy of these documents for any particular purpose.

**90D – Disclosure of information to workers.**- (1) The Occupier of a factory carrying on a ‘hazardous process’ shall supply to all workers the following information in relation to handling of hazardous materials or substances in the manufacture, transportation, storage and other processes:-

- (a) Requirements of sections 41B, 41C and 41H of the Act;
- (b) A list of ‘hazardous processes’ carried on in the factory;
- (c) Location and availability of all Material Safety Data Sheets as per rule 90C;
- (d) Physical and health hazards arising from exposure to or handling of substance;
- (e) Measures taken by the occupier to ensure safety and control of physical and health hazards;
- (f) Measures to be taken by the workers to ensure safe handling, storage and transportation of hazardous substances;
- (g) Personal protective equipment required to be used by workers employed in ‘hazardous process’ or ‘dangerous operations’;
- (h) Meaning of various labels and markings used on the containers of hazardous substances as provided under rule 90C’;
- (i) Signs and symptoms likely to be manifested on exposure to hazardous substances and to whom to report;
- (j) Measures to be taken by the workers in case of any spillage or leakage of a hazardous substance;
- (k) Role of workers vis-à-vis the emergency plan of the factory, in particular the evacuation procedures;
- (l) Any other information considered necessary by the occupier to ensure the safety and health of workers.

(2) The information required by sub-rule (1) shall be complied and made known to workers individually through supply of booklets or leaflets and display of cautionary notice at the work places.

(3) The booklets, leaflets and the cautionary notices displayed in the factory shall be in the language understood by the majority of the workers, and also explained to them.

(4) The Chief Inspector may direct the occupier to supply further information to the workers as deemed necessary.

**90E- Omitted**

**90F- Omitted**

**90G- Omitted**

**90H- Disclosure of information to the Chief Inspector** – (1) The occupier of every factory carrying on hazardous process shall, furnish in writing to the Chief Inspector, a copy of all the information furnished to the workers.

(2) A copy of compilation of Material Safety Data Sheets in respect of hazardous substances used, produced or stored in the factory shall be furnished to the Chief Inspector, and the local Inspector.

(3) The occupier shall also furnish any other information asked by the Chief Inspector from time to time for the purpose of this Act and Rules made thereunder.

**90I- Omitted**

**90J- Omitted**

**90K – Information on industrial wastes.**-(1) The information furnished under rules 90D and 90H shall include the quantity of the solid and liquid wastes generated per day, their characteristics and the method of treatment such as incineration of solid wastes, chemical and biological treatment of liquid wastes, and arrangements for their final disposal.

(2) It shall also include information on the quality and quantity of gaseous waste discharged through the stacks or other openings, and arrangements such as provision of scrubbers, cyclone separators, electrostatics precipitators or similar such arrangements made for controlling pollution of the environment.

(3) The occupier shall also furnish the information prescribed in the sub-rules (1) and (2) to the State Pollution Control Board.

**90L – Review of the information furnished to workers, etc.**- (1) The occupier shall review once in every calendar year and modify, if necessary the information furnished under rules 90D and 90H to the workers and the Chief Inspector.

(2) In the event of any change in the process or operations or methods of work or when any new substance is introduced in the process or in the event of a serious accident taking place, the information so furnished shall be reviewed and modified to the extend necessary.

**90M Confidentiality of information.**- (1) The occupier of a factory carrying on hazardous process shall disclose all information needed for protecting safety and health of the workers to-

(a) his workers; and

(b) Chief Inspector

as required under rules 90D and 90H. If the occupier is of the opinion that the disclosure of details regarding the process and formulations will adversely affect his business interests, he may make a representation to the Chief Inspector stating the reasons for withholding such information. The Chief Inspector shall give an opportunity to the occupier of being heard and pass an order to the representation. An occupier aggrieved by an order to Chief Inspector may prefer an appeal before the Government within a period of 30 days. The Government shall give an opportunity to the occupier of being heard and pass an order. The order of the State Government shall be final.

**Rule Prescribed under Section 41B, 41C, and 112**

**90N- Medical Examination** .- (1) Workers employed in a 'hazardous process' shall be medically examined by a qualified medical practitioner, hereinafter referred to as " factory Medical Officer", in the following manner:-

- (a) Once before employment, to ascertain physical fitness of the person to do the particular job;
- (b) Once in a period of 6 months, to ascertain the health status of all the workers in respect of occupational health hazards to which they are exposed; and in cases where in the opinion of the Factory Medical Officer it is necessary to do so at a shorter interval in respect of any worker;
- (c) The detail's of pre-employment and periodical medical examinations carried out as aforesaid shall be recorded in the Health Register in Form No. 7

(2) No person shall be employed for the first time without a certificate of fitness in Form No. 29 granted by the Factory Medical Officer, If the Factory Medical Officer declares a person unfit for being employed in any process covered under sub-rule (1), such a person shall have the right to appeal to the Inspector who shall refer the matter to the Certifying Surgeon, whose opinion shall be final in the regard. If the Inspector is also a Certifying Surgeon, he may dispose of the application himself.

(3) Any findings of the Factory Medical Officer revealing any abnormality or unsuitability of any person employed in the process shall immediately be reported to the Certifying Surgeon who shall in turn, examine the concerned worker and communicate his findings to the occupier within 30 days. If the Certifying Surgeon is of the opinion that the worker so examined is required to be taken away from the process for health protection, he will direct the occupier accordingly, who shall not employ the said worker in the same process, However, the worker so taken away shall be provided with alternate placement unless he is, in the opinion of the Certifying Surgeon, from incapacitated in which case the worker affected shall be suitably rehabilitated.

(4) A Certifying Surgeon on his own motion or on a reference from an Inspector may conduct medical examination of a worker to ascertain the suitability of his employment in a hazardous process or for ascertaining his health status. The opinion of the Certifying Surgeon on such a case shall be final. The Fee required for this medical examination shall be paid by the occupier.

(5) The worker taken away from employment in any process under sub-rule (2) may be

employed again in the same process only after obtaining the Fitness Certificate from the Certifying Surgeon and after making entries to that effect in the Health Register.

(6) The worker required to undergo medical examination under these rules and for any medical survey conducted by or on behalf of the Central or the State Government shall not refuse to undergo such medical examination.

(7) All the factories shall maintain and keep the health record of every worker upto a minimum period of 40 yrs from the beginning of the employment or 15 years after retirement or cessation of employment, whichever is later.

**90-O Occupational Health Centre-** (1) In respect of any factory carrying on 'hazardous process' there shall be provided and maintained in good order an Occupational Health Centre with the services and facilities as per scale laid down hereunder:-

- (a) For factories employing up to 50 workers.-
  - (i) the services of a Factory Medical Officer on retainer-ship basis in his clinic to be notified by the occupier. He will carry out the pre-employment and periodical medical examination as stipulated in rule 90N and render medical assistance during any emergency;
  - (ii) a minimum of 5 persons trained on first aid procedures amongst whom at least one shall always be available during the working period.
  - (iii) A fully equipped first aid box.
- (b) For factories employing 51 to 200 workers-
  - (i) an Occupational Health Centre having a room with a minimum area of 15 sq. mtr. With floors and walls made a smooth and impervious surface and with adequate illumination and ventilation as well as equipment as per the Schedule annexed to this rule.
  - (ii) A part-time factory Medical Officer shall be on over all charge of the Centre who shall visit the factory at least twice in a week and whose services shall be readily available during medical emergencies;
  - (iii) One qualified and trained dresser-cum-compounder on duty through the working period;
  - (iv) A fully equipped first aid box in all the departments.
- (c) For factories employing above 200 workers,-
  - (i) one full-time Factory Medical Officer for factories employing up to 500 workers and more medical officer for every additional 1000 workers or part thereof;
  - (ii) an Occupational Health Centre having at least 2 rooms each with a minimum floor area of 15 sq. mtrs. with floors and walls made of smooth and impervious surface and adequate illuminations and ventilation as well as equipments as per the Schedule annexed to this rule'
  - (iii) there shall be one nurse, one dresser-cum-compounder and one sweeper-cum-ward boy throughout the working period.
  - (iv) The occupational Health Center shall be suitably equipped to manage medical

emergencies.

(2) The factory Medical Officer required to be appointed under sub-rule(1) shall have qualification included in Schedules to the Medical Degrees Act, 1916(Act 7 of 1916) or in the Schedules to the Medical Council Act, 1956(Act 102 of 1956) and possesses Diploma in Occupational and Industrial Health offered by any recognized University. Within one month of the appointment the Factory Medical Officer, the occupier of the factory shall furnish to the Chief Inspector the following particulars:

- (a) Name and address of the Factory Medical Officer.
- (b) Qualifications:
- (c) Experience, if any. And:
- (d) The sub-rule i.e.(1) (a) or (1) (b) or (1) (c) under which he is appointed.

#### SCHEDULE

##### **Equipment for occupational Health Centre in factories**

1. A glazed sink with hot and cold water always available.
2. A table with a smooth top at least 180 cm x 105 cm
3. Means for sterilizing instruments.
4. A couch
5. Two buckets or container with close fitting lids
6. A kettle and spirit stove or other suitable means of boiling water.
7. One bottle of spirituous ammoniac aromatics (120ml)
8. Two medium size sponges
9. Two kidney trays
10. Four cakes of toilet, preferably antiseptic soap.
11. Two clinical thermometers.
12. Two glass tumblers and two wine glasses.
13. Two tea spoons
14. Two graduated (120 ml) measuring glasses
15. One wash bottle (1000 cc) for washing eyes.
16. One bottle ( one litre) carbolic lotion 1 in 20
17. Three chairs.
18. One screen
19. One electric hand torch,
20. An adequate supply of tetanus toxoid.
21. Coramine liquid (60 ml)
22. Tablets-antihistaminic, antispasmodic (25 each)

23. Syringes with needles – 2 cc, 5 cc, and 10 cc
24. Two needle holders, big and small
25. Suturing needles and materials
26. One dissecting forceps.
27. One dressing forcep.
28. One scalpel
29. One stethoscope.
30. Rubber bandage- pressuring bandage.
31. Oxygen cylinder with necessary attachments.
32. One blood pressure apparatus.
33. One Patellar Hammer.
34. One Peak-flow meter for lung function measurements.
35. One Stomach wash set.
36. Any other equipment recommended by the factory Medical Officer according to specified need relating to manufacturing process.
37. In addition-
  - (1) For factories employing 51 to 200 workers:-
    - (i) Four plain wooden splints 900 mm x 100 mm x 6 mm
    - (ii) Four plain wooden splints 350 mm x 75 mm x 6 mm
    - (iii) Two plain wooden splints 250 mm x 50 mm x 12 mm
    - (iv) One pair artery forceps.
    - (v) Injections- morphine, pathidine, atropins, adrenaline, coramine, nocacan ( 2 each)
    - (vi) One pair of surgical scissors.
  - (2) For factories employing above 200 workers:-
    - (i) Eight plain wooden splints 900 mm x 100 mm x 6 mm
    - (ii) Eight plain wooden splints 350 mm x 75 mm x 6 mm.
    - (iii) Four plain wooden splints 250 mm x 50 mm x 12 mm
    - (iv) Two pairs of artery forceps.
    - (v) Injections – morphine, pethadinem atropine, adrenaline, coramine, novacan (4 each)
    - (vi) Two pair of surgical scissors.

**90P- Ambulance Van-** (1) in any factory carrying on 'hazardous process', there shall be provided and maintained in good condition, a suitably constructed ambulance van, equipped with items as per sub-rule (2) and manned by a full-time Driver-cum-Mechanic and a Helper trained in first-aid, for the purpose of transportation of serious cases of accidents or sickness.

The ambulance van shall not be used for any purpose other than the purpose stipulated herein and will normally be stationed at or near to the Occupational Health Centre.

Provided that a factory employing less than 200 workers, any make arrangements for procuring such facility at short notice from nearby hospitals or other places, to meet any emergency.

(2) The Ambulance should have the following equipments:-

(a) General :

- A wheeled stretcher with folding and adjusting devices, with the head of the stretcher capable of being tilted upward;
- Fixed suction with unit equipment.
- Fixed oxygen supply with equipment.
- Pillow with case, Sheets, - Blankets, - towels;
- Emesis bag, - Bed pan, - Urinal, -Glass.

(b) Safety equipment

- flares with life of 30 minutes
- Flood lights
- Flash lights, Fire extinguisher – dry powder type;
- Insulated gauntlets.

(c) Emergency care equipments :

(i) Resuscitation

- Portable suction unit, Portable oxygen units;
- Bag-Valve-Mask, hand operated artificial ventilation unit;
- Airways, - Mouth gags, Tracheostomy adoptors;
- Short spine board - I.V. fluids with administration unit;
- B.P. manometer, - Cugg, - Stethoscope.

(ii) Immobilization

- Long and short padded boards
- Triangular bandage, - Long and short spine boards'

(iii) Dressings

- Gauze pads – 4” x 4” – Universal dressing 10” x 36”
- Roll of aluminum foils, - Soft roller bandages 6” x 5 yards;
- Adhesive tape in 3” roll. – safety pins;
- Bandage sheets, - Burn sheet

(iv) Poisoning

- Syrup of Ipecac; - Activated Charcoal pre-packed in doses;
- Snake bite kit; - Drinking water

(v) Emergency Medicines

- As per requirements (under the advice of Medical Officer only)

**90Q- Decontamination facilities** .- In every factory, carrying out ‘hazardous process’, the following provisions shall be made to meet emergency;

- (a) fully equipped first aid box;
- (b) ready accessible means of water for washing by workers as well as for drenching the clothing of workers who have been contaminated with hazardous and corrosive substances; and such means shall be as per the scale shown in the table below:-

TABLE

No. of persons employed at any time	No. of drenching showers
(i) Upto 50 workers	Two
(ii) Between 51 to 200 workers	2+1 for every additional 50 or part thereof
(iii) Between 201 to 5000 workers	5 + 1 for every additional 100 or part thereof.
(iv) 501 workers and above	8 + 1 for every additional 200 part thereof.

(c) A sufficient number of eye wash bottles filled with distilled water or suitable liquid, kept in boxes or cupboards conveniently situated and clearly indicated by a distinctive sign which shall be visible at any time.

**90 R- Making available Health Records to workers.**- (1) The occupier of every factory carrying out a ‘hazardous process’ shall make accessible the health records including the record of workers exposure to hazardous processor as the case may be, the medical records of any worker for his perusal under the following conditions:-

- (a) Once in every six months or immediately after the medical examination, whichever is earlier;
- (b) IF the factory Medical Officer pr the Certifying Surgeon, as the case may be, is of the opinion that the worker has manifested signs and symptoms of any noticeable disease as specified in the Third Schedule of the Act;
- (c) If the worker leaves the employment
- (d) If any one of the following authorities so direct;
  - the Chief Inspector of Factories.
  - The Health Authority of the Central or the State Government

- Commissioner of Workmen's Compensation;
- The Director General Employees' State Insurance Corporation;
- The Director, Employees' State Insurance Corporation (Medical Benefits); and
- The Director General, Factory Advice Service and Labour Institutes.

(2) A copy of the upto date health records including the record of workers' exposure to hazardous process pr, as the case may be, the medical records shall be supplied to the worker on receipt of an application from him. X-ray plates and other medical diagnostic reports may also be made available for reference to his medical practitioner.

**90S- Qualifications, etc., of supervisors.-** (1) All persons who are required to supervise the handling of hazardous substances shall possess the following qualifications and experience;

- (a) (i) A degree in Chemistry or Diploma in chemical Engineering or Technology with 5 years experience; or
- (ii) A Master's Degree in Chemistry or a Degree in Chemical Engineering or Technology with 2 years experience

The experience stipulated above shall be in process operation and maintenance in the Chemical Industry.

- (b) The Chief Inspector may require the supervisor to undergo training in Health and Safety.

(2) The syllabus and duration of the above training and the organisations conducting the training shall be approved by the Director General Factory Advice Service and Labour Institutes or the State Government, in accordance with the guidelines issued by the DGFASLI.

**90T – Issue of guidelines.-** For the purpose of compliance with the requirements of sub-sections (1), (4) and (7) of section 41-B or 41-C, the Chief Inspector may, if deemed necessary, issue guidelines from time to time to the occupiers of factories on 'hazardous process' Such guideline's may be based on National Standards, Codes of Practice, or recommendations of International Bodies such as I.L.O and W.H.O.

## CHAPTER V

### WELFARE

#### Rule prescribed under-section (2) of Section 42:

**91. Washing facilities.** – 1) There shall be provided and maintained in every factory for the use of employed persons adequate and suitable facilities for washing which shall include soap and nail brushes or other suitable means of cleaning and the facilities shall be conveniently accessible, and shall not be located in the vicinity of latrines and urinals.

Such facilities shall be conveniently located near the rest or lunch rooms in factories where such rest-rooms or lunch-rooms are required to be provided. The washing facilities shall be so enclosed or screened as to ensure privacy :

Provided that where a permanently built wall of full height is provided separating the washing facilities from the latrines and urinals, it will be treated as satisfactory compliance with the requirement of this sub-rule in regard to location of washing facilities.

(2) Without prejudice to the generality of the foregoing provisions the washing facilities shall include-

- (a) a trough with taps or jets at intervals of not less than 60 centimetres, or
- (b) wash-basins with taps attached thereto, or
- (c) taps on stand-pipes, or
- (d) showers controlled by taps, or
- (e) circular troughs of the fountain type :

Provided that the Inspector may, having regard to the needs and habits of the workers, fix the proportion in which the aforementioned types of facilities shall be installed.

- (3) (a) Every trough and basin shall have a smooth, impervious surface and shall be fitted with a waste-pipe and plug.
- (b) The floor or ground under and in the immediate vicinity of every trough tap, jet, wash-basin, stand-pipe and shower shall be so laid or finished as to provide a smooth impervious surface and shall be adequately drained.

(4) For persons whose work involves contact with any injurious or obnoxious substances, or who are employed in a dusty process, there shall be at least one shower controlled by tap for every 10 persons employed at a time, and each of these showers shall be enclosed separately in case of their use by women workers. For persons whose work does not involve such contact or who are not employed in dusty processes, the number of washing facilities shall be as follows :-

Number or persons Employed at a time	Number of washing facilities
Upto 200	One for every 20 or part thereof
Exceeding 200	10 + 1 for every 50 or part thereof.

5) If female workers are employed, separate washing facilities shall be provided and so enclosed or screened that the interiors are not visible from any place where persons of the other sex work or pass, The entrance to such facilities shall bear conspicuous notice in the language understood by the majority of the workers "For Women Only" and shall also be indicated pictorially.

6) The water supply to the washing facilities shall be capable of yielding at least thirty litres a day for each person employed in the factory and Health Officer:

Provided that where the Chief Inspector is satisfied that such a yield is not practicable, he may by quantity not being less than five liters per day for every person employed in the factory.

**Rule prescribed under Section 43:**

**92. Facilities for keeping clothing.**- All classes of factories for keeping clothing not worn during working hours and for the drying of wet clothing. Such facilities shall include the provision of separate rooms, pegs, locker or other arrangements approved by the Chief Inspector of Factories.

SCHEDULE

Glass works.

Engineering workshops

Iron and steel works

Oil mills

Chemical works.

Automobile workshops

Dyeing works.

**Rule prescribed under sub-section (I) of Section 45:**

**93. First-aid appliances** .- The first-aid boxes or cupboards shall be distinctively marked with a red cross on white background and shall contain the following equipment.

(A) For factories in which the number of persons employed does not exceed ten, or (in the case of factories in which mechanical power is not used) does not exceed fifty person, each first-aid box or cupboard shall contain the following equipment:-

- (i) Six small size sterilised dressings;
- (ii) Three medium size sterilised dressings;
- (iii) Three large size sterilised dressings;
- (iv) Three large size sterilised burns dressings.
- (v) One (60 ml.) bottle of catrimide solution (1%) or a suitable antiseptic solution.
- (vi) One (60 ml.) bottle of mercurochrome solution (2%) in water.

- (vii) One (30 ml. Bottle containing sel-volatile having the does and mode of administration indicated on the label.
- (viii) One pair of scissors.
- (ix) One roll of adhesive plaster (2 cm x 1 m)
- (x) Six pieces of sterilised eye pads in separate sealed packets.
- (xi) A bottle containing 100 tablets (each of 325 ml.) of aspirin or any other analgesic
- (xii) Ointment for burns.
- (xiii) Polythene wash bottle (1/2 litre i.e. 500 c.c) for washing eyes.
- (xiv) A snake-bite lancet.
- (xv) One (30 ml.) bottle containing potassium permanganate crystals.
- (xvi) One copy of first-aid leaflet issued by the Directorate General of Factory Advice Service and Labour Institutes, Government of India.

(B). For factories in which mechanical power is used and in which the number of persons employed exceeds ten but does not exceed fifty, each first-aid box or cupboard shall contain the following equipment:-

- (i) Twelve small size sterilised dressings.
- (ii) Six medium size sterilised dressings
- (iii) Six large size sterilised burn dressings.
- (iv) Six large size sterilised burn dressings
- (v) Six (15 gm.) packets of sterilised cotton wool.
- (vi) One (120 ml.) bottle of cerimide solution (1%) or a suitable antiseptic solution.
- (vii) One (60 ml.) bottle of mercurochrome solution (2%) in water.
- (viii) One (120 ml.) bottle containing sal-volatile having the does and mode of administration indicated on the label.
- (ix) One pair of scissors
- (x) Two rolls of adhesive plaster (2 cm x 1 m)
- (xi) Eight pieces of sterilised eye pads in separate sealed packets.
- (xii) One tourniquet
- (xiii) One dozen safety pins
- (xiv) A bottle containing 100 tablets (each of 325 mg.) of aspirin or any other analgesic.
- (xv) Ointment for burns.
- (xvi) One polythene wash bottle (1/2 litre i.e. 500 c.c.) for washing eyes.
- (xvii) A snake-bite lancet.
- (xviii) One (30 ml) bottle containing potassium permaganate crystals.)

- (xix) One copy of the first-aid leaflet issued by the Directorate General of Factory Advice Service and Labour Institutes Government of India, Bombay.

(C) For factories employing more than fifty persons, each first-aid box or cupboard shall contain the following equipments.

- (i) Twenty four small sterilised dressings
- (ii) Twelve medium size sterilised dressings
- (iii) Twelve large size sterilised dressings
- (iv) Twelve large size sterilised burn dressings
- (v) Twelve (15 gm) packets of sterilised cotton wool
- (vi) One (200 ml) bottle of cetrimide solution (1%) or a suitable antiseptic solution
- (vii) One (120 ml) bottle of mercurochrome (2%) solution in water.
- (viii) One (120 ml) bottle of sal-volatile having the dose and the mode of administration indicated on the label.
- (ix) One pair of scissors
- (x) One roll of adhesive plaster (6 cm. X 1 m.)
- (xi) Two rolls of adhesive plaster (2 cm. X 1 m.)
- (xii) Twelve pieces of sterilised eye pads in separate sealed packets.
- (xiii) A bottle containing 100 tablets (each of 325 mg.) of aspirin or any other analgesic.
- (xiv) One polythene wash bottle (500 cc) for washing eyes.
- (xv) Twelve roller bandages 10 cm wide.
- (xvi) Twelve roller bandages 5 cm wide.
- (xvii) Six triangular bandages.
- (xviii) One tourniquet.
- (xix) A supply of suitable splints.
- (xx) Two packets of safety pins.
- (xxi) Kidney tray.
- (xxii) A snake-bite lancet.
- (xxiii) Ointment for burns.
- (xxiv) One (30 ml.) bottle containing potassium permanganate crystals.
- (xxv) One copy of first-aid leaflets issued by the Directorate General of Factory Advice Service and Labour Institutes, Government of India, Bombay

Provided that items (xiv) to (xxi) inclusive, need not be included in the standard first-aid box or cupboard.

- (a) where there is a properly equipped ambulance room, or

- (b) if at least one box containing such items and placed and maintained in accordance with the requirements of section 45 is separately provided.

(D) In lieu of the dressing required under items (I) and (ii) there may be substituted adhesive wound dressings by the Chief Inspector of Factories and other equipment or medicines that may be considered essential and recommended by the Chief Inspector from time to time.

**Rule prescribed under Section 112 read with sub-section (3) of Section 45:**

**94. Notice regarding first-aid.**- A notice containing the names of the person working within the precincts of the factory who are trained in first-aid treatment and who are trained in first-aid boxes or cupboards shall be posted in every factory at a conspicuous place and near such box or cupboard. The notice shall also indicate work-room where the said person shall be available. The name of the nearest hospital and its telephone number shall also be mentioned prominently in the said notice.

**Rule prescribed under sub-section (4) of Section 45:**

**95. Ambulance Room.**- (1) Every ambulance room shall be under the charge of a least one whole-time qualified medical practitioner (hereinafter referred to as "the medical officer") assisted by at least one qualified nurse or dresser-cum-compounded and one nursing attendant in each shift:

Provided that where a factory works in more than one shift, the Chief Inspector, if he is satisfied that on account of the size of the factory, nature of hazards or frequency of accidents, it is not necessary to employ a whole-time medical officer for each shift separately, may, with the previous approval of the Government, grant exemption from the provisions of this sub-rule and permit employment of only one whole-time medical officer for more than one or all shifts, subject to the conditions that-

- (a) there shall be no relaxation in respect of nursing staff.
- (b) the medical officer is readily available on call during the working hours of the factory.
- (c) no person shall be appointed as medical officer incharge of ambulance room, unless he processes a Diploma in Occupational and Industrial Health offered by any recognized University.

(2) There shall be displayed in the ambulance room or dispensary a notice giving the name, address and telephone number of the medical officer in charge. The name of the nearest hospital and its telephone number shall also be mentioned prominently in the said notice.

(3) No medical officer shall be required or permitted to do any work which is inconsistent with or detrimental to his responsibilities under this rule.

(4) The ambulance room shall be separate from the rest of the factory and shall be used only for the purpose of first-aid treatment and rest. It shall have a floor area of at least 24 square meters and smooth, hard and impervious walls and floors, and shall be adequately ventilated and lighted by both natural and artificial means. There shall be attached to it at least one latrine and urinal of sanitary type. An adequate supply of wholesome drinking water shall be in the ambulance room and the room shall contain at least –

- (i) A glazed sink with hot and cold water always available.
- (ii) A table with a smooth top at least 180 cm X 105 cms.
- (iii) Means for sterilising instruments.
- (iv) A couch.
- (v) Two stretchers.
- (vi) Two buckets or containers with close fitting lids.
- (vii) Two rubber hot water bags.
- (viii) A kettle and spirit stove or other suitable means of boiling water.
- (ix) 12 plain wooden splints 900 mm X 100 mm X 6 mm.
- (x) Twelve plain wooden splints 350 mm X 75 mm X 6 mm.
- (xi) Six plain wooden splints 250 mm X 50 mm X 12 mm.
- (xii) Six woolen blankets.
- (xiii) Three pairs artery forceps.
- (xiv) One bottle of spiritous ammoniac aromaticus (120 ml.).
- (xv) Smelling salts (60gm.).
- (xvi) Two medium size sponges.
- (xvii) Six hand towels.
- (xviii) Four “kidney” trays.
- (xix) Four cakes of toilet, preferably antiseptic soap.
- (xx) Two glass tumblers and two wine glasses.
- (xxi) Two clinical thermometers.
- (xxii) Two teaspoons.
- (xxiii) Two graduated (120 ml.) measuring glasses.
- (xxiv) Two minimum measuring glasses.
- (xxv) One wash bottle (1000 c.c.) for washing eyes.
- (xxvi) One bottle (one litre) carbolic lotion 1 in 20.
- (xxvii) Three chairs.
- (xxviii) One screen.
- (xxix) One electric hand torch.
- (xxx) An adequate supply of anti-tetanus toxoid.
- (xxxi) Four first-aids boxes or cupboard stocked to the standard prescribed under (6) of rule 93.
- (xxxii) Injections – morphine, pethidine, atropine, adrenaline, coramine, novocan (6 each).
- (xxxiii) Coramine liquid (60 ml.).

(xxxiv) Tablets-antihistaminic, antispasmodic (25 each).

(xxxv) Syringes with needles-2cc, 10 cc. And 50 cc.

(xxxvi) Three surgical scissors.

(xxxvii) Two needle holders, big and small.

(xxxviii) Suturing needles and materials.

(xxxix) Three dissecting forceps.

(xi) Three dressing forceps

(xii) Three scalpels.

(xlii) One stethoscope.

(xlili) One sphygmomanometer (Blood pressure Instrument)

(xliv) Rubber bandage – pressure bandage.

(xlv) Oxygen Cylinder with necessary attachments.

(4) The occupier of every factory to which these rules apply shall for the purpose of removing serious case of accidental or sickness, provide in the premises and maintain in good condition a suitable conveyance unless he has made arrangements of obtaining such a conveyance from a hospital.

(5) A record of all cases of accidental and sickness treated at the room shall be kept and produced to the Inspector or Certifying Surgeon when required.

(6) The Chief Inspector may, by an order in writing exempt any factory from the requirements of this rule, subject to such conditions as he may specify in that order, if a hospital, ambulance room or dispensary is maintained at or within 200 metres of the precincts of the factory and such arrangements are made as to ensure the immediate treatment of all injuries sustained by workers within the factory and for providing rest to the workers so injured.

*Explanation.* For the purpose of this rule “Qualified Medical Practitioner” means a person holding a qualification granted by an authority specified in the Schedule to the Indian Medical Degrees Act, 1961, or in the Schedules to the Indian Medical Council Act, 1956.

#### **Rule prescribed under Section 46:**

**96. Canteens** - (1) The occupier of every factory wherein more than 250 workers are ordinarily employed and which is specified by the Government by a notification in the Official Gazette in this behalf shall provide, in or near the factory, an adequate canteen according to the standards prescribed in the Rules.

(2) The canteen building shall be situated at a distance of not less than 15 meters from any latrine, urinal, boiler house, coal stacks, ash dumps and any other source of dust, smoke or obnoxious fumes:

Provided that the Chief Inspector may in any particular factory relax the provisions of this sub-rule to such an extent as may be reasonable in the circumstances and may require adequate measures to be adopted to secure the essential purpose of this sub-rule.

(3) The canteen building shall be constructed in accordance with the plans approved by the chief Inspector and shall accommodate at least a dining hall, kitchen, store room, pantry

and washing places separately for workers and for utensils.

(4) In a canteen the floor and inside walls upto a height of 1.2 meters from the floor shall be made of smooth and impervious material; the remaining portion of the inside walls shall be made smooth by cement plaster or in any order manner approved by the Chief Inspector.

(5) The doors and windows of a canteen building shall be of flyproof construction and shall allow adequate ventilation.

(6) The canteen shall be sufficiently lighted at all times when any persons have access to it,

(7) (a) In every canteen

(i) all inside walls of rooms and all ceilings and passages and staircases shall be limewashed or colourwashed at least once in each year or painted once in three year dating from the period when last limewashed, colourwashed or painted, as the case may be.

(ii) All wood work shall be varnished or painted once in three years dating from the period when last varnished or painted.

(iii) All internal structural iron or steel work shall be varnished or painted once in three years dating from the period when last varnished or painted.

Provided that inside walls of the kitchen shall be limewashed once every four months.

(b) Records of dates on which limewashing, colourwashing, varnishing or painting is carried out shall be maintained in the prescribed register (Form 8.)

(8) The precincts of the canteen shall be maintained in a clean and sanitary condition. Waste water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance Suitable arrangements shall be made for the collection and disposal of garbage.

**97. Dining hall.-** (1) The dining hall shall accommodate at a time at least 30 per cent of the workers working to be so accommodated.

Provided that inside walls of the kitchen shall be limewashed once every four months.

(2) The floor area of the dining hall, excluding the area occupied by the service counter and any furniture except tables and chairs, shall be not less than 1 square meter per diner to be accommodated as prescribed in sub-rule (1)

(3) A portion of the dining hall and service counter shall be partitioned off and reserved for women workers in proportion to their number. Washing places for women shall be separate and screened to secure privacy.

(4) Sufficient tables, chairs or benches shall be available for the number of dinners to be accommodated as prescribed on sub-rule (1).

**98. Equipment.** - (1) There shall be provided and maintained sufficient utensils, crockery, cutlery, furniture and any other equipment necessary for clothes for the employees serving the canteen shall also be provided and maintained.

(2) The furniture, utensils and other equipments shall be maintained in a clean and hygienic conditions. A service counter, if provided, shall have a top of smooth and

impervious material. Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipment.

**99. Prices to be charged.**- (1) The Chief Inspector may, by an order in writing, direct the manager to provide in the canteen any item of foodstuff if he is satisfied that such item is in general demand. Such order shall specify the size of each portion to be served, the number of portions which shall be available and the frequency of serving the particular item per week. Such order shall also specify the time limit within the order shall be complied with.

(2) Food, drink and other items served in the canteen shall be sold on a non-profit basis and the prices charged shall be subject to the approval of the Canteen Managing Committee;

(3) In computing the prices referred to in sub-rule (1) the following items of expenditure shall not be taken into consideration, but will be borne by the occupier:-

- (a) the rent for the land and building
- (b) the depreciation and maintenance charges of the building and equipment provided for the canteen;
- (c) the cost of purchases, repairs and replacement of equipment including furniture, crockery, cutlery and utensils;
- (d) the water charges and expenses for providing lighting and ventilation.
- (e) The interest on the amount spent on the provision and maintenance of the building, furniture and equipment provided for the canteen;
- (f) The cost of fuel required for cooking or heating foodstuffs or water; and
- (g) The wages of the employees serving in the canteen and the cost of uniforms, if any, provided to them:

Provided that where a canteen is managed by worker's co-operative society, the prices to be charged may include a margin of profit upto a maximum of 5 per cent of its working capital

(4) The charges per portion of foodstuffs, beverages and any other items served in the canteen shall be conspicuously displayed in the canteen.

**100. Accounts.**- (1) All books of accounts registers and any other documents used in connection with the running of the canteen shall be produced on demand to an Inspector.

(2) The accounts pertaining to the canteen shall be audited, once in every twelve months, by registered accountants and auditors. The balance sheet prepared by the said auditors shall be submitted to the Canteen Managing Committee not later than two months after the closing of the audited accounts:

Provided that the accounts pertaining to the canteen in a Government factory having its own accounts department, may be audited in such department:

Provided further that where the canteen is managed by a co-operative society register under the Co-operative Societies Act, the accounts pertaining to such canteen may be audited in accordance with the provisions of the Co-operative Societies Act.

**101. Managing Committee.** - (1) The manager shall appoint a Canteen Managing

Committee which shall be consulted from time to time as to-

- (a) the quality and quantity of food stuffs to be served in the canteen
- (b) the arrangement of the menus;
- (c) the time of serving meals in the canteen; and
- (d) any other matter pertaining to the canteen as may be directed by the Committee:

Provided that where the canteen is managed by a Co-operative Society registered under the Co-operative Societies Act, it shall not be necessary to appoint a Canteen Managing Committee.

(2) The Canteen Managing Committee shall consist of an equal number of persons nominated by the occupier and those elected by the workers. The number of elected workers shall be in the proportion of 1 for every 1000 workers employed in the factory, provided that in no case shall there be more than 2 workers on the Committee.

(3) The manager shall determine and supervise the procedure for elections to the Canteen Managing Committee.

(4) Canteen managing Committee shall be reconstituted every two years and the previous member of the canteen staff who handles foodstuffs shall be carried out by the factory medical officer or the Certifying Surgeon, which shall include the following:-

**102. Annual medical examination.** - (1) Annual medical examination for fitness of each member of the canteen staff who handles foodstuffs shall be carried out by the factory medical officer or the Certifying Surgeon, which shall include the following:-

- (a) routine blood examination;
- (b) routine and bacteriological testing of faces and urine for germs of dysentery and typhoid fever; and
- (c) any other examination including chest X-ray that may be considered necessary by the factory medical officer or the certified Surgeon.

(2) Any person who in the opinion of the factory medical officer or the Certifying Surgeon is unsuitable for employment on account of possible risk to the health or others, shall not be employed as canteen staff.

**Rule prescribed under Section 47:**

**103. Shelters, rest rooms and lunch rooms.**- The shelters or rest rooms and lunch rooms shall conform to the following standards:-

- (a) the building shall be soundly constructed and all the walls and roof shall be of suitable heat resisting materials and shall be water-proof. The floor and walls to a height of 90 centimeters shall be so laid or finished as to provide a smooth, hard and impervious surface;
- (b) the height of every room in the building shall be not less than 3.75 meters from floor level to the lowest part of the roof and there shall be at least 1.12 square meters of floor area for every person employed:

Provided that-

- (i) workers who habitually go home for their meals during the rest periods may be excluded in calculating the number of workers to be accommodated, and
- (ii) in the case of factories in existence at the date of commencement of the Act, where it is impracticable owing to lack of space for provide 1.12 square metres of floor area for each person, such reduced floor area per person shall be provided as may be approved in writing by the Chief Inspector.

Provided further that, in the case of rooms in buildings in existence at the date of the coming into force of this rule which have been or are intended to be adopted for use as shelters or rest-rooms or lunch-rooms, as the case may be, the Chief Inspector may approve the rooms having such reduced height as may in his opinion be reasonable in the circumstances of the case on such conditions as may be deemed expedient.

- (c) Effective and suitable provisions shall be made in every room for securing and maintaining adequate ventilation by the circulation of fresh air and there shall also be provided and maintained sufficient and suitable natural or artificial lighting;
- (d) Every room shall be adequately furnished with chairs or benches with back-rest;
- (e) Sweepers provisions shall be employed whose primary duty shall be to keep the rooms, buildings and precincts thereof in a clean and tidy conditions.
- (f) Suitable provision shall be made in every room for supply of drinking water and facilities for washing; and
- (g) The lunch room shall be provided with adequate number of tables with impervious tops for the use of workers for taking food.

#### **Rules prescribed under sub-section (3) of Section 48:**

**104. Creches.-** (1) The creche shall be conveniently accessible to the mothers of the children accommodated therein and so far as is reasonably practicable it shall not be suitable in close proximity to any part of the factory where obnoxious fumes, dust or odours are given off or in which excessively noisy processes are carried on.

(2) The buildings in which the creche is situated shall be soundly constructed and all the walls and roofs shall be of suitable heat resisting materials and shall be waterproof. The floor and internal walls of the creche shall be so laid or finished as to provide a smooth impervious surface.

(3) The height of the rooms in the building shall be not less than 3.75 meters from the floor to the lowest part of the roof and there shall be not less than 2 square meters of floor area for each child to be accommodated:

Provided hat in the case of rooms in buildings in existence at the date of the coming into force of these Rues and which have been or are intended to be adopted for use as a creche, the Chief Inspector may approve the rooms having such reduced height as may in his opinion be reasonable in the circumstances of the case on such conditions as may be deemed expedient.

- (4) Effective and suitable provision shall be made in every part of the creche for

securing and maintaining adequate ventilation by the circulation of fresh air.

(5) The creche shall be adequately furnished and equipped and in particular there shall be one suitable cot or cradle with the necessary bedding for each child;

Provided that for children over two years of age it will be sufficient if suitable bedding is made available and at least one chair or equivalent seating accommodation for the use of each mother while she is feeding or attending to her child, and a sufficient supply of suitable toys for the older children :

(6) A suitably fenced and shady open air playground shall be provided for the older children:

Provided that the Chief Inspector may be order in writing exempt any factory from compliance with this sub-rule if he is satisfied that there is no sufficient space available for the provision of such a play-ground.

**105. Washroom.** - (1) There shall be in or adjoining the creche a suitable washroom for the washing of the children and their clothing. The washroom shall conform to the following standards:-

- (a) the floor and internal walls of the room to a height of 90 centimeters shall be so laid or furnished as to provide a smooth impervious surface. The room shall be adequately lighted and ventilated and the floor shall be effectively drained and maintained in a clean and tidy condition;
- (b) there shall be at least one basin or similar vessel for every four children accommodated in the creche at any one time together with a supply of water provided, if practicable, through taps from a source approved by the Health Officer. Such source shall be capable of yielding for each child a supply of at least 23 liters of water a day; and
- (c) an adequate supply of clean clothes, soap and clean towels shall be made available for each child while it is in the creche.

(2) Adjoining the washroom referred to in sub-rule (1), a latrine shall be provided for the sole use of the children in the creche. The design of latrine and the scale of accommodation to be provided shall either be approved by the Public Health authorities or, where there is no such Public Health authority, by the Chief Inspector of Factories.

**106. Supply of milk and refreshment.**- At least 300 ml. of clean pure milk shall be provided for each child every day it is accommodated in the creche and the mother of such a child shall be allowed in the course of her daily work two intervals of at least fifteen minutes each other than those allowed under section 55 to feed the child. For children above two years of age there shall be provided in addition an adequate supply of wholesome refreshment.

**107. Creche staff.**- For each creche there shall be appointed a woman in-charge and an adequate number of female attendants to help the woman in-charge. The creche staff shall be provided with suitable clean clothes for use while on duty.

**108. Qualifications of woman in-charge.**- (1) Except as provided in sub-rule (2), no woman

shall be appointed under rule 104 as a woman in-charge of a creche unless she possess the qualifications prescribed for a midwife under any law in force or produces a certificate that she has undergone training for a period of not less than 18 months in a hospital, maternity home or nursing home approved in this behalf by the Chief Inspector, or produces a certificate that she has received training for a pre-primary teacher in an institution approved by the Government.

(2) The provisions of sub-rule 1) shall not apply in the case of a woman who is in-charge of a creche in a factory immediately before the coming into force of these rules, and any rules regarding qualifications of such woman-in-charge of a creche prevailing prior to the coming into force of these rules shall apply to her.

**Rule prescribed under section 50 read with Section 48:**

**109. Exemption from the provision of creche.-** (1) In factories where the number of married women or widows employed does not exceed 15 or where the factory works for less than 180 days in a calendar year, or where number of children kept in the creche was less than 5 in the preceding year, the Chief Inspector may exempt such factories from the provisions of section 48 and the rules 104 to 108 made thereunder, if he is satisfied that alternate arrangements as stipulated under sub-rule (2) are provided by the factory.

(2)(a) The alternate arrangements required in sub-rule (1) shall include a creche building which has a minimum accommodation at the rate of 1.86 square meters per child and constructed in accordance with the plans approved by the Chief Inspector.

(b) The creche buildings shall have-

(i) a suitable washroom for washing of the children and their clothing.

(ii) Adequate supply of soap and clean clothes and towels; and

(iii) Adequate number of female attendants who are provided with suitable clean clothes for use while on duty to look after the children in the creche.

(3) The exemption granted under sub-rule (1) may at any time be withdrawn by the Chief Inspector if he finds after such enquiry as he may deem fit, that the factory has committed a breach of the provision of this rule.

**Rule prescribe under sub-section (2) of Section 49 and Section 50:**

**110. Welfare Officers.**

*1) Number of Welfare Officers-*

(a) The occupier of every factory employing between 500 and 2000 workers shall appoint at least one Welfare Officer, and where the number of workers exceeds 2000, there shall be an additional Welfare Officer for every additional 2000 workers or fraction thereof over 500. In a factory where both men and women workers are employed, the number of women Welfare Officers to be appointed shall be in proportion to the women workers employed provided that where the number of women employed is more than 100 and the total number of workers does not exceed 2500 an additional women Welfare Officer shall be appointed.

(b) Where there are more than one Welfare Officer appointed, one of them shall be called

the Chief Welfare Officer and the others Assistant Welfare Officers.

2) *Qualifications*.- A person shall not be eligible for appointment as a Welfare Officer unless he-

- (a) possesses a degree of a University recognised by the Government in this behalf.
- (b) Has obtain a degree or diploma in social science from any institution recognised by the Government in this behalf; and
- (c) Has adequate knowledge of the language spoken by the majority of the workers in the factory to which he is to attached:

Provided that the Government may, by notification in the Official Gazette, grant exemption from the provision of clause (b) in suitable cases till such time better facilities in the matter of training in social science are available.

Provided further that, in the case of a person who is acting as a Welfare Officer at the commencement of these rules, the Government, may, subject to such conditions as it may specify, relax all or any of the aforesaid qualifications.

(3) *Recruitment of Welfare Officers*.-

- (a) The post of a Welfare Officer shall be advertised in at least two newspapers having a wide circulation in the State, one of which shall be an English newspaper;
- (b) The selection shall be made from among the candidates applying for the post by a committee appointed by the occupier of the factory.
- (c) The appointment when made shall be notified by the occupier to the Government or such authority as the government may specify for this purpose, giving full details of the qualifications, etc. of the officer appointed and the conditions of his service.

(4) *Conditions of service of Welfare Officers*

- (a) A welfare Officer shall be given appropriate status corresponding to the status of the other executive heads of the factory and he shall be started on a suitable scale of pay.
- (b) The conditions of service of a Welfare Officer shall be the same members of the staff of corresponding status in the factory:

Provided that, in the case of discharge or dismissal, the Welfare Officer shall have a right of appeal to the Government whose decision thereon shall be final and binding upon the occupier.

(5) *Duties of Welfare Officer*.-

- (a) To establish contacts and hold consultation with a view to maintaining harmonious relations between the factory management and workers;
- (b) To bring to the notice of the factory management the grievances of workers, individual as well as collective, with a view to securing their expeditious redress and to act as a liaison officer between the management and labour;
- (c) To study and understand the point of view of labour in order to help the factory management to shape and formulate labour policies and to interpret these policies to the workers in a language they can understand;
- (d) To maintain good industrial relations by using his influence in the event of a dispute between the factory management and workers and bringing about a settlement by

persuasive effort;

- (e) To advise on fulfillment by the management and the concerned departments of the factory of obligations, statutory or otherwise, concerning regulation of working hours, maternity benefit, medical care, compensation for injuries and sickness and other welfare and social benefit measures;
- (f) To advise and assist the management and the concerned prevention of personal injuries and maintaining a safe work environment, in such factories where a Safety Officer is not required to be appointed under the enabling provisions under Section 40 B:
- (g) To promote relations between the concerned departments of the factory and workers which will bring about productive efficiency as well as amelioration in the working conditions and to help workers to adjust and adapt themselves to their working environments.
- (h) To encourage the formation of Works and joint Production Committees, Co-operative Societies and Welfare Committees, and to supervise their work.
- (i) To encourage provision of amenities such as canteens, shelters for rest, creches, adequate latrine facilities, drinking water, sickness and benevolent scheme payments, pension and superannuation's funds, gratuity payments, granting of loans and legal advice to workers;
- (j) To help the factory management in regulating the grant of leave with wages and explain to the workers the provisions relating to leave with wages and other leave privileges and to guide the workers in the matter of submission of application for grant to leave for regulating authorized absence;
- (k) To advise on provisions of welfare facilities, such as housing facilities, foodstuffs, social and recreational facilities, sanitation, advice on individual personnel problems and education of children;
- (l) To advise the factory management on questions relating to training of new starters, apprentices, workers on transfer and promotion, instructors and supervisors, supervision and control of notice board and information bulletins to provide further education to workers and to encourage their attendance at technical institutes; and
- (m) To suggest measures which will serve to raise the standard of living of workers and in general promote their well-being.

*(6) Welfare officers not to deal with disciplinary cases or appear on behalf of the management against workers-*

No Welfare Officer shall deal with any disciplinary cases against workers or appear before a conciliation officer in a court or tribunal on behalf of the factory management against a worker.

*(7) Powers of exemption-*

The Government may, by notification in the Official Gazette, exempt any factory or class or description of factories from the operation of all or any of the provisions of these rules subject to compliance with such alternative arrangements as may be approved.

**CHAPTER VI**  
**WORKING HOURS OF ADULTS**

**Rule prescribed under sub-section (2) of Section 53.**

**111. Compensatory holidays.-**

(1) Except in the case of workers engaged in any work which for technical reasons must be carried on continuously throughout the day, the compensatory holidays to be allowed under sub-section (1) of section 53 of the Act shall be so spaced that not more than two holidays are given in one week.

(2) The manager of the factory shall display, on or before the end of the month in which holidays are lost, a notice in respect of workers allowed and compensatory holidays during the following month and of the dates thereof, at the place at which the notice of periods of work prescribed under section 61 is displayed. Any subsequent change in the notice in respect of any compensatory holiday shall be made not less than three days in advance of the date of that holiday.

(3) Any compensatory holiday or holidays to which a worker is entitled shall be given to him before he is discharged or dismissed and shall not be reckoned as part of any period of notice required to be given before discharge or dismissal.

(4) (a) the manager shall maintain a register in form No. 17.

Provided that, if the Chief Inspector of Factories is of the opinion that any muster roll or register maintained as part of the routine of the factory or return made by the manager, gives in respect of any or all of the workers in the factory the particulars required for the enforcement of section 53, he may, by order in writing, direct that such muster roll or register or return shall, to the corresponding extent, be maintained in place of and be treated as the register or return required under this rule for that factory.

(b) The register maintained under clause (a) shall be preserved for a period of three years after the last entry in it and shall be produced before the Inspector on demand.

**112. Factories exempted under Section 58.-** 1) The Printing Presses attached to the newspaper offices shall be exempted from the provisions of sub-section (1) of section 58, subject to the following conditions, namely:-

In such printing press-

- (i) the workers of each relay shall bear a badge of distinct colour which will identify the worker of one relay from that of the other;
- (ii) the colour of the badge to be worn by the workers of each relay shall be specified in the notice of periods of work required to be displayed and correctly maintained under sub-section (1) of Section 61 and in the copies of the notice to be sent to the Inspector under sub-sections (9) and (10) of the said section;
- (iii) a flag or light having the same colour as that of the badge to be worn by the workers of any relay actually at work shall be displayed during the time of actual working of one or more relays in the department concerned:

- (iv) each worker engaged in the work carried on by means of over-lapping shifts shall be in possession of an identity card. The identity card shall be supplied to the worker by the factory management free of cost and shall bear the photograph of the worker, his full name, signature or thumb impression and visible identification mark and the signature of the manager.

**Muster roll prescribed under sub-section (4) of Section 59:**

**113. Muster roll for exempted factories.-** The manager of every factory-

- (a) which is exempted under Section 5, or
- (b) in which workers are exempted under section 64 or section 65, from the provisions of section 51 or section 54, shall keep a muster roll in Form No. 18 showing the normal piece work rate of pay or the rate of pay per hour of all the exempted workers in the factory.

In this muster roll it shall be correctly entered the extent of overtime worked by each worker together with the overtime earnings in respect thereof and the dates of the payment of such earning. The muster roll in Form No. 17 shall always be available, and produced for inspection whenever required by an Inspector.

**114. Overtime slips.** – Any work done by a worker beyond the normal specified period of work shall be entered in the overtime slips in duplicate indicating therein the actual period of overtime worked by him. A copy of such overtime slip duly signed by the manager or by a person duly authorised by him in that behalf, shall be given to the worker immediately after completion of the overtime work :

Provided that if the Chief Inspector of Factories is satisfied that in view of the nature of work carried out in the factory, it is not possible to issue daily slips to the workers, he may permit issue of weekly slips.

**Rule prescribed under Section 60 :**

**115. Double employment of workers. –**

- (a) The Inspector may sanction the employment of adult workers in more than one factory on the same day if he is satisfied that such adult worker is allowed to work not more than forty eight hours in a week and is allowed weekly holidays as per section 52.
- (b) A note under the initials of the Inspector shall be made in the remarks column of a Register of such workers permitted to work in more than one factory.

**Notice prescribe under sub-section (8) of section 61 :**

**116. Notice of period of work for adults.** – The notice of periods of work for adult workers shall be in Form No. 19.

**Register prescribed under sub-section (2) of section 62 :**

**117. Register of adult workers.** – The register of adult workers shall be in Form No.20.

**Rules prescribed under section 64 :-**

**118. Persons defined to hold position of supervision or management or employed in a confidential position** - (1) In a factory, the following persons shall be deemed to hold positions of supervision or management within the meaning of sub-section (1) of section 64 of the Act, provided they are not required to perform manual labour or clerical work as a regular part of their duties, namely:-

- (i) The Manager, Deputy Manager, Assistant Manager, Production Manager, Work Manager and General Manager.
- (ii) Departmental Head, Assistant Departmental Head, Departmental in-charge or Assistant Department In-charge.
- (iii) Chief Engineer, Deputy Chief Engineer and Assistant Engineer;
- (iv) Chief Chemist, Laboratory in- Charge;
- (v) Personal Manager, Personnel Officer;
- (vi) Labour Officer, Assistant Labour Officer;
- (vii) Welfare Officer, Additional Welfare Officer or Assistant Welfare Officer;
- (viii) Safety Officer;
- (ix) Security Officer
- (x) Foreman, Charge man, Overseer and Supervisor;
- (xi) Jobber in Textile Factories
- (xii) Head Store-Keeper and Assistant Store-Keeper.
- (xiii) Boiler Sarang or such Boiler Attendants who are in-charge of a battery of boilers and are only required to do supervisory work; and
- (xiv) Any other person who, in the opinion of the Chief Inspector, holds a position of supervision or management and is so declared in writing by him.

(2) In a factory, the following persons shall be deemed to be employed in a confidential position within the meaning of sub-section (1) of section 64 of the Act, namely:

- (i) Stenographer or Telex Operators
- (ii) Office Superintendent
- (iii) Head Accountant and Head Cashier;
- (iv) Head Clerk, where there is no Office Superintendent;
- (v) Head Time Keeper; and
- (vi) Any other person who in the opinion of the Chief Inspector, is employed in a confidential position and is so declared in writing by him.

(3) Any dispute as to whether a person, by virtue of the nature of his duties falls in any of the definitions, given in sub-rules (1) or (2) above, shall be decided by the Chief Inspector by passing an order in writing which shall be final.

(4) On an application made by the occupier or manager of a factory, the Chief Inspector may declare in writing any person other than the person defined in sub-rules(1) and (2)

above, as a person holding a position of supervision or management or employed in a confidential position in a factory, if in the opinion of the Chief Inspector, such person holds such position or is so employed.

(5) All declarations of the nature described in sub-rule(4) of this rule, made by the Chief Inspector under the provisions of any earlier rules in that behalf, shall be deemed to have been made under sub-rule(4) and shall continue to remain in force.

**119. List of persons defined in rule 118 and overtime muster-roll and slips** – (1) A list showing the name and designations of all persons defined in rule 118 shall be maintained in every factory and it shall be made available for inspection to the Inspector at all times when work is being carried on in any factory.

(2) Where the ordinary rate of wages of any of the persons whose name is shown in the list maintained under sub-rule (1) of this rule does not exceed rupees sixteen hundred per month, the manager of the factory shall. -

(a) maintain a muster-roll in Form 17 as specified under rule 113, in respect of such persons, and

(b) issue overtime slips as specified under rule 114, to such persons.

**120. Exemption of certain adult workers** – Adult workers engaged in factories specified in column (2) of the Schedule hereto annexed, on the work specified in column(4) of the said Schedule, shall be exempt from the provisions of the sections specified in column (5) thereof, subject to the conditions, if any, specified in column (6) of the said Schedule; and also subject to the following conditions, namely:-

(i) No woman workers shall be required or allowed to work for more than nine hours in any day:

(ii) Except in respect of exemption under clause(a) sub-section (2) of section 64 of the Act, the following limits of work inclusive of over time shall be observed, namely:-

(a) the total number of hours of work in any day shall not exceed ten;

(b) the spread over, inclusive of intervals for rest shall not exceed twelve hours in any one day;

(c) the total number of hours in a week including overtime, shall not exceed sixty; and

(d) the total number of hours of overtime shall not exceed fifty for any one quarter:

Provided that, the limits imposed by sub-clauses (a) and (b) above, shall not apply in the case of a shift worker engaged in factories specified against category and No. X(1) to (39) in the Schedule hereto if the said worker is allowed to work the whole or part of the subsequent shift in the absence of a worker who has failed to report for duty.

**Schedule**

Category	Class of factories	Exemption under section	Nature of exempted work	Exemption from section	Conditions
1	2	3	4	5	6
(I)	All factories	64 (2) (a) and 64 (3) for urgent repairs and for consequential exemptions from the provisions of section 61	<p>Urgent repairs <i>Explanation:</i> "Urgent repairs" for the purposes of this exemption shall mean:</p> <p>(a) repairs to any part of machinery, plant or structure of a factory, which are of such a nature that delay in their execution would involve danger to human life or safety or the stoppage of the manufacturing process;</p> <p>(b) repairs to deepsea ships and repairs to commercial aircrafts which are essential to enable such ships or aircrafts to leave port at proper time or continue their normal operations in sea worthy or airworthy conditions, as the case may be, and</p> <p>(c) repairs in connection with a change of motive power e.g. from steam to electricity or vice versa when such work cannot possibly be done without stoppage of the normal manufacturing process:</p> <p>Provided that urgent repairs shall not include periodic cleaning and maintenance work</p>	51,52,54,55, 56 and 61	<p>(i) The occupier or manager of the factory shall send to the Inspector a notice within 24 hours of the commencement of the work, stating therein the precise nature of urgent repairs, the exact time of the commencement of such work and the list of all persons employed on such work. A copy of such notice shall be displayed in the factory as provided under section 108(2) of the Act within 25 hours of the completion of the work of that effect shall be sent to the Inspectorate along with the copy of entries made in Form 18 in respect of every worker mentioned in the earlier notice.</p> <p>(ii) No worker shall be allowed or required to work on such repairs for more than 15 hours on any one day, 39 hours during any consecutive days or 66 hours during each period</p>

1	2	3	4	5	6
					<p>of seven consecutive days commencing from his first employment on such work.</p> <p>(iii) If the Inspector is of the opinion that any work being carried on in a factory as 'Urgent Repairs', is not urgent repairs the Inspector shall serve on the manager an order to that effect and the manager shall in respect of such work not require any worker to work in contravention of the provisions of sections 51, 52, 54, 55 and 56 and shall comply with section 61 of the Act.</p> <p>(iv) No worker shall be required or allowed to work for the period of more than six hours before he has had an interval of rest or food of at least half an hour</p> <p>(v) Provision of section 53 of the Act and rules 113 and 114 of the Rules shall be complied with.</p>

1	2	3	4	5	6
(II)	All factories except those on continuous process	64(2)(b) for work in the nature of preparatory or complementary work.	(a) Maintenance work in connection with the mill gearing, the electric driving of lighting apparatus, the mechanical or electrical lifts or hoists and steam or water pipes or pumps of the factory;  (b) Departmental oilers; and  (c) Workers attending to the starting, stopping and maintaining electrical motors and connected switch gears.	51, 54, 55 and 56	(i) No worker shall be required or allowed to work on shifts of longer than 8 hours duration.  (ii) Intervals for food and shall be given to all workers allowed to work on such work'  (iii) Provisions of rules 113 and 114 shall be complied with.
(III)	All factories	64(2)(e) for work which is necessarily intermittent in nature.	(1) (a) Work performed by drivers on lighting, ventilating and humidifying apparatus  .(b) Work performed by fire-pumpmen and all personnel on the fire fighting staff  (2) Telephone Operators and Telex Operators	51, 52, 55 and 56	- do -
(IV)	All Factories	64(2) (h) for work in the engine room, boiler house, power plants or transmission machinery	Workers engaged in engine rooms or boiler house attending to power plant transmission machinery or the prime movers.	51, 52	Provisions of section 53 of the Act and Rules 113 and 114 of the Rules shall be complied with

1	2	3	4	5	6
(V)	All Factories	64(2)(i)work of loading and unloading	Workers engaged in the loading wagons or lorries, trucks and tankers or the loading and unloading at jetties	51, 52, 54, 55, 56, 61	<p>(i) No worker shall be required or allowed to work on shift of longer than 8 hours duration.</p> <p>(ii) Intervals for food and rest shall be given to all workers allowed to work on such works.</p> <p>(ii)Provisions of section 53 of the Act and Rules 113 and 114 shall be complied with.</p>
(VI)	Carbonic Acid Gas factories	64(2)(b) for work in the nature of preparatory complementary work.	Work of firemen to light lye-boiler.	51, 54, 55	<p>(i) This exemption shall be availed of only on the day on which the plant is restarted after a closure</p> <p>(ii) No worker shall be required or allowed to work on shift of longer than 8 hours duration.</p> <p>(iii) Interval for food and rest shall be given to all workers allowed to work on such work.</p> <p>(iv) Provisions of rules 113 and 114 shall be complied with.</p>

1	2	3	4	5	6
(VII)	1) Cloth printing factories or departments.	64(2)(b) for work in the nature of preparatory complementary work	Work in the nature of preparatory or complimentary or main operations of printing, sanforizing and finishing and mercerizing of cloth.	51, 54 and 56	Provisions of rules 113 and 114 shall be complied with.
	2) Cotton spinning and weaving mills	- do -	Work involved in cleaning blow room flues	- do -	- do -
	3) Film studios	- do -	All work in the nature of preparatory or complimentary work which is necessary for the shooting of time	- do -	- do -
(VIII)	Dyeing or bleaching factories or departments	- do -	Work performed by Kienmen	51, 54, 55 and 56	(i) No workers shall be required or allowed to work on shifts of longer than 8 hrs duration. (ii) Intervals for food and rest shall be given to all workers allowed to work on such work. (iii) Provisions of rules 113 and 114 shall be complied with.
(IX)	(1) Brick factories	64(2)(b) for which for technical reason must be carried on continuously.	Work of firemen on kilns	55	(i) No worker shall be required or allowed to work on shifts of longer than 8 hours duration. (ii) Intervals for food and rest shall be given to all workers

1	2	3	4	5	6
					allowed to work on such work.
	(2) Cashew nuts factories	- do -	Oil extraction work	55	-do-
	(3) Cloth printing and processing factories	64(2)(d) for work which for technical reason must be carried on continuously	Work of cloth printing, bleach-ing finishing, mercerizing, rais-ing,, dyeing, sing-ing and sanforiz-ing	55	- do -
	(4) collapsible tube manufacturing factories	- do -	Work of painting, coating, drying of collapsible tubes, if carried on in a continuous process	55	- do -
	(5) Cycle manufacturing automobile manufactur-ing of steel.	64(2)(d) for work which for technical reason must be carried on continuously	Work of painting and enabling. sections and service automatic plating plant	55	(i) No worker shall be required or allowed to work on shifts of longer than 8 hrs duration.  (ii) Intervals for food and rest shall be given to all workers allowed to work on such work.
	(6) Enamelled wire manufacturing factories	- do -	Work of enamelling of wires	55	- do -
	(7) Ferrous and non- ferrous metal factories	- do -	Work on Hot Rolling	55	- do -
	(8) Flour Mills	- do -	All work	55	- do -
	(9) Gum Industry	- do -	Work performed in connection with shifting, dehusking, grinding and packing	55	- do -

1	2	3	4	5	6
	(10) India Government Mint	- do -	Melting, Department including dress washing	55	- do -
	(11) Leather cloth factories	-do-	Working of continuous coat-ing of PVC dry-ing, fushing in hot air oven and embossing	55	-do-
	(12) Lime Bhatties	- do -	Work employed on bhatties	55	- do -
	(13) Oil Mills	- do -	All continuous process work	55	- do -
	(14) Ordnance factories	-do-	Work in melting shops swarfan Neal in furnaces gas producers, electrical sub-stations and water and electrical distribution departments.	55	- do -
	(15) Pharmaceuticals factories	- do -	All continuous process work	55	- do -
	(16) Plastic factories	- do -	Work on plastic injection moulding machine and extrusion machine	55	- do -
	(17) Pottery works	- do -	Work on fireman on kilns	55	- do -
	(18) Shellac factories	- do -	Workers employed on kilns	55	- do -
	(19) Smelting and refining factories	64(2)(d) for work which for technical reasons must be carried on	(1) work on reducing furnace (2) All continuous process work in connection with electrolytic refining	55	(i) No worker shall be required or allowed to work on shifts of longer than 8 hrs. durations.

1	2	3	4	5	6
		continuously.			(ii) Intervals for food and rest shall be given to all workers allowed to work on such work.
	(20) Soap factories	- do -	Work on soap building pans and soaps drying pans	55	- do -
	(21) Sodium and potassium bicarbonate factories	- do -	All works	55	- do -
	(22) Spinning and weaving mills	- do -	Work on hot air sizing machine	55	- do -
(X)	(1) Acetylene factories	-do	Generation of gas and filling of cylinders	51, 52, 54, 55 and 56	(i) No worker shall be required or allowed to work on shifts of longer than 8 hrs duration (ii) Intervals for food and rest shall be given to all workers allowed to work on such work. (iii) Provisions of rules 113 and 114 shall be complied with (iv) Compliance with section 53 of the Act shall be made in such a way that such workers shall

1	2	3	4	5	6
					<p>(v) be allowed not less than two holidays in each period covered by four consecutive statutory holidays under section 52(1) of the Act.</p> <p>(vi) In the absence of a worker who has failed to report for duty, a shift worker may be allowed to work the whole or part of the subsequent shift provided that the next shift of the at worker shall not commence before a period of 16 hours has elapsed after the specified stopping time of the shift to which he belongs</p>
	(2) carbonic acid gas works	- do -	Work of firemen, pump men, plan driver, boilers and the filling of cylinders	51,52,54,55 and 56	- do -
	(3) carbonic acid gas solidification works	- do -	All work except packing blocks	- do -	- do -
	(4) Cement factories and asbestos cement factories	- do -	All continuous process work	- do -	- do -
	(5) Chemical factories	- do -	- do -	- do -	- do -

1	2	3	4	5	6
	(6) Chemical products factories	64(2)(d) for work which for technical reasons must be carried on continuously	Process of manufacturing activated carbon	51, 52, 54, 55 and 56	<ul style="list-style-type: none"> <li>(i) No worker shall be required or allowed to work on shifts of longer than 8 hours duration.</li> <li>(ii) Intervals for food and rest shall be given to all workers allowed to work on such work</li> <li>(iii) Provisions of rules 113 and 114 shall be complied with.</li> <li>(iv) Compliance with section 53 of the Act shall be made in such a way that such workers shall be allowed not less than two holidays in each period covered by four consecutive statutory holidays under section 52 (I) of the Act</li> <li>(v) In the absence of a worker who has failed to report for duty, a shift worker may be allowed to work the whole or part of the subsequent shift provided that the next shift of that worker shall not commence before a period of 16 hours has elapsed after the specified stopping time of the shift to which he belongs.</li> </ul>

1	2	3	4	5	6
	(7) Cinematographic films processing factories	- do -	Work on developing and washing processes	- do -	- do -
	(8) Coal gas factories	- do -	All work in the retort house and on the retort house and on the water gas plant. Work of the male yard labour staff in unloading coal, feeding hoppers and removing coke, work on the siphons, boilers station meters and governors	- do	- do -
	(9) Computer	- do -	All works	- do -	- do -
	(10) Confectionery manufacturing departments or factories	- do -	Manufacturing of melted chocolate flavored food and chocolate making	- do -	- do -
	(11) Crude mineral oil and petrochemical refining factories	- do -	(a) All continuous process work performed by the plant operators, fire operators, laboratory testers and analysts. Maintenance and instrument personnel connected with continuous process work, dressers and sample carriers  (b) Work performed by safety operators	- do -	- do -
	(12) Dextrime manufacturing factories	64(2) (d) for work which for technical reasons must be	All continuous process work	51,52,54, 55 and 56	(i) No worker shall be required or allowed to work on shifts of longer than 8 hours duration.

1	2	3	4	5	6
		carried on continuously			<ul style="list-style-type: none"> <li>(ii) Intervals for food and rest shall be given to all workers allowed to work on such work.</li> <li>(iii) Provisions of rules 113 and 114 shall be complied with.</li> <li>(iv) Compliance with section 53 of the Act shall be made in such a way that such worker shall be allowed not less than two holidays in each period covered by four consecutive statutory holidays under section 52 (1) of the Act</li> <li>(v) In the absence of a worker who has failed to report for duty, a shift worker may be allowed to work the whole or part of the subsequent shift provided that the next shift or that worker shall not commence before a period of 16 hours has elapsed after the specified stopping time of the shift to which he belongs</li> </ul>
	(13) Distilleries	- do -	Work on the extraction of sugar from various bases fermentation of sugar cane juice and distillations of fermented wash.	- do -	- do -

1	2	3	4	5	6
	(14) Electrical accumulators charging departments of factories	- do -	Operations in connection with charging electrical accumulators	- do -	- do -
	(15) Electrical receiving stations and substations	64(2) (e) for work which for technical reasons must be carried on continuously.	Operation and maintenance of transformers and their auxiliaries including receiving and distribution switch gear, lightning arrestors synchronous and other condensers and rotary and static condensers	- do -	- do -
	(16) Electronic components factory	-do-	Welding, lacquering and colour coding of carbon registers	- do -	- do -
	(17) Ferrous and Non ferrous metal factories	-do-	Hot rolling	- do -	- do -
	(18) Glass Factories	64(2) (e) for work which for technical reasons must be carried on continuously	All continuous process work including cartoning and packing carried out in continuous chain	51, 52, 54, 55 & 56	<p>(i) No worker shall be required or allowed to work on shifts of longer than 8 hours duration</p> <p>Intervals for food and rest shall be given to all workers allowed to work on such work.</p> <p>(ii) Provisions of rules 113 and 114 shall be complied with.</p>

1	2	3	4	5	6
					<p>(iii) Compliance with section 53 of the Act shall be made in such a way that such workers shall be allowed not less than two holidays in each period covered by four consecutive statutory holidays under section 52 (1) of the act.</p> <p>(iv) In the absence of a worker who has failed to report for duty, a shift worker may be allowed to work the whole or part of the subsequent shift of the worker shall not commence before a period of 16 hours has elapsed after the specified stopping time of the shift to which he belongs</p>
	(19) Glycerine factories	- do -	All continuous process work	- do -	- do -
	(20) Hydraulic pumping	- do -	All work	- do -	- do -
	(21) Ice factories	- do -	Work of the engine and compressors drivers and assistants and oilers	- do -	- do -
	(22) Magnesium chloride factories	- do -	The work on concentrating process	- do -	- do -

1	2	3	4	5	6
	(23) Milk dairies	- do -	All work of receiving chilling, processing of milk by pasteurization, storage, bottling and packing of milk	- do -	- do -
	(24) Oil tank installations	- do -	(a) Work performed by workers in connection with pumping operations.  (b) Work performed by furnace men and firemen  (c) Work performed by safety operators	- do -	- do -
	(25) Oxygen factories	64(2)(e) for work which for technical reasons must be carried on continuously	Engine and plant drivers, oilers and the filling of the cylinders	51,52,54, 55 and 56	(i) No worker shall be required or allowed to work on shifts of longer than 8 hours duration.  (ii) Intervals for food and rest shall be given to all workers allowed to work on such work.  (iii) Provisions of rules 113 and 114 shall be complied with  (iv) Compliance with section 53 of the Act shall be made in such a way that such workers shall be allowed not less than two holidays in each period

1	2	3	4	5	6
					<p>(v) covered by four consecutive statutory holidays under section 52(1) of the Act.</p> <p>(vi) In the absence of a worker who has failed to report for duty a shift worker may be allowed to work the whole or part of the subsequent shift provided that the next shift of that worker shall not commence before a period of 16 hours has elapsed after the specified stopping time of the shift to which he belongs.</p>
	(26) Paper cardboard and strawboard factories	- do -	Work performed on choppers digesters kneaders strainers and washers, beaters, paper machines, pumping plants, reelers and cutters	- do -	- do -
	(27) Pharmaceutical factories	- do -	All continuous process operations in chemical plant	- do -	- do -
	(28) Phonograph Disc manufacturing factories	- do -	Work performed in matrix department	- do -	- do -
	(29) Potassium chlorate factories	- do -	Work in the cell room	- do -	- do -

1	2	3	4	5	6
	(30) Public electricity supply factories generating electricity in any manner and those engine rooms and boilers departments generating electricity in any manner.	- do -	Operation and maintenance of prime movers and auxiliaries generators, transformers and switch gears, also engines and boilers and their auxiliaries	- do -	- do -
	(31) Public pumping and compressor stations	- do -	- do -	- do -	- do -
	(32) Rubber tyre and rubber factories	64(2) All work (d) for work which for technical reasons must be carried on continuously	All work on curing process of rubber	51,52,54,55 and 56	<p>(i) No worker shall be required or allowed to work on shifts of longer than 8 hours duration.</p> <p>(ii) Intervals for food and rest shall be given to all workers allowed to work on such work.</p> <p>(iii) Provisions of rules 113 and 114 shall be complied with.</p> <p>Compliance with section53 of the Act shall be made in such a way that such workers shall be allowed not less than two holidays in each period covered by four consecutive statutory holidays under section52(1) of the Act.</p>

1	2	3	4	5	6
					(iv) In the absence of a worker who has failed to report for duty, a shift worker may be allowed to work the whole or part of the subsequent shift provided that the next shift of that worker shall not commence before a period of 16 hours has elapsed after the specified stopping time of the shift to which he belongs.
	(33) Silver refineries	- do -	All work	- do -	- do -
	(34) Soap factories	- do -	(a) All continuous process work in continuous soap making plants  (b) All continuous process work in synthetic detergent plants including cartooning and packing carried out in a continuous chain	- do -	- do -
	(35) Sodium and potassium bichromate factories	- do -	Work in furnace and crystallizes	- do -	- do -
	(36) Starch factories	- do -	All work except the engineering department and workshops.	- do -	- do -
	(37) Sugar factories	- do -	Operations beginning with receiving and weighing of sugarcane and ending with	- do -	- do -

1	2	3	4	5	6
			bagging of sugar.		
	(38) Vegetable oil hydrogenation factories	- do -	The work viz refining bleaching filtering generation in of hydrogen, hydrogenating and deodorizing processes, als compression of oxygen and the cylinder filling	- do -	- do -
	(39) Factories having effluent treatment plant	- do -	All continuous process	- do -	- do -
(XI)	(1) All cotton ginning factories	64(2)(b) for work in the nature of preparatory of complementary work 64(2)(f) for work, carried out during fixed seasons and section 64(3) for consequential exemption form section 61	Work performed by Gin filters, mochies and oilers.	51,52,54,55, 56 and 61.	All the five conditions in (X) (1), column (6). Register of muster roll required to be maintained under section 62 of the Act shall show correctly full particulars of periods within which each such worker may be required to work, entries in the register or muster roll shall be up-to-date.
(XII)	(1) Pottery works	64(2) (d) for work of continuous nature	Work on tunnel kilns	52 and 55	All the conditions as in (VII)
(XIII)	(1) Gur (Jaggery) factories	64(2) (b) for work in the nature prepara	All work	51,54,55 and 56	All the conditions as in (VIII)

1	2	3	4	5	6
		tory or complementary work, and 64(2) (c) for work, which is necessarily intermittent in nature.			
(XIV)	(1) News Printing presses	64(2)(i) for work in printing of newspaper which is held up due to breakdown of machinery.	All work on daily, weekly newspapers	-do-	<p>(a) No worker shall be allowed to work for more than 56 hours in any week</p> <p>(b) No overtime shall be carried on except for two days prior to the date of the publication of the weekly newspaper.</p> <p>(c) The exemption under this entry shall be availed of only in the section of the press where there is breakdown of machinery, and</p> <p>(d) Intervals for food and rest shall be given to all workers allowed to work on such work.</p>
(XV)	All factories	64 (2) (K) for work notified by the State Government as work of National importance	Workers engaged in any work which is notified by the State Government in the Official Gazette, as work of National importance.	51,52,54,55 and 56	All the conditions as in X(1) except condition No. (V).

## CHAPTER VII

### EMPLOYMENT OF YOUNG PERSONS

**Notice prescribed under sub-section (3) of Section 72:**

**121. Notice of periods of work for children** - The notice of periods of work for child-workers shall be in Form No. 21.

**Register prescribed under sub-section (2) of Section 73:**

**122. Register for child workers.** - The register of child-workers shall be in Form No. 22. This register shall be written up afresh each year and shall be preserved for a period of twelve months.

**CHAPTER VIII**  
**ANNUAL LEAVE WITH WAGES**

**Rules prescribed under Section 83 and 112:**

**123. Register of leave with wages** - (1) The Manager shall keep a register in form No. 23 hereinafter called the register of leave with wages:

Provided that if the Chief Inspector is of the opinion that any muster roll or register maintained as part of the routine of the factory, or return made by the manager, gives, in respect of any or all of the workers in the factory, the particulars required for the enforcement of Chapter VIII of the Act, he may, by order, in writing, direct that such muster roll or register or return shall to the corresponding extent, be maintained in place of and be treated as the register or return required under this rule in respect of that factory.

(2) The register of leave with wages shall be preserved for a period of three years after the last entry in it and shall be produced before the Inspector on demand.

**124. Leave book** - (1) The manager shall provide each worker who has become entitled to leave during a calendar year, with a book in Form No. 24 (hereinafter called the leave book) not later than the 31st January of the following calendar year. The leave book shall be the property of the worker and the manager or his agent shall not demand it except to make relevant entries of the dates of holidays or interruptions in service, and shall not keep it for more than a week at a time:

Provided that in the case of a worker who is discharged or dismissed from service during the course of the year, that is, who is covered under sub-section (3) of section 79 of the Act, the manager shall issue an abstract from the register of leave with wages (Form 23) within a week from the date of discharge or dismissal as the case may be.

(2) If a worker loses his leave book, the manager shall provide him with another leave book on the payment of paise 25 and shall enter his record thereon -

**125. Medical certificate.** - If any worker is absent from work and if he wants to avail himself of the leave with wages due to him to cover the period of illness as provided in sub-section (7) of section 79, he shall, if so required by the manager, produce a medical certificate signed by a registered medical practitioner or by a registered or recognised Vaid or Hakim stating the cause of the absence and the period for which the worker, is in the opinion of such medical practitioner Vaid or Hakim, unable to attend his work.

**126. Notice to Inspector of involuntary unemployment.** - The manager shall give, as soon as possible, a notice to the Inspector of every case wherein workers have been rendered involuntarily unemployed, giving numbers of persons so unemployed and the reason for their unemployment. Entries to this effect shall be made in the register of leave with wages and the leave book in respect of each worker concerned.

**127. Notice by worker.**- Before or on the completion of a period of twelve months continuous

service in the factory, as defined in section 79, a worker may give notice to the manager of his intention not to avail himself of holidays falling due in the following period of twelve months. The manager shall make an entry to that effect in the register of leave with wages and in the leave book of the worker concerned.

**128. Notice of leave with wages-** 1) Except in regard to a worker who has given notice of his intention not to avail himself of holidays in the year in which they fall due, the manager shall, by a notice displayed at the place at which the notice of the periods of work required under section 61 is displayed, fix the dates on which leave with wages shall be allowed to each worker or group of workers including any worker who has accumulated his leave. This date shall not, in an individual case, be earlier than four weeks from the date of notice unless the worker agrees to avail the leave earlier. The necessary entries shall be made in the register of leave with wages and the leave book of the worker concerned.

(2) As far as circumstances permit, members of the same family comprising husband, wife and children shall be allowed leave on the same date.

(3) The manager may alter the date fixed for leave only after giving a notice of four weeks to the worker concerned.

(4) A worker may exchange the period of his leave with another worker, subject to the approval of the manager.

**129. Payment of wages if the worker dies.** – If a worker who is not entitled to advance payment in accordance with the provisions of section 81, dies before he resumes work, the balance of his pay due for the period of leave shall be paid to his nominee and failing such nomination, to his legal representative within one week of the intimation of the death of the worker. For this purpose, each worker shall submit a nomination in Form No. 25 duly signed by himself and attested by two witnesses, to the manager. The nomination shall remain in force until it is cancelled or revised by another nomination.

**130. Register to be maintained in case of exemption under section 84.** - 1) Where an exemption is granted under section 84, the manager shall maintain a register showing the position of each worker as regards leave due, leave taken and wages granted.

(2) He shall display at the main entrance of the factory, a notice giving full details of the system established in the factory for leave with wages and shall send a copy of it to the Inspector.

(3) No alteration shall be made in the scheme approved by the government at the time of granting exemption under section 84 without its previous sanction.

## CHAPTER IX

### SPECIAL PROVISIONS

#### Rule prescribed under Section 87:

**131. Dangerous manufacturing processes or operations.-** The following manufacturing processes or operations when carried on in any factory are declared to be dangerous manufacturing processes or operations under section 87:-

- I. Manufacture of aerated water and processes incidental thereto.
- II. Electrolytic plating or oxidation of metal articles by use of an electrolyte containing chromic acid or other chromium compounds.
- III. Manufacture and repair of electric accumulators.
- IV. Glass manufacture
- V. Grinding or glazing of metals
- VI. Manufacture and treatment of lead and certain compounds of lead.
- VII. Generating petrol gas from petrol
- VIII. Cleaning or smoothing, roughening , etc. of articles by a jet of sand, metal shot or grit or other abrasive propelled by a blast of compressed air or steam.
- IX. Liming and tanning of raw hides and skins and processes incidental thereto.
- X. Certain lead processes carried on in printing presses and type foundries.
- XI. Manufacture of pottery.
- XII. Chemical works.
- XIII. Manufacture of articles from refractory materials.
- XIV. Handling and processing of asbestos, manufacture of any article of asbestos and any other process of manufacture or otherwise in which asbestos is used in any form.
- XV. Handling or manipulation of corrosive substances.
- XVI. Processing of cashewnuts.
- XVII. Compression of oxygen and hydrogen produced by the electrolysis of water.
- XVIII. Process of extracting oils and fats from vegetables and animal sources in solvent extraction plants.
- XIX. Manufacture or manipulation of manganese and its compounds.
- XX. Manufacture or manipulation of dangerous pesticides.
- XXI. Manufacture, handling and usage of benzene and substances containing benzene.

- XXII. Manufacturing process or operations in carbondisulphide plants.
- XXIII Manufacture or manipulation of carcenogenic dye intermediates.
- XXIV. Operations involving high noise levels.
- XXV. Manufacture of Rayon by Viscoso Process.
- XXVI. Handling and Processing of Highly Flammable liquids and flammable compressed Gases.
- XXVII. Operations in Foundries
- XXVIII. Fire works manufactories and match factories.

(2) The provisions specified in the schedules annexed hereto shall apply to class or description of factories wherein dangerous manufacturing processes or operations specified in each Schedule are carried on.

- (3) (a) For the medical examinations of the workers to be carried out by the certifying surgeon as required by the Schedules annexed to this rule, the Occupier of the factory shall pay fees at such rates as may be notified by the Government from time to time for examination of each worker.
- (b) The fees prescribed in sub-rule (3) (a) shall be exclusive of any charges for biological, radiological or other tests which may have to be carried out in connection with the medical examinations. Such charges shall be paid by the occupier.
- (c) The fees to be paid for medical examinations shall be paid into the local treasury under the head of account '0230- Labour and Employment, 104-Fees realised under the Factories Act, 1948'

(4). Notwithstanding the provision specified in the Schedules annexed to this rule, the Inspector may, by issue of orders in writing to the manager or occupier or both, direct them to carry out such measures, and within such time, as may be specified in such order with a view to removing conditions dangerous to the health of the workers, or to suspend any process, where such process constitutes, in the opinion of the Inspector m imminent danger of poisoning or toxicity.

(5). Any register or record of medical examinations and tests connected therewith required to be carried put under any of the Schedules annexed hereto in respect of any workers shall be kept readily available to the Inspector and shall be preserved for a minimum period of forty years from the beginning of the employment or fifteen years after retirement or cessation of employment, whichever is later.

## SCHEDULE I

### **Manufacture of Aerated Waters and processes incidental thereto**

1. *Fencing of machines* .- All machines for filling bottles or syphons shall be so constructed, placed or fenced, as to prevent, as far as may be practicable, a fregment of a bursting bottle or syphon from striking any person employed in the factory.

2. *Face guards and gauntles*.- (1) The occupier shall provide and maintain in good

conditions for the use of all persons engaged in filling bottles or syphons.

- (a) suitable face guards to protect the face, neck and throat; and
- (b) suitable gauntlets for both arms:

Provided that –

- (i) Paragraph 2 (1) shall not apply where bottles are filled by means of an automatic machine so constructed that no fragment of a bursting bottle can escape.
- (ii) Where a machine is so constructed that only one arm of the bottle work upon it is exposed to danger, a gauntlet need not be provided for the arm which is not exposed to danger, a gauntlet need not be provided for the arm which is not exposed to danger.

(2) The occupier shall provide and maintain in good condition for the use of all persons engaged in corking, crowning, screwing, wiring, foiling, capsuling, sighting or labeling bottles or syphons-

- (a) suitable face-guards to protect the face, neck and throat; and
- (b) suitable gauntlets for both arms to protect the arm and at least half of the palm and the space between the thumb and forefinger.

(3) *Wearing of face guards and gauntlets.*- All persons engaged in any of the processes specified in paragraph 2 of this Schedule shall, while at work in such processes, wear the face guards and gauntlets provided under the provisions of the said paragraph.

## SCHEDULE II

### **Electrolytic plating or oxidation of metal articles by use of an electrolyte containing chromic acid or other chromium compounds**

1. *Definitions* .- For the purposes of this Schedule –

- (a) “electrolytic chromium process” means the electrolytic planting or oxidation of metal articles by the use of an electrolyte containing chromic acid or other chromium compounds;
- (b) “bath” means any vessel used for an electrolytic chromium process or for any subsequent process;
- (c) “employed” means in paragraphs 5, 7, 8 and 9 of this Schedule, employed in any process involving contact with liquid from a bath; and
- (d) “suspension” means suspension from employment in any process involving contact with liquid from any bath by written certificate in the health register (Form 26) signed by the Certifying Surgeon who shall have power of suspensions as regards all persons employed in any such process.

2. *Exhaust draught.*- An efficient exhaust draught shall be applied to every vessel in which an electrolytic chromium process is carried on. Such draught shall be provided by mechanical means and shall operate on the vapour or spray given off in the process as near as may be at the point of origin. The exhaust draught appliance shall be so constructed, arranged and maintained as to prevent the vapour or spray entering into any room or place in which work

is carried on.

3. *Prohibition relating to women and young persons.*- No woman, adolescent or child, shall be employed or permitted to work at a bath.

4. *Floor of workrooms.*- The floor of every workroom containing a bath shall be impervious to water. The floor shall be maintained in good and level condition and shall be washed down at least once a day.

5. *Protective clothing.*- (1) The occupier shall provide and maintain in good and clean condition the following articles of protective clothing for the use of all persons employed on any process at which they are liable to come in contact with liquid from a bath and such clothing shall be worn by the persons concerned-

- (a) waterproof aprons and bibs; and
- (b) for persons actually working at a bath, loosefitting rubber gloves and rubber boots or other waterproof footwear.

(2) The occupier shall provide and maintain for the use of all persons employed suitable accommodation for the storage and adequate arrangements for the drying of the protective clothing.

6. *Cautionary placard.*- A cautionary placard in the form specified by the Chief Inspector and printed in the language of the majority of the workers employed shall be affixed in a prominent place in the factory where it can be easily and conveniently read by the workers.

7. *Medical requisites.*- The occupier shall provide and maintain a sufficient supply of suitable ointment and impermeable waterproof plaster in a separate box readily accessible to the workers and used solely for the purpose of keeping the ointment and plaster.

8. *Medical examination.*- (1) Every person employed in electrolytic chrome process, shall be examined by a Certifying Surgeon within 30 days of his first employment in the said process and if found fit, shall be granted by the Certifying Surgeon a certificate of fitness in Form No. 26 and after the first examination he shall be examined by the Certifying Surgeon at intervals of not more than frequent intervals.

(2) If at any time, the Certifying Surgeon is of the opinion that any person is no longer fit for employment in the said process on the grounds that continuance therein would involve special danger to the health of the worker, he shall cancel the certificate of fitness issued to him.

9. *Weekly examinations.*- (1) The occupier of every factory shall appoint a qualified medical practitioner whose appointment shall be subject to confirmation by the Chief Inspector.

(2) No person shall be employed in electrolytic chrome process unless he has been examined and found fit for the said process by the qualified medical practitioner. Such examination shall include inspection of hands, forearms and nose and will be carried out at intervals of not more than one week. The results of such examination shall be maintained in a health register in Form No. 27. The register shall be kept by the manager and shall contain the names of all persons employed in the said process and the certificate of fitness in respect of each person issued by the Certifying Surgeon shall be attached thereto.

(3) If at any time, the qualified medical practitioner is opinion that any person is no longer fit for employment in the electrolytic chrome process, he shall make a record of his findings in the health register and intimate the manager in writing that the said person is unfit for work in the said process.

(4) A person so found unfit by the registered medical practitioner shall be sent by the manager to the Certifying Surgeon with a report from the qualified medical practitioner. The Certifying Surgeon after examination may suspend the said person from working in the said process. No person after suspension shall be employed without written sanction from the Certifying Surgeon entered in or attached to the Health Register.

### SCHEDULE III

#### **Manufacture and repair of electric accumulators**

1. *Savings.*- This Schedule shall not apply to the manufacture of repair of electric accumulators or parts thereof not containing lead or any compound of lead; or to the repair on the premises, of any accumulator forming part of a stationary battery.

2. *Definitions.*- For the purpose of this Schedule.

- (a) 'lead process' means the melting of lead or any material containing lead, casting, pasting, lead burning, or any other abrading or cutting of pasted plates, involving the use, movement or manipulation of, or contact with, any oxide of lead;
- (b) "manipulation of raw oxide of lead" means any lead process involving any manipulation or movement of raw oxides of lead other than its conveyance in a receptacle or by means of an implement from one operation to another;
- (c) "suspension" means suspension from employment in any lead process by written certificate in the health register (Form 7) signed by the Certifying Surgeon who shall have power of suspension as regards all persons employed in any such process; and
- (d) "first employment" means first employment in a lead process in a factory or workshop and also re-employment there of in a lead process following any cessation of employment in such process for a period exceeding three calendar months.

3. *Prohibition relating to women and young persons.*- No woman or young persons shall be employed or permitted to work in any lead process or in any room in which the manipulation of raw oxide of lead or pasting is carried on.

4. *Separation of certain processes.*- Each of the following processes shall be carried on in such a manner and under such conditions as to secure effective separation from one another, and from any other process-

- (a) manipulation of raw oxide of lead;
- (b) pasting;
- (c) drying of pasted plates;
- (d) formation with lead burning (racking) necessarily carried on in connection therewith;
- (e) melting down of pasted plates; and
- (f) the grid casting soap.

5. *Air space.*- In every room in which lead process is carried on, there shall be at least 15.0 cubic meters of air space for each person employed therein, and in computing this air space no height over 3.75 meters shall be taken into account.

6. *Ventilation.*- every workroom shall be provided with inlets and outlets of adequate size as to secure and maintain efficient ventilation in all parts of the room.

7. *Distance between workers in pasting room.*- In every pasting room the distance between the centre of the working position of any one paster and that of the paster working nearest to him shall not be less than 1.5 meters.

8. *Floor of workroom.*- (1) The floor of every room in which lead process is carried on shall be-

- (a) of cement or similar material so as to be smooth and impervious to water;
- (b) maintained in sound condition; and
- (c) kept free from materials, plant, or other obstruction not required for, or produced in, the process carried on in the room.

(2) In all such rooms other than grid casting shops the floor shall be cleansed daily after being thoroughly sprayed with a water at a time when no other work is being carried on in the room.

(3) In grid casting shops the floor shall be cleansed daily.

(4) Without prejudice to the requirements of sub-paragraphs (1), (2) and (3), where manipulation of raw oxide of lead or pasting is carried on, the floor shall also be-

- (a) kept constantly moist while work is being done;
- (b) provided with suitable and adequate arrangements for drainage; and
- (c) thoroughly washed daily by means of a hose pipe.

9. *Work-benches.*- The work benches at which any lead process is carried on shall-

- (a) have a smooth surface and be maintained in sound condition and
- (b) be kept free from all materials or plant not required for, or produced in, the process carried on thereat;

and all such work-benches other than those in grid casting shops shall-

- (c) be cleansed daily either after being thoroughly damped or by means of a suction cleaning apparatus at a time when no other work is being carried on thereat;

and, all such work-benches in grid casting shops, shall-

- (d) be cleansed daily;

and every work-bench used for pasting shall;

- (e) be covered throughout with sheet lead or other impervious material;
- (f) be provided with raised edges; and
- (g) be kept constantly moist while pasting is being carried on;

and every work-bench used for trimming, brushing, filling or may any other abrading or cutting of pasted plates shall-

- (h) be fitted with a top having opening or grill which shall allow any clippings, filling or dust produced to all into a collecting through containing water.

10. *Exhaust draught.*- 1) The following processes shall not be carried on without the use of an efficient exhaust draught.

- (a) melting of lead or materials containing lead;
- (b) manipulation of raw oxide of lead, unless done in an enclosed apparatus so as to prevent the escape of dust into the workroom.
- (c) Pasting;
- (d) Trimming , brushing, filing or any other abrading or cutting of pasted plates giving rise to dust;
- (e) Lead burning, other than;
  - (i) tacking in the formation room; and
  - (ii) chemical burning for the making of lead lining for cell cases necessarily carried on in such a manner that the application of efficient exhaust is impracticable.

(2) Such exhaust draught shall be effected by mechanical means and shall operate on the dust or fume given off as nearly as may be at its point of origin, so as to prevent it entering the air of any room in which persons work.

11. *Fumes and gases from melting pots.*- The products of combustion produced in the heating of any melting pot shall not be allowed to escape into a room in which persons work.

12. *Container for dross.*- A suitable receptacle with tightly fitting covers shall be provided and used for dross as it is removed from every melting pot. Such receptacle shall be kept covered while in the workroom, except when dross is being deposited therein.

13. *Container for lead waste.*- A suitable receptacle shall be provided in every workroom in which old plated and waste material which may give rise to dust shall be deposited.

14. *Racks and shelves in drying room.* – (1) racks or shelves provided in any drying room shall not be more than 2.4 meters from the floor nor more than 60 centimeters in width:

Provided that as regards racks or shelves set or drawn from both sides the total width shall not exceed 120 centimeters

(2) Such racks or shelves shall be cleaned only after being thoroughly damped unless an efficient suction cleaning apparatus is used for this purpose.

15. *Protective clothing.* – (1) Protective clothing shall be provided and maintained in good repair for all persons employed in –

- (a) manipulation of raw oxide of lead.
- (b) Pasting
- (c) The formation room.

And such clothing shall be worn by the persons concerned.

(2) The protective clothing shall consist of a waterproof footwear; and in addition as regards persons employed in the manipulation of raw oxide of lead or in pasting, head coverings. The head coverings shall be washed daily.

16. *Messroom.* – There shall be provided and maintained for the use of all persons employed in a lead process and remaining on the premises during the meal intervals, a suitable messroom, which shall be furnished with sufficient tables and benches, and adequate means for warming food. The messroom shall be placed under the charge of a responsible person, and shall be kept clean.

17. *Cloakroom.* – There shall be provided and maintained for the use of all persons employed in a lead process-

- (a) a cloakroom for clothing put off during working hours with adequate arrangements for drying the clothing if wet, which accommodation shall be separate from any messroom; and
- (b) separate and suitable arrangements for the storage of protective clothing provided under paragraph 15.

18. *Washing facilities.*- 1) There shall be provided and maintained in a clean state and in good repair for the use of all persons employed in a lead process-

- (a) a wash place under cover, with either-
  - (i) a trough with a smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow of at least 60 centimeters for every five such persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 60 centimeters; or
  - (ii) at least one wash basin for every five such persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of water laid on;
- (b) a sufficient supply of clean towels made of suitable materials renewed daily, which supply, in the case of pasters and persons employed in the manipulation of raw oxide of lead, shall include a separate marked towel for each such worker; and
- (c) a sufficient supply of soap or other suitable cleansing material and of nail brushes.

(2) There shall in addition be provided means of washing in close proximity to the rooms in which manipulation of raw oxide of lead or pasting is carried on if required by notice in writing from the Chief Inspector.

19. *Time to be allowed for washing.*- Before each meal and before the end of the day's work, at least ten minutes, in addition to the regular meal times, shall be allowed for washing to each person who has been employed in the manipulation of raw oxide of lead or in pasting:

Provided that if there be one basin or 60 centimeters of trough for each such person this paragraph shall not apply.

20. *Facilities for bathing.*- Sufficient bath accommodation to the satisfaction of the Chief Inspector shall be provided for all persons engaged in the manipulation of raw oxide of lead or in pasting, and a sufficient supply of soap and clean towels.

21. *Food, drinks, etc. prohibited to workrooms.*- No food, drink, pan and supari or tobacco shall be consumed or brought by any worker into any workroom in which any lead process is carried on.

22. *Storage of lead oxides.*- All bags containing or having contained oxide of lead shall be kept in a closed room used only for this purpose.

23. *Re-use of paper or cloth restricted.*-

- (a) Paper once used for backing or drying pasted plates shall not be used again in the factory.
- (b) Cloth once used for backing or drying pasted plates shall not be stored or handled unless it is moist so as not to give off dust.

24. *Medical examination.*- 1) Every person employed in a lead process shall be examined by the Certifying Surgeon within seven days preceding or following the date of his first employment in such process and thereafter shall be examined by the Certifying Surgeon within seven days preceding or following the date of his first employment in such process and thereafter shall be examined by the Certifying Surgeon once in every calendar month, or at such other intervals as may be specified in writing by the Chief Inspector, on a day of which due notice shall be given to all concerned.

(2) A health register in Form 7 containing the names of all persons employed in a lead process shall be kept.

(3) No person after suspension shall be employed in a lead process without written sanction from the Certifying Surgeon entered in or attached to the health register.

#### SCHEDULE IV

##### **Glass manufacture**

1. *Definitions.*- For the purposes of this Schedule-

- (a) “efficient exhaust draught” means localised ventilation effected by mechanical means for the removal of gas, vapour, dust or fumes so as to prevent them (as far as practicable under the atmospheric conditions usually prevailing) from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove smoke generated at the point where such gas, vapour, fume or dust originate;
- (b) “lead compound” means any compound of lead other than galena which, when treated in the manner described below, yields to an aqueous solution of hydrochloric acid a quantity of soluble lead compound exceeding, when calculated as lead monoxide, five per cent of the dry weight of the portion taken for analysis.

The method of treatment shall be as follows:-

A weighed quantity of the material which has been dried at 100 degrees centigrade and thoroughly mixed shall be continuously shaken for one hour at the common temperature with 1,000 times its weight of an aqueous solution of hydrochloric acid containing 0.25 per cent by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighed as lead sulphate.

(c) "Suspension" means suspension from employment in any process specified in paragraph 3 by written certificate in the health register, Form 7, signed by the Certifying Surgeon who shall have power of suspension as regards all persons employed in any such process:-

2. *Exhaust draught.* - The following processes shall not be carried on except under an efficient exhaust draught or such other conditions as may be approved by the Chief Inspector:-

- (a) the mixing of raw materials to form a "batch"
- (b) the dry grinding, glazing and polishing of glass or any article of glass;
- (c) all processes in which hydrofluoric acid fumes or ammoniac vapours are given off;
- (d) all processes in the making of furnace moulds or "pots" including the grinding or crushing of used "pots"; and
- (e) all processes involving the use of a dry lead compound.

3. *Prohibition relating to women and young persons.* - No woman or young person shall be employed or permitted to work in any of the operations specified in paragraph 2 or at any place where such operations are carried on.

4. *Floor and work-benches.* - The floor and work-benches of every room in which a dry compound of lead is manipulated or in which any process is carried on giving off silica dust shall be kept moist and comply with the following requirements -

- (a) the floor shall be-
  - (i) of cement or similar material so as to be smooth and impervious to water;
  - (ii) maintained in sound conditions; and
  - (iii) cleansed daily after being thoroughly spread with water at a time when no other work is being carried on in the room; and
- (b) the work-benches shall-
  - (i) have a smooth surface and be maintained in sound condition; and
  - (ii) be cleansed daily either after being thoroughly damped or by means of a suction cleaning apparatus at a time when no other work is being carried on thereat.

5. *Use of hydrofluoric acid.*- The following provisions shall apply to rooms in which glass is treated with hydrofluoric acid-

- (a) there shall be inlets and outlets of adequate size as to secure and maintained efficient ventilation in all parts of the room;
- (b) the floor shall be covered with gutta-percha and be tight and shall slope gently down to a covered drain;
- (c) the workplaces shall be so enclosed in projecting hoods that openings required for bringing in the objects to be treated shall be as small as practicable; and
- (d) the efficient exhaust draught shall be so contrived that the gases are exhausted downwards.

6. *Storage and transport of hydrofluoric acid.*- Hydrofluoric acid shall not be stored or transported except in cylinders or receptacles made of lead or rubber.

7. *Blow pipes.* – Every glass blower shall be provided with a separate blow pipe bearing the distinguishing mark of the person to whom it is issued and suitable facilities shall be readily available to every glass blower for sterilizing his blow pipe.

8. *Food, drinks, etc, prohibited in workroom.* — No food, drinks, pan and supari or tobacco shall be brought into or consumed by any worker in any room or workplace wherein any process specified in paragraph 2 is carried on.

9. *Protective clothing.*- The occupier shall provide, maintain in good repair and keep in a clean condition for the use of all persons employed in the processes specified in paragraph 2, suitable protective clothing, footwear and goggles according to the nature of the work and such clothing, footwear, etc. shall be worn by the persons concerned.

10. *Washing facilities.*- There shall be provided and maintained in a clean state and in good repair for the use of all persons employed in the processes specified in paragraph 2;

- (a) a wash place with either-
  - (i) a trough with a smooth impervious surface fitted with a waste pipe, without plug, and of sufficient length to allow of at least 60 centimeters for every five such persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 60 centimeters ; or
  - (ii) at least one wash basin for every five such persons employed at any one time, fitted with a waste pipe and plug and having an adequate supply of water laid on or always readily available;
- (b) a sufficient supply of lean towels made of suitable material renewed daily with a sufficient supply of soap or any other suitable cleansing material and of nail brushes; and
- (c) a sufficient number of stand pipes with taps the numbers and location of which shall be to the satisfaction of the Chief Inspector.

11. *Medical examinations.*- (1) Every person employed in any process specified in paragraph 2 shall be examined by the Certifying Surgeon within seven days preceding of following the date of his first employment in such process and thereafter he shall be examined by the Certifying Surgeon once in every calendar month or at such other intervals as may be specified in writing by the Chief Inspector, on a day of which due notice shall be given to all concerned.

(2) A health register in Form 7 containing the names of all persons employed in any process specified in paragraph 2 shall be kept.

(3) No person after suspension shall be employed in any process specified in paragraph 2 without written sanction from the Certifying Surgeon entered in or attached to the health register.

12. *Exemption.*- If the Chief Inspector is satisfied in respect of any factory or any class of process that, owing to the special methods or otherwise, any of the requirements of this Schedule can be suspended or relaxed without danger to the persons employed therein, or that the application of this Schedule or any part thereof is for any reason impracticable, he may be

certificate in writing authorise such suspension or relaxation as may be indicated in the certificate for such period and on such conditions as he may think it.

## SCHEDULE V

### **Grinding, or glazing of metals and processes incidental thereto**

1. *Definitions.* – For the purpose of this Schedule –

- (a) “grindstone” means a grindstone composed of natural or manufactured sandstone by does not include a metal wheel or manufactured sandstone are fitted;
- (b) “abrasive wheel” means a wheel manufactured of bonded emery or similar abrasive;
- (c) “grinding” means the abrasion, by aid of mechanical power, of metal, by means of a grindstone or abrasive wheel;
- (d) “glazing” means the abrading up, polishing or finishing by and of mechanical power, of metal by means of any wheel, buff, mop or similar appliance to which any abrading or polishing substance is attached or applied;
- (e) “racing” means the turning up, cutting or dress of a revolving grindstone before it is brought into use for the first time;
- (f) “hacking” means the chipping of the surface of a grindstone by a hack or similar tool; and
- (g) “rodding” means the dressing of the surface of a revolving grindstone by the application of a rod, bar or strip of metal to such surface.

2. *Equipment for removal of dust* - No racing dry grinding or glazing shall be performed without.-

- (a) a hood or other appliance so constructed, arranged places and maintained as substantially to intercept the dust thrown off;
- (b) a duct of adequate size, air tight and so arranged as to be capable of carrying away the dust, which duct shall be kept free from obstruction and shall be provided with proper means of access for inspection and cleaning, and where practicable, with a connection at the end remote from the fan to enable the Inspector to attach thereto any instrument necessary for ascertaining the pressure of air in the said duct; and
- (c) a fan or other efficient means of producing a draught sufficient to extract the dust:

Provided that the Chief Inspector may accept any other appliance that is, in his opinion, as effectual for the interception, removal and disposal of dust thrown off as a hood, duct and fan would be.

3. *Restriction on employment on grinding operations.*- Not more than one person shall at any time perform the actual process of grinding or glazing upon a grindstone, abrasive wheel or glazing appliance.

4. *Glazing.*- Glazing or other processes, except processes incidental to wet grinding upon a grindstone shall not be carried on in any room in which wet grinding upon a grindstone is done.

5. *Hacking and Roding.*- Hacking or Roding shall not be done unless during the process either an adequate supply of water is laid on at the upper surface of the grindstone or adequate appliances for the interception of dust are provided in accordance with the requirements of paragraph 2.

6. *Examination of dust equipment.* – (1) All equipment for the extraction or suppression of dust shall all least once in every six months be examined and tested by a competent person, and any defect disclosed by such examination and test shall be rectifies as soon as practicable.

(2). A register containing particulars of such examination and test shall be kept in Form No. 28.

7. *Exception.*- (1) Nothing in this Schedule shall apply to any factory in which only repairs are carried on except any part thereof in which one or more persons are wholly employed in the grinding or glazing of metals.

(2) Nothing in this Schedule except paragraph 3 shall apply to any grinding or glazing of metals carried on intermittently and at which no person is employed for more than 12 hours in any week.

8. *Exemption.* \_ The Chief Inspector may by certificate in writing, subject to such conditions as he any specify therein, relax or suspend any of the provisions of the Schedule in respect of any factory if owing to the special methods of work or otherwise such relaxation or suspension is practicable without danger to the health or safety of the persons employed.

## SCHEDULE VI

### **Manufacture and treatment of lead and certain compounds of lead**

1. *Application.* – This Schedule in which shall apply to all factories or parts of factories in which any of the following operations are carried on:-

- (a) work at a furnace where the reduction or treatment of zinc or lead is carried on;
- (b) the manipulation, treatment or reduction of ashes containing lead, the delivering of lead or the melting of scrap lead or zinc.
- (c) The manufacture of solder or alloys containing more than ten per cent of lead,
- (d) The manufacture of any oxide, carbonate, sulphate, chromate, acetate, nitrate or silicate of lead;
- (e) The handling or mixing of lead tetra-ethyl;
- (f) Any other operation involving the sue of a lead compound; and
- (g) The cleansing of workrooms where any of the operations aforesaid are carried on.

2. *Definitions.*- For the purpose of this Schedule –

- (a) “lead compound” means any compound of lead other than galena which, when treated in the manner described below, yields to an aqueous solution of hydrochloric acid, a quantity of soluble lead compound exceeding, when calculated as

lead monoxide, five percent of the “dry weight” of the portion taken for analysis. In the case of paints and similar products and other mixtures containing oil or fat “dry weight” means the dry weight of the material remaining after the substance has been thoroughly mixed and treated with suitable solvents to remove oil, fats, varnish or other media.

The method of treatments shall be as follows:-

A weighed quantity of the material which has been dried at 100 C and thoroughly mixed shall be continuously shaken for one hour, at the common temperature with 1,000 times its weight of an aqueous solution of hydrochloric acid containing 0.25 per cent by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered.

The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighed as lead sulphate;

- b) “efficient exhaust draught” means localised ventilation affected by heat or mechanical means, for the removal of gas, vapour, dust or fumes so as to prevent them (as far as practicable under the atmospheric conditions usually prevailing ) from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove smoke generated at the point where such gas, vapour, fumes or dust originate.

3. *Prohibition relating to woman and young persons.*- No women or young person shall be employed or permitted to work in any of the operations specified in paragraph 1.

4. *Requirements to be observed.* - No person shall be employed or permitted to work in any process involving the use of lead compound if the process is such that dust or fumes from a lead compound is produced therein, or the persons employed therein, or the persons employed therein are liable to be splashed their any lead compound in the course of their employment unless the provisions of paragraph 5 to 13 are complied with.

5. *Exhaust draught.* - Where dust, fume, gas or vapour is produced in the process, provision shall be made for removing them by means as to operate on the dust, fume, gas or vapour as closely as possible to the point of origin.

6. *Food, drinks, etc. prohibited in workroom.* – No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any workroom in which the process is carried in and no person shall remain in any such room during intervals for meals or rest.

7. *Protective clothing.*- Suitable protective overalls and head coverings shall be provided, maintained and kept clean by the occupier and such overalls and head coverings shall be worn by the persons employed.

8. *Cleanliness of work-rooms, tools, etc.*- The rooms in which the persons are employed and all tools and apparatus used by them shall be kept in a clean state.

9. *Washing facilities.* – (1) The occupier shall provide and maintain for the use of all persons employed suitable washing facilities consisting of :

- (a) a trough with a smooth impervious surface fitted with a waste pipe without plug and of sufficient length to allow at least 60 centimeters for every ten persons employed at any one time, and having a constant supply of clean water from taps or jets above the trough at intervals of not more than 60 centimeters; or

- (b) at least one wash-basin for every ten persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of clean water; together with, in either case, a sufficient supply of nail brushed, soaps or other suitable cleansing material and clean towels.

(2). The facilities so provided shall be places under the charge of a responsible person and shall be kept clean.

10. *Messroom or canteen.* – The occupier shall provide and maintain for the use of the persons employed suitable and adequate arrangements for taking meals. The arrangements shall consist of the use of a room separate from any workroom which shall be furnished with sufficient tables and benches and unless a canteen serving hot meals is provided, adequate means or warming the food. The room shall be adequately ventilated by the circulation of fresh air, shall be placed under the charge of a responsible person and shall be kept clean.

11. *Cloakroom.*- The occupier shall provide and maintain for the use of persons employed, suitable accommodation for clothing not worn during working hours, and for the drying a wet clothes.

12. *Certificate of fitness.*- A person medically examined under paragraph 13 and found fit for employment shall be granted by the Certifying Surgeon a certificate of fitness in Form No. 26 and such certificate shall be in the custody of the manager of the factory. The certificate shall be kept readily available for inspection by any Inspector and the person granted such a certificate shall carry with him, while at work, a token giving reference to such certificate.

13. *Medical examination.*- (1) The person so employed shall be medically examined by the Certifying Surgeon within 14days of his first employment in such process and thereafter he shall be examined by the Certifying Surgeon at intervals of not more than 3 months, and a record of such examination shall be entered by the Certifying Surgeon in the special certificate of fitness granted under paragraph 12.

(2). If at any time in Certifying Surgeon is of opinion that any person is no longer fit for employment on the grounds that continuance therein would involve special danger to his health, he shall cancel the special certificate of fitness of that person.

(3). No person whose special certificate of fitness has been cancelled shall be employed unless the Certifying Surgeon, after re-examination, again certifies him to be fit for employment.

14. *Exemption.*- Where the Chief Inspector is satisfied that all or any of the provisions of this Schedule are not necessary for the protection of the persons employed, he may be certificate in writing exempt any factory from all or any of such provision, subject to such conditions as he may be specify.

## SCHEDULE VII

### **Generating petrol, gas from petrol**

1. *Prohibition relating to women and young persons.* - No woman or young person shall be employed or permitted to work in or shall be allowed to enter any building in which the generation of gas from dangerous petroleum as defined in clause (b) of Section 2 of the Petroleum Act, 1934, is carried on.

2. *Flame traps.* – The plant for generation of gas from dangerous petroleum and associated piping and fittings shall be fitted with at least two efficient flame traps so designed and maintained as to prevent a flash back from any burner to the plant. One of these traps shall be fitted as close to the plant as possible. The plant and all pipes and valves shall be installed and maintained free from leaks.

3. *Generating building or room.* - All plants for generation of gas from dangerous petroleum erected after the coming into force of the provisions specified in this schedule, shall be erected outside the factory building proper in a separate well ventilated building (hereinafter referred to as the “generating building”). In the case of such plants erected before the coming into force of the provisions specified in this Schedule, there shall be no direct communication between the room where such plants are erected (hereinafter referred to as the “generating room”) and the remainder of the factory building. So far as practicable, all such generating rooms shall be constructed of fire-resisting materials.

Provided that where the Government is satisfied in respect of any factory that the plant for generating of gas from dangerous petroleum as defined in clause (b) of Section 2 of the Petroleum Act, 1934, is no account of the special precautions adopted or contrivances used for such plant, not likely to expose any persons employed in such factory to any serious risk of bodily injury, the Government may, by notification on the Official Gazette, exempt such factory wholly or partially from the provisions of this clause for such period and on such conditions as it may specify.

4. *Fire extinguishers.*- An efficient means of extinguishing petrol fires shall be maintained in an easily accessible position near the plant for generation of gas from dangerous petroleum.

5. *Plant to be approved by Chief Inspector.* – Petrol gas shall not be manufactured except in a plant for generation petrol gas, the design and construction of which has been approved by the Chief Inspector.

6. *Escape of petrol.*- Effective steps shall be taken to prevent petrol from escaping into any drain or sewer.

7. *Prohibition relating to smoking.*- No person shall smoke or carry matches, fire or naked light or other means of producing a naked light or spark in the generation room or building or in the vicinity thereof and a warning notices in the language understood by the majority of the workers shall be posted in the factory prohibiting smoking and the carrying of matches, fire or naked light or other means of producing a naked light or spark into such room or building.

8. *Access to petrol or container.*- No unauthorised person shall have access to any petrol or to a vessel containing or having actually contained petrol.

9. *Electric fitting.*- All electric fittings shall be of flameproof construction and all electric conductors shall other be enclosed in metal conduits or be lead-sheathed.

10. *Construction of doors.*- All doors in the generating room or building shall be constructed to open outwards or to slide and no door shall be locked or obstructed or fastened in such a manner that it cannot be easily and immediately opened from the inside while gas is being generated and any person is working in the generating or building.

11. *Repair of containers.*- No vessel that has contained petrol shall be repairs in a generating room pr building and no repairs to any such vessel shall be undertaken unless live steam has been blown into the vessel and until the interior is thoroughly steamed out or other equally effective steps have been taken to ensure that it has been rendered free from petrol or

inflammable vapour.

## SCHEDULE VIII

### **Cleaning or smoothing, roughing, etc, of articles, by a jet of sand, metal shot, or grit, or other abrasive propelled by a blast of compressed air or steam.**

1. *Definitions.*- For the purposes of this Schedule –

- (a) “blasting” means cleaning, smoothing, roughing or removing of any part of the surface of any article by the use as an abrasive of a jet of sand, metal shot or grit or other material propelled by a blast of compressed air or steam.
- (b) “blasting enclosure” means a chamber, barrel, cabinet or any other enclosure designed for the performance of blasting therein.
- (c) “blasting chamber” means a blasting enclosure in which any person may enter at any time in connection with any work or otherwise; and
- (d) “cleaning of castings” where done as an incidental or supplemental process in connection with the making of metal castings, means the freeing of the casting from adherent sand or other substance and includes the removal of cores and the general smoothing of a casting, but does not include free treatment.

2. *Prohibition of sand blasting.*- Sand or any other substance containing free silica shall not be introduced as an abrasive into any blasting apparatus and shall not be used for blasting:

Provided that this clause shall come into force two years after the coming into operation of these rules:

Provided further that no woman or young person shall be employed or permitted to work at any operation of sand blasting.

3. *Precautions in connection with blasting operations.*- (i) Blasting to be done in blasting enclosure-

Blasting shall not be done except in blasting enclosure and no work other than blasting and any work immediately incidental thereto and clearing and repairing of enclosure including the plant and appliances situated therein, shall be performed in a blasting enclosure. Every door, aperture and joint of blasting enclosure shall be kept closed and airtight while blasting is being done therein.

(ii) Maintenance of blasting enclosure-

Blasting enclosure shall always be maintained in good condition and effective measures shall be taken to prevent dust escaping from such enclosure, and from apparatus connected therewith, into the air of any room.

(iii) Provision of separating apparatus-

There shall be provided and maintained for and in connection with every blasting enclosure, efficient apparatus for separating, so far as practicable, abrasive which has been used again as an abrasive, from dust or particles of other materials arising from blasting; and no such abrasive shall be introduced into any blasting apparatus and used for blasting until it has been so separated.

Separating apparatus shall be provided with exhaust draught arrangement to extract and remove the dust by special methods and in such manner so that it shall not escape into air of

any rooms in which persons are employed.

Provided that this clause shall not supply, except in the case of blasting chambers, to blasting enclosures constructed or installed before the coming into force of this Schedule, if the Chief Inspector is of opinion that it is not reasonably practicable to provide such separating apparatus.

(iv) Provision of ventilating plant.-

There shall be provided and maintained in connection with every blasting enclosure efficient ventilating plant to extract, by exhaust draught effected by mechanical means, dust produced in the enclosure. The dust extracted and removed shall be disposed of by such method and in such manner that it shall not escape into the air of any room, and every other filtering or settling device situated in a room in which persons are employed, other than persons attending to such bag or other filtering or setting device, shall be completely separated from the general air of that room in a enclosure ventilated to the open air.

(v) Operation of ventilating plant-

The ventilating plant provided for the purpose of sub-paragraph (4) shall be kept in continuous operation whenever the blasting enclosure is in use whether or not blasting is actually taking place therein and in the case of a blasting chamber, it shall be in operation even when any person is inside the chamber for the purpose of cleaning.

4. *Inspection and examination.*- (1) Every blasting enclosure shall be specially inspected by a competent person at least once in every week in which it is used for blasting. Every blasting enclosure, the apparatus connected therewith and the ventilating plant shall be thoroughly examined and in the case of ventilating plant, tested by a competent person at least once in every three months.

(2) Particulars of the result of every such inspection, examination or test shall forthwith be entered in a register which shall be kept in a form approved by the Chief Inspector and shall be available for inspection by any workman employed in connection with blasting in the factory. Any defect found on any such inspection, examination or test shall be immediately reported by the person carrying out the inspection, examination or test to the occupier, manager or other appropriate person and without prejudice to the foregoing requirements of this Schedule, shall be removed without available delay.

(3) Every blasting chamber, separating apparatus and ventilating plant shall be thoroughly inspected at an interval of 6 months for detecting any defect in their efficient operations, and the defects so noticed shall be rectified forthwith.

5. *Provision of protective helmets, gauntlets and overalls.*- (1) There shall be provided and maintained for the use of all persons who are employed in a blasting chamber, whether in blasting or in any work connected therewith or in cleaning such a chamber, protective helmets of a type approved by a certificate of the Chief Inspector; and every such person shall wear the helmet provided for this use whilst he is in the chamber and shall not remove until he is outside the chamber.

(2) Each protective helmet shall carry a distinguishing mark indicating the person by whom it is intended to be used and no person shall be allowed or required to wear a helmet not carrying his mark or a helmet which has been worn by another person and has not since been thoroughly disinfected.

(3) Each protective helmet when in use shall be supplied with clean and not unreasonably cold air at a rate of not less than 170 litres per minute.

(4) Suitable gauntlets, overalls, dust-proof goggles and boots shall be provided for the use of all persons while performing blasting or assisting at blasting and every such person shall while so engaged, wear the gauntlets, overalls, dust-proof goggles and boots so provided.

6. *Precautions in connection with cleaning and other work.*- (1) Where any person is engaged upon cleaning of any blasting apparatus or blasting enclosure or of any blasting apparatus or blasting enclosure or of any apparatus or ventilating plant connected therewith or the surroundings thereof or upon any other work in connection with any blasting apparatus or blasting enclosure or with any apparatus or ventilating plant connected therewith so that he is exposed to the risk of inhaling dust which has arisen from blasting, all practicable measure shall be taken to prevent such inhalation.

(2) In connection with any cleaning operation referred to in paragraph 5, and with the removal of dust from filtering or settling devices all practicable measures shall be taken to dispose of the dust in such a manner that it does not enter the air of any room. Vacuum cleaners shall be provided and used wherever practicable for such cleaning operations.

7. *Storage accommodation for protective wear.*- Adequate and suitable storage accommodation for the helmets, gauntlets and overalls required to be provided by paragraph 5 shall be provided outside and conveniently near to every blasting enclosure and such accommodation shall be kept clean. Helmets, gauntlets and overalls when not in actual use shall be kept in this accommodation.

8. *Maintenance and cleaning of protective wear* - All helmets, gauntlets, overalls and other protective devices or clothing provided and worn for the purposes of this schedule, shall be cleaned on every weekday in which they are used. Where dust arising from the taken to prevent such protective clothing or devices is likely to be inhaled, all practicable measures shall be taken to prevent such inhalation. Vacuum cleaners shall, wherever practicable be used for removing dust from such clothing and compressed air shall not be used for removing dust from any clothing.

9. *Maintenance of vacuum cleaning plant.* – Vacuum cleaning plant used for the purpose of this Schedule shall be properly maintained.

10. *Restriction in employment of young persons.* – No woman or young person under 18 years of age shall be employed in blasting or assisting at blasting or in blasting chamber or in the cleaning of any blasting apparatus or any blasting enclosure or any apparatus or ventilating plant connected therewith or be employed on maintenance or repair work at such apparatus, enclosure or plant

(2) No woman or young person under 18 years of age shall be employed to work regularly within twenty feet of any blasting enclosure unless the enclosure is in a room and he is outside that room where he is effective separate from any dust coming from the enclosure.

11. *Medical examination.* – (1) Every person employed in blasting or assisting at blasting or in any blasting chamber or in the cleaning of any blasting apparatus or any blasting enclosure or any apparatus or ventilating plant connected therewith or be employed on maintenance or repair work at such apparatus, enclosure or plant, shall be medically examined by the Certifying Surgeon within thirty days of his first employment, the record of which shall be entered in Form No.7, and if found fit for employment in the said process, he shall be granted by the

Certifying Surgeon, a certificate of fitness in Form No. 26.

(2) After the first examination, the person so examined shall be examined by the Certifying Surgeon at intervals of twelve months and a record of such examinations shall be entered by the Certifying Surgeon in Form no. 7.

(3) If at any time the Certifying Surgeon is of the opinion that the person employed in the said process shall be examined radiological by a qualified radiologist, he may direct the occupier to arrange for such examination at his cost and then to submit the standard size chest X-Ray plate of the worker to the Certifying Surgeon.

(4) If at any time the Certifying Surgeon is of the opinion that any person is no longer fit for employment on the grounds that continuance therein would involve special danger to health, he shall cancel the special certificate of fitness in Form No. 26 of that person and record in Form No. 7

(5) No person whose special certificate of fitness in Form No. 26 has been cancelled, shall be employed or permitted to work unless the Certifying Surgeon, after re-examination, again certifies him to be fit for employment in the operations.

(6) The register of the special certificate in Form No. 26 granted by the Certifying Surgeon and the record made in Form No. 7 by him shall be in the custody of the manager of the factory and shall be kept readily available for inspection by an Inspector.

12. *Power to exempt or relax.* – (1) If the Chief Inspector is satisfied that in any factory or any class of factory, the use of sand or other substance containing free silica as an abrasive in blasting is necessary for a particular manufacture or process (other than the process incidental or supplemental to making of metal castings) and that the manufacture or process cannot be carried on without the use of such abrasive or that owing to the special conditions or special method of work or otherwise any requirement of this Schedule can be suspended either temporarily or permanently, or can be relaxed without endangering the health of the persons employed or that application of any such requirements is for any reason impracticable or inappropriate, he may, with the previous sanction of the State Government, by an order in writing exempt the said factory or class of factory from such provisions of this Schedule, to such an extent and subject to such conditions and for such period as may be specified in the said order.

(2) Where an exemption has been granted under sub-paragraph (1), a copy of the order shall be displayed at a notice board at a prominent place at the main entrance or entrances to the factory and also at the place where the blasting is carried on.

## SCHEDULE IX

### **Liming and tanning of raw hides and skins and processes incidental thereto**

1. *Cautionary notices.* – (1) Cautionary notices as to anthrax in the form specified by the chief Inspector shall be affixed in prominent positions in the factory where they may be easily and conveniently read by the persons employed.

(2) A copy of a warning notice as to anthrax in the form specified by the Chief Inspector shall be given to each person employed when he is engaged, and subsequently if still employed, on the first day of each calendar year.

(3) Cautionary notices as to the effects of chrome on the skin shall be affixed in prominent positions in every factory in which chrome solutions are used and such notices shall be so placed as to be easily and conveniently read by the persons employed.

(4) Notices shall be affixed in prominent places in the factory stating the position of the first-aid box or cupboard and the name of the person in charge of such box or cupboard.

(5) If any person employed in the factory is illiterate, effective steps shall be taken to explain carefully to such illiterate person the contents of the notice specified in sub-paragraphs (1) , (2) and (4) and if chrome solutions are used in the factory, the contents of the notice specified in sub-paragraph (3).

2. *Protective clothing.* – The occupier shall provide and maintain in good condition the following articles of protective clothing –

- (a) waterproof footwear leg coverings, aprons and gloves for persons employed in processes involving contact with chrome solutions, including the preparation of such solutions;
- (b) gloves and boots for persons employed in lime yard; and
- (c) protective footwear, aprons and gloves for persons employed in processes involving the handling of hides or skins, other than in processes specified in sub-paragraphs (a) and (b) :

Provided that the gloves aprons, leg coverings or boots may be of rubber, or leather, but the gloves and boots to be provided under sub-paragraphs (a) and (b) shall be of rubber :

Provided further that the gloves may not be provided to persons fleshing by hand or employed in processes in which there is no risk of contact with lime, sodium sulphide or other caustic liquor.

3. *Washing facilities, mess room and cloakroom.* – There shall be provided and maintained in a clean state and in good repair for the use of all persons employed –

- (a) a trough with a smooth impervious surface fitted with a waste pipe without plug; and of sufficient length to allow of a least 60 centimeters for every ten persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 60 centimetres; or at least one wash basin for every ten such persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of water ; together with, in either case, a sufficient supply of nail brushes, soap or other suitable cleansing material and clean towels ;
- (b) a suitable mess room, adequate for the number remaining on the premises during the meal intervals, which shall be furnished with sufficient tables and benches and adequate means for warming food and boiling eater. The mess room shall-
  - (i) be separate from any other room or shed in which hides or skins are stored, treated or manipulated;
  - (ii) be separate from the cloakroom; and
  - (iii) be placed under the charges of a responsible person; and
- (c) suitable accommodation for clothing put off during working hours and another accommodation for protective clothing and also adequate arrangements for drying up to the clothing in both the cases, if wet. The accommodation so provided shall be kept

clean at all times and places under the charge of a responsible person.

4. *Food, drinks, etc. prohibited in workrooms.*- No food, drinks, pan and supari or tobacco shall be brought into or consumed by any worker in workroom or shed in which hides or skins are stored, treated or manipulated.

5. *First-aid arrangements.*- The occupier shall-

- (a) arrange for an inspection of the hands of all persons coming into contact with chrome solution to be made twice a week by a responsible person and
- (b) provided and maintained a sufficient supply of suitable ointment and impermeable waterproof plaster in a readily accessible to the worker and used solely for the purpose of keeping the ointment and plaster.

## SCHEDULE X

### **Printing Presses and Type Foundries and certain lead processes carried therein.**

1. *Definitions.*- For the purposes of this Schedule –

- (a) “lead material” means material containing not less than five per cent of lead;
- (b) “Lead process” means-
  - (i) the melting of lead or any lead material for casting and mechanical composing;
  - (ii) the recharging of machines with used lead material;
  - (iii) any other work including removal of dross from melting pots and cleaning of plungers; and
  - (iv) manipulation, movement or other treatment of lead material.
- (c) “efficient exhaust draught” means localised ventilation effected by heat or mechanical means, for the removal of gas, vapour, dust or fumes so as to prevent them from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove gas, vapour, fume or dust at the point where they originate.

2. *Exhaust draught.*-

(1) None of the following processes shall be carried on except with an efficient exhaust draught unless carried on in such a manner as to prevent free escape of gas, vapour, fumes or dust into any place in which work is carried on, or unless carried on electrically heated and thermostically controlled melting pots:-

- (a) melting lead material or slugs and
- (b) heating lead material so that vapour containing lead is given off.

(2) Such exhaust draught shall be effected by mechanical means and so contrived as to operate on the dust, fume, gas or vapour given off as closely as may be at its point of origin.

3. *Prohibition relating to women and young persons.*- No woman or person below 18 years of age shall be employed or permitted to work in any lead process.

4. *Separation of certain processes.*- Each of the following processes shall be carried on in such a manner and under such conditions as to secure effectual separation from one another and from any other processes:-

- (a) melting of lead or any lead material
- (b) casting of lead ingots; and
- (c) mechanical composing.

5. *Container for dross.* – A suitable receptacle with tight fitting cover shall be provided and used for dross as it removed from every melting pot. Such receptacle shall be kept covered while in the workroom near the machine except when the dross is being deposited therein.

6. *Floor of workroom.*- The floor of every work-room where lead process is carried on shall be-

- a) of cement or similar material so as to be smooth and impervious to water.
- b) Maintained in sound condition; and
- c) Shall be cleansed thoroughly daily after being thoroughly damped with water at a time when no other work is being carried on at the place.

7. *Mess room.*- There shall be provided and maintained for the use of all persons employed in a lead process and remaining in the premises during the meal interval, a suitable mess room which shall be furnished with sufficient tables and benches.

8. *Washing facilities.*- There shall be provided and maintained in a clean state and in a good repair for the use of all persons employed in a lead benches.

- a) a wash place with either-
  - (i) a trough with a smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow at least 60 centimeters for every five such persons employed at any one time and having a constant supply of water from taps or jets above the trough at intervals of not more than 60 centimeters.
  - (ii) at least one wash basin for every five such persons employed at any one time fitted with a waste pipe and plug and having an adequate supply of water laid on or always readily available; and
- (b) a sufficient supply of clean towels made of suitable material, renewed daily with a sufficient supply of soap or other suitable cleansing material.

9. *Food, drinks, etc. prohibited in workrooms.*- No food, drink, pan and supari or tobacco shall be consumed or brought by any worker into any workroom in which any lead process is carried on.

10. *Medical examination.*-

(1) Every person employed in a lead process shall be examined by the Certifying Surgeon within 14 days of his first employment in such processes and thereafter shall be examined by the Certifying Surgeon at intervals of not more than 3 months, and a record of such examinations shall be entered by the Certifying Surgeon in the special certificate of fitness in Form No. 26.

(2) A health register containing names of all persons employed in any lead process shall be kept in Form 7.

(3) No person after suspension shall be employed in a lead process without the written sanction from the Certifying Surgeon entered in the health register.

11. *Exemption.*- Where the Chief Inspector is satisfied that all or any of the provisions of this Schedule are not necessary for the protection of persons employed, he may by certificate in writing exempt any factory from all or any of such provisions subject to such conditions as he may specify therein. Such certificate may at any time be revoked by the Chief Inspector.

## SCHEDULE XI

### Manufacture of pottery

1. *Savings.*- These provisions shall not apply to a factory in which any of the following articles, but no other pottery are made:-

- (a) unglazed or salt glazed bricks and tiles; and
- (b) architectural terra-cotta made from plastic clay and either unglazed or glazed with a leadless glaze only.

2. *Definitions.*- For the purposes of this Schedule –

- (a) “potter” includes earthenware, stoneware, porcelain, china tiles, and any other articles made from such clay or from a mixture containing clay and other materials such as quartz, flint, feldspar and gypsum;
- (b) “efficient exhaust draught” means localised ventilation effected by mechanical or other means for removal of dust or fume so as to prevent it from escaping into air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove effectively dust or fume generated at the point where dust or fume originates;
- (c) “fettling” includes scalloping, towing, sand papering, sand stocking, brushing or any other process of cleaning of pottery ware in which dust is given off;
- (d) “leadless glaze” means a glaze which does not contain more than one per cent of its dry weight, of a lead compound calculated as lead monoxide;
- (e) “low solubility glaze” means a glaze which does not yield to dilute hydrochloric acid more than five per cent of its dry weight, of a soluble lead compound calculated as lead monoxide when determined in the manner described below:

A weight quantity of the material which has been fired at 100 degrees centigrade and thoroughly mixed shall be continuously shaken for one hour at the common temperature with 100 times weight of an aqueous solution of hydrochloric acid containing 0.25 per cent by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighed as lead sulphate;

- (f) “ground or powdered flint or quartz” does not include natural sands’ and
- (g) “potter’s shop” includes all places where pottery is formed by pressing or by any other process and all places where shaping, felting or other treatment of pottery articles prior

to placing for the biscuit fir is carried on.

3. *Efficient exhaust draught.*- The following processes shall not be carried on without the use of an efficient exhaust draught:-

- (a) all processes involving the manipulation or use of a dry and unfretted lead compound;
- (b) fettling operations of any kind, whether on green ware or biscuit, provided that this shall not apply to the wet fettling and to the occasional finishing of pottery articles without the aid of mechanical power;
- (c) shifting of clay dust as any other material for making tiles or other articles by pressure, except where-
  - (i) this is done in a machine so enclosed as to effectually prevent the escape of dust; or
  - (ii) the material to be shifted is so damp that no dust can be given off;
- (d) pressing of tiles from clay dust, an exhaust opening being connected with each press, and pressing from clay dust of articles other than tiles, unless the material is so damped that no dust is given off;
- (e) fettling of tiles made from clay dust by pressure, except where the fettling is done wholly on, or with, damp material, and fettling of other articles made from clay dust, unless the material is so damp that no dust is given off;
- (f) process of loading and unloading of saggars where handling and manipulation of ground powdered flint, quartz, alumina or other material involved.
- (g) brushing of earthenware biscuit, unless the process is carried on in a room provided with efficient general mechanical ventilation or other ventilation which is certified by the Inspector of Factories as adequate having regard to all the circumstances of the case;
- (h) fettling of biscuit wear which has been fixed in powdered flint or quartz except where this is done in machines so enclosed as to effectually prevent the escape of dust;
- (i) where cleaning after the application of glaze is done by dipping or other process;
- (j) crushing and dry grinding of materials for pottery bodies and saggars, unless carried on in machines so enclosed as to effectively prevent the escape of dust or is so damp that no dust can be given off;
- (k) sieving or manipulation of powdered flint, quartz, clay grog or mixture of these materials unless it is so damp that no dust can be given off;
- (l) grinding of tiles on a power driven wheel unless an efficient water spray is used on the wheel;
- (m) lifting and conveying of materials by elevators and conveyers unless they are effectively enclosed and so arranged as to prevent escape of dust into the air in or near to any place in which persons are employed.
- (n) Preparation or weighing out of low material lawning of dry colour dusting and colour blowing;
- (o) mould making unless the bins or similar receptacles used for holding plaster of paris are provided with suitable covers; and

- (p) Manipulation of calcined material unless the material has been made and remains so wet that no dust is given off.

4. *Separation of processes.*- Each of the following processes shall be carried on in such a manner and under such conditions as to secure effectual separation from one another, and from other wet processes:-

- (a) crushing and dry grinding or sieving of materials, fettling, pressing of tiles, drying of clay and green ware, loading and unloading of saggars; and  
(b) all processes involving the use of a dry lead compound.

5. *Prohibition on use of glaze.* - No glaze which is not a leadless glaze of a low solubility glaze shall be used in a factory in which pottery is manufactured.

6. *Prohibition relating to women and young persons.*- No women or person below 18 years shall be employed or permitted to work in any of the operations specified in paragraph 4, or at any place where such operations are carried on.

7. *Provision of screen to potter's wheel.*- The potter's wheel (Jolly and Jigger) shall be provided with screens or so constructed as to prevent clay scrapings being thrown off beyond the wheel

8. *Controls of dust during cleaning.*- (1) All practical measures shall be taken by damping or otherwise to prevent dust arising during cleaning of floors.

(2) Damp saw-dust or other suitable materials shall be used to render the moist method effective in preventing dust rising into the air during the cleaning process which shall be carried out after work has ceased.

9. *Floor of certain workrooms.*- The floors of potter's shops slip houses, dipping houses and ware cleaning rooms shall be hard, smooth and impervious and shall be thoroughly cleaned daily by an adult male using a most method.

10. *Protective equipment.*- (1) The occupier shall provide and maintain suitable overalls and head coverings for all persons employed in process included under paragraph 3.

(2) The occupier shall provide and maintain suitable aprons of a waterproof or similar material, which can be sponged daily for the use of the dippers, dippers assistants, throwers, jolly workers, casters mould makers and filter press and plug mill workers.

(3) Aprons provided in pursuance of paragraph 10(2) shall be thoroughly cleaned daily by the wearers by sponging or other wet process. All overalls and heads coverings shall be washed, cleaned and mended at least once a week, and this washing, cleaning or mending shall be provided for by the occupiers.

(4) No person shall be allowed to work in emptying sacks of dusty material, weighing out and mixing of dusty materials and charging of ball mills and plungers without wearing a suitable and efficient dust respirator.

11. *Washing facilities.*- (1) The occupier shall provide and maintain, in a clean state and in good repair for the use of all persons employed in any of the processes specified in paragraph 3-

- (a) a washing place under cover with either-

- (i) a trough with smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow at least 60 centimeters for every five such persons employed at the one time, and having a constant supply of clean water from taps or jets above the trough at intervals of not more than 60 centimeters; or
  - (ii) at least one tap or stand pipe for every five such persons employed at any one time, and having a constant supply of clean water, the tap or stand pipe being spaced not less than 120 centimeters apart; and
- (b) a sufficient supply of clean towels made of suitable material changed daily, with sufficient supply of nail brushes and soap.

12. *Time allowed for washing.* – Before each meal and before the end of the day's work, at least ten minutes, in addition to the regular meal times, shall be allowed for washing to each person employed in any of the processes mentioned in paragraph 3.

13. *Messroom.* – There shall be provided and maintained for use of all persons remaining within the premises during the rest intervals, a suitable messroom providing accommodation of 0.93 square metres per head and furnished with –

- (a) a sufficient number of tables and chairs or benches with back rest;
- (b) arrangements for washing utensils;
- (c) adequate means for warming food; and
- (d) adequate quantity of drinking water.

(2) The room shall be adequately ventilated by the circulation of fresh air and placed under the charge of a responsible person and shall be kept clean.

14. *Food, drinks, etc. prohibited in workrooms.* – No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any workroom in which any of the processes mentioned in paragraph 3 are carried on and no person shall remain in any such room during intervals for meals and rest.

15. *Cloakroom, etc.* – There shall be provided and maintained for the use of all persons employed in any of the processes mentioned in paragraph 3 –

- (a) a cloakroom for clothing put off during working hours and such accommodation shall be separate from any messroom; and
- (b) separate and suitable arrangement for the storage of protective equipment provided under paragraph 10.

16. *Medical examination.* – 1) All persons employed in any process included under paragraph 3 shall be examined by the Certifying Surgeon within 7 days preceding or following the date of their first employment in such process; thereafter all persons employed in any process included under sub-paragraphs 3 (I) and (xiv) shall be examined by the Certifying Surgeon once in every three calendar months, and those employed in any process included in sub-paragraphs (ii) to (xii) (xv) and (xvi) of paragraphs 3 once in every 12 months by the Certifying Surgeon. Records of such examinations shall be entered by the Certifying Surgeon in the health register and certificate of fitness granted to him under paragraph 17.

(2) If at any time the Certifying Surgeon is of opinion that any person employed in any process included in paragraph 3 is no longer fit for employment on the ground that continuance

therein would involve danger to his health, he shall cancel the certificate to fitness granted to that person.

(3) No person whose certificate of fitness has been cancelled shall be re-employed unless the Certifying Surgeon after re-examination, again certifies him to be fit for employment.

17. *Certificate of fitness.* – A person medically examined under paragraph 16 and found fit for employment shall be granted by the Certifying Surgeon a certificate of fitness in Form No 26 and such certificate shall be in the custody of the manager of the factory. The certificate shall be kept readily available for inspection by any Inspector and the person granted such a certificate shall carry with him while at work a token giving reference to such certificate.

18. *Exemption.* – If in respect of any factory the Chief Inspector of Factories is satisfied that all or any of the provisions of this Schedule are not necessary for the protection of the persons employed in such factory, he may by a certificate in writing exempt such factory from all or any of such provisions, subject to such conditions as he may specify therein. Such certificate may at any time be revoked by the Chief Inspector without assigning any reasons.

## SCHEDULE XII

### Chemical works

1. *Application.* – This Schedule shall apply to all manufactures and processes incidental thereto carried on in chemical works.

2. *Definitions.* - For the purposes of this Schedule –

- (a) “chemical works” means any factory or such parts of any factory as are named in appendix A to this Schedule;
- (b) “breathing apparatus” means (i) a helmet or facepiece with necessary connections by means of which a person using it in a poisonous, asphyxiating or irritant atmosphere breathes ordinary air, or (ii) any other suitable apparatus approved in writing by the Chief Inspector;
- (c) “lifebelt” means a belt made of leather or other suitable material which can be securely fastened round the body, with a suitable length of rope attached to it, each of which is sufficiently strong to sustain the weight of a man;
- (d) “efficient exhaust draught” means localised ventilation effected by mechanical or other means for the removal of gas, vapour, fume or dust to prevent it from escaping into the air if any place in which work is carried on ;
- (e) “suspension” means suspension by written certificate in the health register, signed by the surgeon, from employment in any process mentioned in the certificate;
- (f) “bleaching powder” means the bleaching powder commonly called chloride of lime;
- (g) “chlorate” means chlorate or perchlorate;
- (h) “caustic” means hydroxide of potassium or sodium;
- (i) “caustic pot” means a metal pot fixed over a furnace or flue and surrounded by brickwork, such as is commonly used for concentrating caustic liquor, whether such pot be used for concentrating or boiling caustic or other liquor;

- (j) “chrome process” means the manufacture of chromate or bichromate of potassium or sodium, or the manipulation, movement or other treatment of these substances in connection with their manufacture; and
- (k) “nitro or amido process” means the manufacture of nitro or amido derivatives of phenol and of benzene or its homologues, and the making of explosive with the use of any of these substances.

## PART I

### **Applying to all the workers in Appendix A**

#### A – GENERAL

3. *Housekeeping* . – (1) Every part of the path-ways, works, machinery and plant shall be maintained in a clean and tidy condition.

(2) Any spillage of materials shall be cleaned up without delay.

(3) Floors, platforms, stairways, passages and gangways shall be kept free of temporary obstructions.

(4) There shall be provided easy means of access to all parts of the plant to facilitate cleaning, maintenance and repairs thereof.

4. *Improper use of chemicals*. – (1) No chemicals or solvents shall be used by workers for any purposes apart from the processes for which they are supplied.

(2) Workers shall be instructed on the possible dangers arising from such misuse. These instructions shall further be displayed in bold letters in prominent places in the different sections.

5. *Storage of food*. – No food, drink tobacco, pan or similar article shall be stored or consumed on or near any part of the plant.

6. *Testing of materials*. – Workers shall be instructed on the possible dangers arising from the testing of materials, or of the use for drinking purposes of any vessel used in or in connection with, the manufacture of chemicals. These instructions shall further be displayed in bold letters in prominent places in the different sections of the factory or plant.

7. *Process hazards*. – (1) Before commencing any large scale experimental work, or any new manufacture, all possible steps shall be taken to ascertain definitely all the hazards involved both from the actual operations and the chemical reactions thereunder. The properties of the raw materials used, the final products to be made, and any by-products arising during manufacture, shall be carefully studied and provisions shall be made for dealing with any hazards including effects on workers, which may arise during manufacture. Where necessary, advice shall be obtained from the Chief Inspector of factories on measures to be taken in this regard.

(2) Information in writing giving details of the process, its hazards and the steps taken or proposed to be taken for the safety of workers as in (1) above shall be sent to the Chief Inspector before commencing manufacture, handling or storage of any of the items covered under Appendix A, whether on experimental, pilot plant or large scale basis.

(3) The design of the buildings and plant shall be based on the information as obtained as in (1) above.

8. *Unauthorized personnel.*- (1) Unauthorized persons shall not be permitted to enter any section of the factory or plant where there are special dangers.

(2) Visitors shall be provided, where necessary with suitable safety equipment and shall be accompanied round dangerous plant by a responsible official.

9. *Instruments.*- All instruments such as pressure gauges, thermometers, flow meters and weighing machines shall be tested at regular intervals by a competent person and records of these tests shall be kept in a register.

10. *Cocks and valves.*- Suitable valves shall be provided in all service lines at sufficiently short intervals for convenience in blanking off, etc. All cocks and valves shall be operated at least once a month and tested periodically by a competent persons, and records of these tests shall be kept in register. A plan of all service installations shall be kept readily available for perusal.

11. *Manholes.*- No manhole shall be opened for entry until effective fencing has been erected around it.

12. *Emergency instructions.*- Simple and special instructions shall be framed to ensure that effective measures will be carried out in cases of emergency, to deal with escape of inflammable, poisonous or deleterious gases, vapours, liquids or dusts. These in prominent places in the different sections. All workers shall be trained and instructed as to what action to be taken in such emergencies and to avoid general hazards of their employment.

13. *Protection of reaction mixtures.*- Suitable arrangements shall be made to ensure that no foreign matter of any sort can fall into reaction mixtures.

14. *Electrical apparatus.*- Electrical plant, fittings and conductors shall, if exposed to a damp or corrosive atmosphere, be adequately protected. Periodic tests shall be carried out on all circuits.

15. *Place of work.*- (1) Workers shall only be allowed in those places in which they have been given orders to work.

(2) In dangerous sections of a factory, the number of workers shall be kept to a minimum compatible with the need of the process.

16. *Packing, storage and transport of chemicals.*- Chemicals shall be packed and stored in containers suitable for the purpose and of adequate strength for storage or transport. All such containers shall be suitably labelled so that they will be labelled so that they will be stored and transported in such a manner as to ensure that, in the event of spillage, they will neither produce a reacting mixture, nor cause the development of toxic or fire risks in contact with other products in its vicinity, or with walls, floors or dust thereon.

## **B-FIRE EXPLOSION RISKS**

17. *Requirement regarding location of site, buildings etc.*- (1) Buildings and plant shall be sited with due regards to the dangers which may arise from the processes involved and in particular shall be spaced at distances which are deemed safe from the fire and explosive risks connected with the processes in adjacent buildings. Due consideration shall be given to the

effect of any processes carried out in adjacent factories.

(2) Where special dangers exist, separate buildings shall be used for the different parts of a process. They shall be spaced at sufficient distances apart and shielded to prevent damage to each other in the event of fire or explosion, and shall be safeguarded by the provision of suitable blow-out panels or roofs. Where the risk of fire or explosion is considerable, the building shall be divided by blast or protective screen walls.

(3) No combustible materials shall be used in the erection of working buildings, unless there are special reasons necessitating their use, when they shall be rendered fire-resistant. The roof shall be of light fire-resistant construction and floors shall be of impervious fire-resistant material and shall be regularly maintained in such condition.

18. *Dangers of ignition (including lighting installations).*- (1) No internal combustion engine and no electric motor or other electrical equipment, and fittings and fixtures capable of generating sparks or otherwise causing combustion shall be installed or used in a building or danger zone. Electrical conductors shall be fitted with screwed steel conduits.

(2) All hot exhaust pipes shall be installed outside a building and other pipes shall be suitably protected.

(3) Portable electric hand lamps shall not be used unless of an intrinsically safe type, and portable electric tools connected by flexible wires shall not be used, unless of the flame-proof type.

(4) Where an inflammable atmosphere may occur, the soles of footwear worn by workers shall have no metal on them and wheels of trucks or conveyors shall be of conducting, non-sparking materials. Adequate precautions shall be taken to prevent the ignition of explosive or inflammable substances by sparks emitted from locomotives or other vehicles operated in the factory on public lines.

(5) No electric arc lamp, or naked light, fixed or portable shall be used, and no person shall have in his possession any match or any apparatus of any kind for producing a naked light or spark in or on, or about any part of the factory where there is liability to fire or explosion from inflammable gas, vapour or dust, and all incandescent electric lights in such parts shall be in double air tight covers.

(6) Prominent notices in the language understood by the majority of the workers and that can be read by day and by night, prohibiting smoking, the use of naked lights, and the carrying of matches or any apparatus of any kind for producing a naked light or spark, shall be affixed at the entrance of every room or place, where there is risk of fire or explosion from inflammable gas, vapour or dust. In the case of illiterate workers the contents of the notices shall be fully and carefully explained to them when they commence work they have completed one week at the factory.

(7) A sufficient supply of spades, scrapers and pails made from non-sparking material shall be provided for the use of persons employed in cleaning out or removing residues from any chamber, still, tank or other vessel where an inflammable or explosive danger may occur.

(*Note:-* The risk is not always obvious and may arise, for example, through the production of hydrogen in acid tanks.)

19. *Static electricity.*- (1) All machinery and plant, particularly, pipe lines and belt drives, on which static electricity is likely to accumulate, shall be effectively earthed. Receptacles for

inflammable liquids shall have metallic connections to the liquids shall have metallic connections to the earthed supply tanks to prevent static sparking. Where necessary, humidity shall be controlled.

(2) Mobile tank wagons shall be earthed during filling and discharge, and precautions shall be taken to ensure that earthing is effective before such filling or discharge takes place.

20. *Lightning protection.*- Lightning protection apparatus shall be fitted where necessary, and shall be maintained in good conditions.

21. *Process heating.*- The method of providing heat for a process shall be as safe as possible and where the use of naked flame is necessary, the plant shall be so constructed as to prevent any escaping of inflammable gas, vapour or dust coming into contact with the flame or exhaust gases or other agency likely to cause ignition. So far as practicable, the heating medium shall be automatically controlled at a predetermined temperature below the danger temperature.

22. *Escape of materials.*- (1) Provision shall be made in all plants, sewers, drains, flues, ducts, culverts and buried pipes to prevent the escape and spread of any liquid, gas, vapour, fume or dust likely to give rise to fire or explosion, both during normal working hours and in the event of accident or emergency.

(2) If escape occurs, such substances shall be removed expeditiously and efficiently at the point of liberation. The effluent shall be trapped and rendered safe outside the danger area.

23. *Leakage of inflammable liquids.*- (1) Provision shall be made to confine by means of bund walls, sumps, etc. all possible leakage from vessels containing inflammable liquids.

(2) Adequate and suitable fixed fire-fighting appliances shall be installed in the vicinity of such vessels.

24. *Cleaning of empty containers, etc.*- (1) All empty containers which have held inflammable liquids, and metal containers which have held sulphuric acid shall be rendered permanently safe as soon as practicable, and shall not be repaired or destroyed until such cleaning has been completed.

(2) Combustible and inflammable materials shall not be stored in close proximity to chemicals which are liable to cause ignition.

(3) Rubbish shall be removed from buildings without delay and placed in special metal containers provided with close fitting lids. The contents shall be removed daily and suitably dealt with. Waste product containing inflammable or explosive materials shall not be placed on rubbish heaps but shall be destroyed in an appropriate manner.

25. *Installing of pipe lines for inflammable liquids.*- All pipe lines for the protected from breakage, shall be arranged so that there is no risk of mechanical damage from vehicles and shall be so laid that they drain thoroughly without the collection of deposits at any part. All flagged joints, bends and other connections shall be regularly inspected. Cocks and valves shall be so constructed that explosive residues cannot collect therein. The open and closed positions of all cocks and valves shall be clearly indicated on the outside.

26. *Packing of reaction vessels.*- Packing and joint materials for reaction vessels (including covers, manhole covers, and exhaust pipes) and pipe lines and also the high or low temperature insulating materials shall not contain such materials which are combustible or which react with the products of the plant.

27. *Safety valves.*- Every still and every closed vessel in which gas is evolved or into which gas is passed, and in which the pressure is liable to rise to pressure gauge, and a proper safety valve or other equally efficient means to relieve the pressure and it shall be maintained in good condition. Nothing in this paragraph shall apply to metal bottles or cylinders used for the transport of compressed gases.

28. *Vigorous or delayed reactions.*- Suitable provision, such as automatic and distant control shall be made for controlling the effects of unduly vigorous or delay reactions. Automatic flooding or blanketing shall be provided in the event of an accident.

29. *Examination, testing and repair of plant.*- Examination, testing and repair of plant parts which have been in contact with explosive and inflammable material, or which is under pressure shall only be carried out under proper supervision.

30. *Alarm systems.*- (1) Gravity or pressure feed systems for supplying inflammable materials to the various parts of the buildings or plant shall be fitted with alarm systems, automatic cutoffs or other devices to prevent over-charging or otherwise endangering of the plant.

(2) The amount of inflammable material taken into a building in bulk containers at any one time shall be kept as low as practicable.

(3) Adequate steps shall be taken to prevent the escape of inflammable and explosive vapours from any container into the atmosphere of any building.

### **C-GAS, VAPOUR, FUME OR DUST RISKS**

31. *Escape of gases etc.*- Effective steps shall be taken to prevent the escape of dangerous gases, vapours, fumes or dust from any part of the plant, by the total enclosure of the process involved in air tight chamber or by the provisions of efficient exhaust draught. Effective arrangements shall be made to ensure that in the event of failure of the control measure provided as above the process shall stop immediately and the dangerous gases, vapours, fumes or dust which have escaped are trapped and rendered safe.

32. *Danger due to effluents.*- (1) Adequate precautions shall be taken to prevent the mixing of effluents which may cause dangerous or poisonous gases to be evolved.

(2) Effluents which may contain or give rise in the presence of other effluents, to such gases shall be provided with independent drainage systems to ensure that they may be trapped and rendered safe.

33. *Staging.*- (1) Staging shall not be erected over any open vessel is so constructed and ventilated to prevent the emission of vapours of fumes about such staging.

(2) Where such staging is provided to give access to higher levels in large plants, effective means shall be provided at all levels with direct means of access to the outside of the room or building and thence to ground level.

(3) Such staging shall be fitted with suitable handrails and to boards and the floors and staging shall be impervious and easily cleaned.

34. *Instructions as regards risk.*- Before commencing work, every worker shall be fully instructed about the properties of the materials they have to handle, and of the dangers arising from any gas, fume, vapour or dust which may be evolved during the process. Workers shall also be instructed of the measures to be adopted to deal with such an escape of dangerous gas, fume, vapour or dust in the event of emergency.

35. *Breathing apparatus.*- (1) There shall be provided in every factory where dangerous gas or fume is liable to escape a sufficient supply of-

- (a) breathing apparatus of an approved make for the hazards involved.
- (b) Oxygen and suitable means of its administration; and
- (c) Life-belts.

(2) The breathing apparatus and other appliances required by this paragraph shall

- (a) be maintained in good order and kept in an ambulance room or in some other place approved in writing by the Chief Inspector; and
- (b) be thoroughly inspected once every month by a competent person appointed in writing by the occupier and a record of their conditions shall be entered in a book provided for that purpose which shall be produced when required by an Inspector.

(3) Workers shall be trained and given a periodic refresher course, in the use of breathing apparatus and respirators.

(4) Respirators shall be kept properly labelled in clean dry lightproof cabinets, and if liable to be affected by fumes, shall be protected by suitable containers. Respirators shall be dried and cleaned after use and shall be periodically disinfected.

36. *Treatment of persons.*- In every room or place so specified in writing by the Chief Inspector, there shall be affixed the official cautionary notice regarding dangerous gases and burns. Such notices shall be legible by day and by night and shall be printed in the language understood by the majority of the workers.

37. *Personal protective equipment.*- (1) Suitable protective clothing shall be provided for the use of operators.

- (a) When operating on valves or cocks controlling fluids which by their nature, pressure or temperature would be highly dangerous if a blowout were to occur or when cleaning chokes in systems containing such fluids, if pressure is likely to exist behind the chokes.
- (b) When there is danger of injury by absorption of corrosive substance through skin during the performance of normal duties or in the event of emergency.
- (c) Whenever there is risk of poisonous materials being carried away on the clothes of operators.

(2) There shall be provided for the use of all persons employed in the process specified in appendix B an adequate supply of suitable protective equipment including gloves, overalls and protective footwear and of goggles and respirators. Respirators shall be of a type approved in writing by the Chief Inspector.

(3) Protective equipment shall be provided and stored in the appropriate place for use during abnormal conditions or in an emergency.

(4) Arrangements shall be made for the proper and efficient cleaning of all such protective equipment.

38. *Cloakrooms.*- There shall be provided and maintained for the use of all persons employed in the process specified in appendix B, a suitable cloakroom for clothing put off during work hours and a suitable place separate from the cloakroom, for the storage of overalls or working clothes. The accommodation so provided shall be placed in the charge of a responsible person, and shall be kept clean.

39. *Special bathing facilities.*- (1) There shall be provided for the use of all persons employed in the processes specified in the appendix C, separate sanitary conveniences and sufficient and suitable bathing facilities, as approved by the Chief Inspector.

(2) A bath register shall be kept containing the names of all persons employed in these processes and an entry of the date on which each person takes a bath.

40. *Entry into vessels.*- (1) Before any person enters, for any purpose except that of rescue, an absorber, boiler culvert, drain, flue, gas purifier, sewer, still, tank, vitriol chamber or other place where there is reason to apprehend the presence of dangerous gas or fumes, a responsible person appointed in writing by the occupier for this purpose, shall personally examine such place and shall certify in writing in a book kept for the purpose either that such place is isolated from every source of such gas or fume and is free from danger, or that it is not to be so isolated and sealed and free from danger. No person shall enter any such place which is certified not to be so isolated and sealed and free from danger unless he is wearing a breathing apparatus, and (where there are no cross stays or obstructions likely to cause entanglement) a lifebelt, the free end of the rope attached to which shall be to left with man outside whose sole duty shall be to keep watch and to draw out wearer if he appears to be affected by gas or fume. The belt and rope shall be so adjusted and worn that the wearer can be drawn up head foremost through any manhole or opening.

(2) A person entering for the purpose of rescue into any such place for which a clearance certificate has not been issued shall wear a breathing apparatus and a life-belt in the manner specified in sub-paragraph (1) above.

41. *Examination and repair of plant.*- Where poisonous materials are likely to be present the examination and repair of plant and piping shall only be done under the supervision of a competent person, and after the plant and piping has been thoroughly cleaned and ventilated. When opening vessels and breaking joints in pipe lines, respirators, goggles and protective clothing shall be worn to the extent required by the competent person.

42. *Storage of acid carboys.*- Carboys contained nitric acid or "mixed" acid shall be stored in open-sided sheds detached from other buildings, and places on a flooring of sandstone, bricks or other suitable inorganic materials. A passage way shall be provided and kept free from obstruction between every four rows of such carboys. An ample supply of water shall be available for washing away spilled acid and all precautions shall be taken to prevent workers being exposed to fumes.

43. *Buildings.*- All buildings and plant shall be sited with due regard to possible dangers from accidental liberation or splashing of corrosive and deleterious liquids, and shall be so designed as to facilitate thorough washing and cleaning. The construction of staging and other parts of buildings shall be carried out with material impervious and resistant to corrosion so far as practicable.

44. *Leakage.*- (1) All plants shall be so designed and constructed as to obviate the escape of corrosive liquid. Where necessary, separate buildings, rooms or protective structures shall be used for the dangerous stages of the process and the buildings shall be so designed as to localise any escape of liquid.

(2) Catch pits, bund walls or other suitable precautions shall be provided to restrict the serious effects of such leakages. Catch pits shall be places below joints in pipelines to prevent danger to workers from such leakage.

(3) Passages and work stations shall not be situated directly below any part of plant where corrosive or deleterious substances and means shall be provided for rendering safe any such escaped corrosive or deleterious substances.

45. *Precautions against escape.*- Adequate precautions shall be taken to prevent the escape of corrosive or deleterious substances and means shall be provided for rendering safe any such escaped corrosive or deleterious substances.

46. *Drainage.*- Adequate drainage shall be provided and shall lead to special treatment tanks where deleterious materials shall be neutralised or otherwise rendered safe before it is discharged into ordinary drains or sewers.

47. *Covering of vessels.*- (1) Every fixed vessel or structure containing any dangerous material, and not so covered as to eliminate all reasonable risk of accidental immersion in it of any portion of the body of a worker, shall be so constructed that there is no foothold on the top or the sides.

(2) Such vessels shall, unless its edge is at last 90 centimeters above the adjoining ground or platform, be securely fenced to a height of at least 90 centimeters above such adjoining ground or platform.

(3) No plank or gangway shall be places across or inside any such vessel, unless such plank or gangway is at least 45 centimeters wide, and is securely fenced on both sides by rails spaced at 22.5 centimeters apart to a height of at least 90 centimeters or by other equally efficient means.

(4) Where such vessels adjoin and the space between them, clear of any surrounding brick or other work is either less than 45 centimeters in width or is 45 or more centimeters in width, but is not securely fenced barriers shall be so places as to prevent passage between them.

Provided that sub-paragraph (2) of this paragraph shall not apply to.-

- (a) saturators used in the manufacture of sulphate of ammonia; and
- (b) that part of the sides of brine evaporating pans which require raking, drawing or filling.

48. *Ventilation.*- Adequate ventilation shall be provided and maintained at all times in rooms or buildings where dangerous gas, vapour, fume or dust may be evolved.

49. *Means of escape.*- Adequate ventilation means of escape from rooms or buildings in the event of a leakage of corrosive liquid shall be provided and maintained.

50. *Treatment of personnel.*- (1) In all places where strong acid or any other dangerous corrosive liquids are uses, there shall be provided for use in an emergency.-

- (a) adequate and readily accessible means of drenching with cold water the persons and the clothing of persons, who have been splashed with such liquid;

- (b) adequate special arrangements to deal with any person who has been splashed with poisonous material that can be absorbed through the skin; and
- (c) a sufficient number of eye-wash bottles, filled with distilled water or other suitable liquid, kept in boxes or cupboard conveniently situated and clearly indicated by a distinctive sign which shall be visible at all times.

(2) Except where the manipulation of such corrosive liquids is carried on as to prevent risk of personal injury from splashing or otherwise, there shall be provided for those who have to manipulate such liquid sufficient and suitable goggles and gloves or other suitable protection for the eyes and hands. If gloves are provided they shall be collected, examined, and cleansed at the close of the day's work and shall be repaired or renewed when necessary.

51. *Maintenance.* – (1) Before any examination or repairs are carried out on plant or pipe lines, a competent person shall issue a clearance certificate permitting such examination or repairs.

(2) Adequate precautions shall be taken to liberate any pockets of gas or liquid which may have been formed in pipe lines, and which may cause corrosive spray at the point where dismantling takes place.

52. *Washing facilities.*– (1) There shall be provided and maintained in every factory for the use of employed persons adequate and suitable facilities for washing which shall include soap and nail brushes or other suitable means of cleaning and the facilities shall be conveniently accessible and shall be kept in a clean and orderly condition.

(2) If female workers are employed separate washing facilities shall be provided and so enclosed or screened that the interiors are not visible from any place where persons of the other sex work or pass. The entrance to such facilities shall bear conspicuous notice “For Women Only” in the language understood by the majority of the workers and shall also be indicated pictorially.

53. *Messroom facilities.*– In every factory there shall be provided and maintained for the use of those remaining on the premises during the rest intervals, suitable and adequate messroom or canteen accommodation which shall be furnished with sufficient tables and chairs or benches with backrest and where sufficient drinking water is available.

54. *Ambulance room.*– (1) In every factory in which more than 250 persons are employed on the processes to which this Schedule applies, there shall be provided and maintained in good order an ambulance room.

(2) The ambulance room shall be a separate room used only for the purpose of treatment and rest. It shall have a floor space of not less than 9 square meters and smooth, hard and impervious walls and floor, and shall be provided with ample means of natural and artificial lighting. It shall contain all the items shown in appendix D.

(3) Where persons of both sexes are employed arrangement shall be made at the ambulance room for their separate treatment.

(4) The ambulance room shall be placed under the charge of a qualified nurse or other person trained in first-aid, who shall always be readily available during working hours, and shall keep a record of all cases of accidents or sickness treated in the room.

55. *Ambulance van.*– In every factory there shall be provided and maintained in good condition a suitably constructed ambulance van for the purpose or removal of serious cases of

accident or sickness, unless arrangements have been made with a hospital or other place in telephonic communication with the factory for obtaining such a carriage immediately when required.

56. *Medical personnel.*- There shall be a whole time medical officer in every factory employing 250 person or more.

57. *Medical examination.*- (1) Workers engaged in the manufacture, processing, formulation or use of the following shall be examined in every three months by the Certifying Surgeon and records maintained.-

- (a) hexaethyl tetraphosphate
- (b) tetra ethyl pyrophosphate;
- (c) O, opdiethyl o-p-nitrophenyl thiophosphate (Perathion);
- (d) Nicotine and nicotine sulphate
- (e) Mercury derivatives;
- (f) Methyl bromide;
- (g) Cyanides
- (h) Arsenical derivatives;
- (i) Chrome process compounds; and
- (j) Nitro or amido process compounds.

(2) A health register containing the names of all persons employed in the process shall be kept in a form approved by the Chief Inspector.

(3) No new person shall be employed for more than 14 days without a certificate of fitness granted after examination by the Certifying Surgeon, who shall make an entry duly signed in the health register.

(4) Every persons so employed shall present himself at the appointment for examination by the Certifying Surgeon as provided in sub-paragraph (3)

(5) The Certifying Surgeon shall have the power to suspend any person employed if he has reason to believe that continuance of such person in such employment shall be dangerous to his health and no person after such suspension shall be employed without written sanction from the Certifying Surgeon and entry to that effect in the health register.

58. *Duties of workers.* – (1) Every person employed shall –

- (a) report to his foreman any defect in any fencing, breathing apparatus, appliance or other requisite provided in pursuance of this Schedule, as soon as he becomes aware of such defect;
- (b) use the articles, appliances or accommodation required by this Schedule for the purpose for which they are provided;
- (c) wear the breathing apparatus and life-belt as required under paragraph 40.

(2) *Every person employed-*

- (a) in a process to which paragraph 37 applies shall wear the protective clothing, footwear, respirators, goggles or gloves provided under paragraph 37 and shall deposit overalls or

suits or working clothing so provided, as well as clothing put off during working hours, in the places provided under paragraph 38;

- (b) in processes to which paragraph 39 applies, shall carefully wash the hands and face before partaking of any food or leaving the premises; and
- (c) in any processes to which part II of this Schedule applies, shall use the protective appliances supplied in respect of any process in which he is engaged.

(3) *No person shall –*

- (a) remove any fencing provided in pursuance of paragraph 47 unless duly authorised;
- (b) stand on the edge or on the side of any vessel to which paragraph 47 applies;
- (c) pass or attempt to pass any barrier erected in pursuance of paragraph 47;
- (d) place across or inside any vessel to which paragraph 47 applies, any plank or gangway which does not comply with that paragraph or make use of any such plank or gangway while in such position;
- (e) take a naked light or any lamp or matches or any apparatus for producing a naked light or spark into, or smoke in, any part of the works where there is liability to explosion from inflammable gas, vapour or dust;
- (f) use a metal spade, scraper or pail when cleaning out or removing the residues from any chamber, still, tank or other vessel which has contained sulphuric acid or hydrochloric acid or other substance which may cause evolution of arseniuretted hydrogen; and
- (g) Remove from a first-aid box or cupboard or from the appliance or dressing except for the treatment of injured workers in the premises.

59. *Exemption.*- If the Chief Inspector is satisfied in respect of any factory or any process that, owing to the special conditions or special methods of work, or by reason of the infrequency of the process or for other reasons, all or any of the requirements of this Schedule are not necessary for the protection of persons employed in any factory or process he may by order in writing (which he may in his discretion revoke) exempt any factory or process from all or any of the provisions of this Schedule, subject to such conditions as he may by such order prescribe.

## PART II

### **Applying to the works in Appendix E**

60. *Entry into gas tar or coal tar still.* – Before any person enters a gas tar or coal tar still for any purpose except that of rescue, it shall be completely isolated from adjoining tar stills by disconnecting either –

- (a) the pipe leading from the swan neck to the condenser work; or
- (b) the waste gas pipe fixed to the worn-end or received; and

in addition, blank flanges shall be inserted between the disconnected parts and the fitch discharge pipe or cock at the bottom of the still shall be disconnected.

61. *Entry into bleaching power chambers.* – (1) No person shall enter a chamber for the purpose of withdrawing the charge of bleaching powder unless and until –

- (a) the chamber is efficiently ventilated; and
- (b) the air in the chamber has been tested and found to contain not more than 6 grammes of free chlorine gas per cubic meter.

(2) A register containing details of all such tests shall be kept in a form approved by the Chief Inspector.

62. *Special precautions for nitro and amido processes.* – In a nitro or amido process –

- (a) if crystallised substances are broken or any liquor agitated by hand, precautions shall be taken to prevent, as far as practicable, the escape of dust or fume into the air or any place in which any person is employed. The handles of all implements used in the operations shall be cleansed daily;
- (b) cartridges shall not be filled by hand but by means of a suitable scope;
- (c) every drying stove shall be efficiently ventilated to the outside air in such a manner that hot air from the stove shall not be drawn into any workroom;
- (d) no person shall enter a stove to remove the contents until a free current of air has been passed through it; and
- (e) every vessel containing nitric or amido derivatives of phenol or of benzene or its homologues shall, if steam is passed into or around it, or if the temperature of the contents be at or above the temperature of boiling water, be covered in such a way that steam or vapour shall be discharged into the open air at a height of not less than 7.6 meters from the ground or the working platform, and at a point from where it cannot be blown back again into the workroom.

63. *Precautions during caustic grinding, etc.* – Every machine used for grinding or crushing caustic shall be enclosed, and where any of the following processes are carried on such as –

- (i) grinding or crushing of caustic;
- (ii) packing of ground caustic
- (iii) grinding, sieving, evaporating or packing in a chrome process and
- (iv) crushing, grinding or mixing of material or cartridge filling in a nitro or amido process.

64. *Chlorate manufacture.* – (1) Chlorate shall not be crystallised, ground or packed except in a room or place not used for any other purpose, the floor of which room or place shall be cement, or other smooth, impervious and incombustible material, and shall be thoroughly cleansed daily.

(2) Wooden vessels shall not be used for the crystallisation of chlorate, or to contain crystallised or ground chlorate.

Provided that this requirements shall not prohibit the packing of chlorate for sale into wooden casks or other wooden vessels.

65. *Restrictions on the employment of young persons and women.* – (1) Persons under 18 years of age and women shall not be employed in any process in which hydrofluoric acid fumes or ammoniacal vapours are given off or in any of the following operations:-

- (a) Evaporation of brine in open pans;
- (b) Stoving of salt;

- (c) Work at a furnace where the treatment of zinc ores is carried on; and
- (d) The cleansing of workroom where the process mentioned in (c) is carried on.

(2) No person under 18 years of age shall be employed in a chrome process or in a nitro or amido process or in a process in which the following materials are used or where the vapour of such materials is given off namely:-

- (a) Carbon bisulphide
- (b) Chlorides of sulphur;
- (c) Benzene
- (d) Carbon tetrachloride;
- (e) Trichloro-ethylene;
- (f) Any carbon chlorine compound; and
- (g) Any mixture containing any of such materials.

#### APPENDIX A

Any works or that part of works in which-

- (a) the manufacture or recovery of any of the following is carried on namely:-
  - (i) carbonates, chromates, chlorate, oxides or hydroxide of potassium, sodium, iron, aluminium, cobalt, nickel, arsenic, antimony, zinc or magnesium;
  - (ii) ammonia and the hydroxide and salts of ammonium;
  - (iii) sulphurous, sulphuric, nitric, hydrochloric, hydriodic, hydrosulphuric, boric, phosphoric, oxalic, arsenious, arsenic, lactic, acetic, tartaric or citric acids and their metallic or organic salts; and
  - (iv) cyanogen compounds;
- (b) a wet process is carried on-
  - (i) for the extraction of metal from an ore or from any by-product or residual material; or
  - (ii) in which electrical energy is used in any process of chemical manufacture.
- (c) alkali waste or the drainage therefrom is subjected to any chemical process for the recovery of sulphur, or for the utilisation of any constituent of such waste or drainage;
- (d) carbon bisulphide is made or hydrogen sulphide is evolved by the decomposition of metallic sulphides or hydrogen sulphide is used in the production of such sulphides.
- (e) Bleaching powder is manufactured or chlorine gas is made or is used in any process of chemical manufacture;
- (f)
  - (i) gas tar or coal tar or any compound product or residue of such tars is distilled or is used in the mica manufacture.
  - (ii) synthetic colouring matters or their intermediates are made;
- (g) refining of crude shale oil or any process incidental thereto is carried out;

- (h) nitro acid is used in the manufacture of nitro compounds.
- (i) Explosives are made with the use of nitro compounds.
- (j) Phosgene (carbonyl chloride) is manufactured or is used in the process of chemical manufacture; and
- (k) Aliphatic or aromatic compounds or their derivatives or substituted derivatives are manufactured or recovered.

#### APPENDIX B

1. A nitro or amido process.
2. Grinding raw materials in a chrome process.
3. The crystal department and the packing room in a chrome process.
4. Packing in a chrome process.
5. Any room or place in which cholrate is crystallised, ground or packed.
6. Any room in which caustic is ground or crushed by machinery.
7. Bleaching powder chambers, or in packing charges drawn from such chambers.
8. Drawings off of molten sulphur from sulphur pots in the process of carbon disulphide manufacture.

#### APPENDIX C

1. A nitro or amido process.
2. The crystal department and the packing room in a chrome process.
3. The process of distilling gas or coal tar (other than blast furnace tar) and any process of chemical manufacture in which such tar is used.

#### APPENDIX D

1. A glazed sink with hot and cold water always available.
2. A table with a smooth top.
3. Means for sterilising instruments.
4. A couch
5. A stretcher.
6. Two buckets or containers with close-fitting lids.
7. Two rubber hot water bags.
8. A kettle and spirit stove or others suitable means of boiling water.
9. Twelve plain wooden splints 900 m x 100 m x 6 m.
10. Twelve plain wooden splints 350 m x 75 m x 6 m.

11. Six plain wooden splints 250 m x 50 m x 12 m.
12. Three wooden blankets.
13. One pair artery forceps.
14. One bottle of brandy.
15. Two medium size sponge
16. Three hand towels
17. Two kidney trays.
18. Four carbolic soaps.
19. Two glass tumblers and two wine glasses.
20. Two clinical thermometers.
21. Graduated measuring glass with teaspoon.
22. One eye bath.
23. One bottle (900 gms.) carbolic lotion 1 in 20
24. Two chairs.
25. One screen.
26. One electric hand torch.
27. An adequate supply of anti-tetanus serum.
28. Two first-aid boxes, each containing.
  - (a) twenty four small sterilised dressings;
  - (b) twelve medium size sterlised dressings;
  - (c) twelve large size sterlised dressings;
  - (d) twelve large size sterlised dressings;
  - (e) twelve half-ounce packets of sterilised cotton;
  - (f) one snake-bite lancet;
  - (g) one pair of scissors;
  - (h) two one-ounce bottles of potassium permanganate crystals;
  - (i) one four-ounce bottle containing a two percent alcoholic solution of iodine;
  - (j) one four-ounce bottle of sal volatile having the done and mode of administration indicated on the label; and
  - (k) one copy of the first-aid leaflet issued by the Directorate General Factory Advice Service and labour Institutes (Government of India) Bombay.

#### APPENDIX E

1. Any works or that part of works in which-
  - (a) caustic pots are used;

- (b) chlorate or bleaching powder is manufactured;
  - (c) (i) gas tar or coal tar is distilled or is used in any process of chemical manufacture.
    - (ii) a nitro or amido process is carried on;
    - (iii) a chrome process is carried on;
  - (d) crude shale oil is refined or processes incidental thereto are carried on;
  - (e) nitric acid is used in the manufacture of nitric compound.
  - (f) The evaporation of brine in open pans and the stoving of salt are carried on;
  - (g) The manufacture of recovery of hydrofluoric acid or any of its salts is carried on.
2. Work at a furnace where the treatment of zinc ores is carried on.

### SCHEDULE XIII

#### **Manufacture of articles from refractory materials.**

1. *Application and exemption.*- This schedule shall apply to the following processes:-

- (a) handling, moving, breaking, crushing, grinding or sieving of any refractory materials, containing not less than 25 per cent total silica for the purpose of manufacture-
  - (i) of articles used in the constructions of furnaces and flues;
  - (ii) of crucibles; and
  - (iii) of compositions or other materials used in the preparation of moulds in which metals are cast; or
- (b) any process in the manufacture of refractory bricks as hereinafter defined:

Provided that nothing in this Schedule shall apply-

- (i) to handling, moving, mixing or sieving of natural sand; or
- (ii) to the manipulations of rotten rock in the preparations of moulds, used in metal foundries:

Provided further that if the Chief Inspector of Factories is satisfied in respect of any factory or part thereof that owing to the special conditions of work or otherwise, that any of the requirements of this Schedule can be suspended or relaxed without and danger to the health of the person employed therein, he may be an order in writing grant such suspension or relaxation for such period and no such conditions as he may think fit. Any such order may be revoked at any time.

2. *Definitions.*- For the purposes of this Schedule-

- (a) “refractory material” means any refractory material containing not less than 25 per cent total silica;
- (b) “refractory brick” means any brick or article composed of refractory material and containing not less than 25 per cent total silica; and
- (c) “efficient exhaust draught” means localised ventilation by mechanical means for the

removal of dust so as far as to prevent dust from escaping into the air of any place in which work is carried on. No draught shall be deemed to be efficient which fails to remove the dust produced at the point where such dust originates.

3. *Refractory material not to be broken.*- No refractory material shall be broken in pieces by manual labour unless the process is carried out in the open air:

Provided that where it is not practicable to carry out this process in open air, the process shall be carried out under an efficient exhaust draught.

4. *Crushing or grinding of refractory material.*- No refractory material, unless it is so wet that dust will not be produced, shall be crushed or ground in a stone crushing or grinding machines unless such machine is provided with.

- (a) an efficient exhaust draught and efficient dust collecting appliances; or
- (b) an efficient water or steam spray:

Provided that every grinding machine wherein any refractory material is ground in dry state, shall be, totally enclosed and connected to a mechanical exhaust system so as to prevent effectively any escape of dust outside the casing of the machine by maintaining a pressure below the atmospheric pressure within the casing of the machine.

Provided further that all processes of crushing and grinding shall be effectively isolated from other processes.

5. *Refractory material handling equipment to be enclosed.*- All chutes, conveyors, elevators, screens, sieves and mixers used for manipulating refractory material shall, unless the material is so wet that dust will not be produced, be enclosed and be provided with an efficient exhaust draught.

6. *Precautions material handling refractory material.*- No refractory material so dry as to produce dust shall.-

- (a) be loaded into any wagon or other receptacle for transport unless it has been placed in a suitable dustproof container so damped as to preclude dust;
- (b) be unloaded from any wagon or other receptacle for transport unless it has been so dampened as to preclude dust or unless the work is done work an efficient exhaust draught; or
- (c) be shovelled or raked or otherwise manipulated by means of hand tools in any manufacturing process unless it has been so dampened as to preclude dust or unless the work is done under an efficient exhaust draught:

Provided that sub-paragraph (b) of this paragraph shall not apply to refractory material in the form of rock or pebbles before it is manipulated in any manufacturing process.

7. *Maintenance of floors.*- (1) The floors of all places where refractory bricks are dried, other than the floors of tunnel ovens or chambers driers not normally entered by persons employed shall, after each lot of refractory bricks has been removed, be carefully cleaned of all debris and the part being cleaned shall be kept damp while the cleaning is being done.

(2) There shall be provided in every such place a constant supply of water laid on under adequate pressure with sufficient connections and a flexible branch pipe and sprinkler to enable water to be supplied direct to every part of the floor.

8. *Prohibition of use of drying stove.*- No drying stove in which refractory bricks are baked by fires before being placed in the kilns, shall be used.

9. *Cleaning of floor and suppression of refractory dust.*- The surface of every floor or place where persons are liable to pass shall be cleaned of debris of refractory material once at least during each daily period of employment or where shifts are worked, one during each shift. Such debris unless it is immediately required for use in the processes, shall be effectively dampened and either be placed in covered receptacles, or be otherwise stored in such a manner as to prevent the escape of dust into the air in or near to any place where any person is employed.

10. *Suppression of refractory dust while drying.*- Where plates are used, whether portable or forming part of the floor, on which refractory bricks are dried, such plates shall be freed from adherent material only by a wet method or by such other method or by such other method as will prevent the escape of dust into the air.

11. *Prohibition of use of refractory dust for moulding.*- The dust or powder of refractory materials shall not be used for sprinkling the moulds in refractory brickmaking:

Provided that nothing in this paragraph shall be deemed to prevent the use of natural sand for the purpose of sprinkling the moulds.

12. *Workers not to work in refractory dust atmosphere.*- No worker shall be allowed to work on any dust process or at any place where dust of any refractory materials is present in the atmosphere:

Provided that in an emergency a worker may be allowed to work at such process or place if he wears a suitable and efficient dust mask or breathing apparatus.

13. *Medical examination.*- (1) Every worker employed on any day of the processes specified in sub-paragraphs (a) and (b) of paragraph 1 shall be medically examined in such a manner and at such intervals as may be specified by any rules made under the Workmen's Compensation Act, 1923 or if no such rules have been framed under the said Act, every such worker shall be medically examined by the Certifying Surgeon before employment on any of the aforesaid process and at an intervals not exceeding six months thereafter.

(2) Subject to sub-paragraph (3), an X-ray, examination of the chest of every worker referred to in sub-paragraph (1) shall be carried on-

- (a) if he is already employed on the date of coming into force of the sub-paragraph, within six months of such date and at an interval of every three years thereafter;
- (b) if he is employed after such date within one month of the date of his employment and at an interval of every thereafter;

and the result such X-ray examination shall be produced before the Certifying Surgeon within a month of the examinations.

(3) If the Certifying Surgeon, during the course of medical examination of any worker under sub-paragraph (1) has reason to suspect onset of any chest disease, he may direct the manager or the occupier to get an X-ray plate before him within a specified time and on receipt is such direction, the manager or the occupier as the case may be, shall carry out the direction.

(4) The Certifying Surgeon shall grant to each worker examined, a certificate specifying therein whether or not the worker was considered fit to be employed on any of the aforesaid processes.

(5) The manager shall maintain a register in which the findings and recommendations of the Certifying Surgeon in respect of every worker and in respect of every worker and in respect of every medical examinations shall be maintained duly signed by the Certifying Surgeon.

(6) A worker not declared fit shall not be employed on any of the aforesaid processes and he shall be employed on only such other examination or treatment as may be directed by the Certifying Surgeon.

(7) No fees shall be charged from any worker for the medical examination and it shall be the responsibility of the occupier and the manager to comply with the provision of this Schedule.

14. *Time limit for compliance in respect of existing plants.*- In case any existing plant or machinery which needs alteration, modification or replacement or in case of any new plant to be installed, is required to comply with the requirements of this Schedule, such alteration, modification, replacement or installations of the plant or machinery shall be carried on within a period not exceeding six months from the date of publication of this Schedule:

Provided that the Chief Inspector of Factories in consideration of special and exceptional circumstances by an order in writing may extend this period to such further period as he may think fit.

#### SCHEDULE XIV

##### **Handling and processing of asbestos, manufacture of any article of asbestos and any other process of manufacture or otherwise in which asbestos is used in any form.**

1. *Application*- This Schedule shall apply to factories in which any of the following processes are carried on:-

- (a) breaking, crushing, disintegrating, opening, grinding, mixture or sieving of asbestos and any other processes involving handling and manipulation of asbestos incidental thereto;
- (b) all processes in the manufacture of asbestos, textiles including preparatory and finishing process;
- (c) making of insulation slabs or sections, composed wholly or partly of asbestos, and processes incidental thereto;
- (d) making or repairing of insulating mattresses, composed wholly or partly of asbestos, and processes incidental thereto;
- (e) manufacture of asbestos cardboard and paper;
- (f) manufacture of asbestos or cement goods;
- (g) application of asbestos by spray method;
- (h) sawing, grinding, turning, abrading and polishing, in the dry state, of articles composed wholly or partly of asbestos; and
- (i) cleaning of any room, vessel, chambers, fixture or appliances for the asbestos dust;

Provided that if the Chief Inspector is satisfied that in respect of any factory or workshop or

part thereof by reason of the restricted use of asbestos or the method of working, or occasional nature of work, or otherwise, all or any the provision of this Schedule can be suspended or relaxed without danger to the health of the persons employed therein, he may be grant suspension or relaxation in writing under such conditions as he may think fit. Any such certificate may be revoked at any time.

2. *Definitions.*- For the purposes of this Schedule-

- (a) "asbestos" means any fibrous silicate mineral, and any admixture containing any such mineral, whether crude, crushed or opened;
- (b) "asbestos textiles" means yarn or cloth composed of asbestos or asbestos mixed with any other material;
- (c) "preparing" means crushing, disintegrating and any other process in or incidental to the opening of asbestos;
- (d) :approved: means approved for the time being in writing by the Chief Inspector; and
- (e) "breathing apparatus" means a helmet or face piece with necessary connection by means of which a person using it can breathe air free from dust, or any other approved apparatus of like nature.

3. *Exhaust draught.*- An exhaust draught effected by mechanical means which prevents the escape of asbestos dust into the air of any room in which person work, shall be provided and maintained for-

- (a) manufacturing and conveying machinery namely:-
  - (i) preparing, grinding or dry mixing machines;
  - (ii) carding, card waste-end, ring spinning machines and looms;
  - (iii) machines or other plant fed with asbestos; and
  - (iv) machines used for the sewing, grinding, turning, abrading or polishing, in the dry state, of articles composed wholly or partly of asbestos;
- (b) cleaning, and grinding or the cylinders or other parts of a carding machine;
- (c) chambers, hoppers or other structures into which loose asbestos is delivered or passed;
- (d) work-benches for asbestos waste sorting or for other manipulation of asbestos by hand;
- (e) workplaces at which the filling or emptying of sacks, skips or other portable containers is carried on and weighing or other process incidental thereto is effected by hand; and
- (f) sack cleaning machines;

provided that this clause shall not apply-

- (i) to a machine or other plant which does not give rise to asbestos dust, or is so enclosed as to prevent escape of asbestos dust into the air of any room in which persons work; or
- (ii) where the asbestos is so wet or so treated with greases or other material as to prevent the evolution of dust; or
- (iii) to the making or repairing of insulating mattresses or;
- (iv) to mixing or blending by hand of asbestos.

4. *Mixing or blending*.- (1) Mixing or blending by hand of asbestos shall not be carried on except with an exhaust draught effected by mechanical means so designed and maintained as to ensure as far as practicable the suppression of dust during the processes.

(2) In premises which are constructed or reconstructed after the date on which this Schedule comes into force, the mixing or blending by hand of asbestos shall not be done except in a special room or place in which no other work is ordinarily carried on.

(3) (a) The making or repairing of insulating mattresses composed wholly or partly of asbestos shall not be carried on in any room in which any other work is done.

(b) In every room in which the making and inlet ventilation in accordance with arrangements to be approved in each case shall be provided and maintained;

(i) adequate exhaust and inlet ventilation in accordance with arrangements to be approved in each case shall be provided and maintained.

(ii) no person other than those engaged in filling, beating or levelling shall be present whilst such processes are being carried on and work shall not be resumed in the room after filling, beating or levelling for at least ten minutes.

(iii) the floors and benches shall be kept dampened so as to prevent dust arising therefrom effectively; and

(iv) the covers shall be effectively dampened immediately after being cut out and in the case of fibre filled mattresses shall be kept damp whilst filling, beating or levelling is being carried on.

(4) (a) Storage chambers or bins for loose asbestos shall, in the case of premises constructed or reconstructed after the date on which this Schedule comes into force, be effectively separated from any workroom and, in the case of other premises be effectively separated from any workroom in which the asbestos is not required for the purpose carried on in the room.

(b) Chambers or apparatus for dust settling and filtering shall not be allowed in any workroom.

(c) Arrangements shall be made to prevent asbestos dust discharged from exhaust apparatus being drawn into the air of any workroom.

(5) All machinery used in preparing, grinding or asbestos carding, card roller cleaning and grinding and sacks cleaning and all cards waste-end machines, lattices, elevators, chutes and conveyors shall be so constructed and maintained that dust or debris containing asbestos cannot escape from any part thereof, other than dust removed by air exhaust draught provided in accordance with paragraph 3 of this Schedule.

(6) (a) Cleaning by hand of the cylinders (including the doffer cylinder) of a carding machine, shall not be done whilst any person other than those performing or assisting at the cleaning is present.

(b) After six months from the date on which this Schedule comes into force, such cleaning as aforesaid shall not be done by means of hand strickles or other hand tools:

Provided that the Inspector or the Chief Inspector may direct such other measures and precautions to be taken as may be considered necessary for safeguarding the health of the workers employed on processes and work specified in paragraph 4.

5. *Maintenance of floors and work places.*- (1) In every room in which any of the requirements of this Schedule apply-

- (a) the floors, work-benches and plant shall be kept in a clean state and free from asbestos debris and suitable arrangements shall be made for the storage of asbestos not immediately required for use; and
- b) the floors shall be kept free from any materials, plant or other articles not immediately required for the work carried on in the room which would obstruct the proper cleaning of the floor.

(2) Every room as aforesaid shall be adequately lighted.

6. *Asbestos sacks not to be cleaned by hand.*- (1) A sack which has contained asbestos shall not be cleaned by hand beating but by a machine, complying with paragraph 3 and subparagraph (5) of paragraph 4.

(2) All sacks used as containers for the purpose of transport of asbestos within the factory shall be constructed of impermeable material and shall be kept in good repair.

7. *Testing of ventilating plant.*- (1) All ventilating plant used for the purpose of extracting or suppressing dust as required by this Schedule shall at least once in every six months be thoroughly examined and tested by a competent person and any defect disclosed by such examination and test shall be rectified forthwith.

(2) A register containing particulars of such examination and test and the state of the plant and the repairs or alterations (if any) found to be necessary shall be kept and shall be available for inspection by an Inspector.

8. *Provision of breathing apparatus.*- A breathing apparatus shall be provided for every person employed-

- a) in chambers containing losses asbestos;
- b) in cleaning of dust settling or filtering chambers or apparatus;
- c) in cleaning the cylinders, including the doffer cylinders, of other parts of the carding machine by means of hand-strickles; and
- d) in filling, beating or leveling in the manufacture or repair of insulating mattresses.

9. *Protective equipments.*- There shall be provided and maintained for the use of all persons employed in the cleaning of dust settling and filtering chambers, tunnels and ducts, suitable overalls and head coverings.

10. *Prohibition of employment of young persons.*- No person who is below 18 years shall be employed in or in connection with the manufacture of insulating mattresses, in mixing or blending of asbestos by hand, in sack cleaning, in chambers or apparatus for dust settling or filtering, in chambers containing loose asbestos, or in stripping or grinding the cylinders including the doffer cylinders or other parts of a carding machine.

11. *Medical examination.*- (1) No worker shall be employed in any factory on any of the processes specified in the paragraph 1, unless he has been medically examined by the Certifying Surgeon and has been declared fit and has been granted a certificate of fitness in Form No. 26.

(2) Every worker employed on any of the aforesaid processes on the date on which this Schedule comes into force shall be medically examined by the Certifying Surgeon within three months of the said date.

(3) Every worker employed on any of the aforesaid processes on the date on which this Schedule comes into force, shall be radiologically examined by a qualified radiologist at the cost of the occupier and the standard size chest X-ray plate shall be submitted to the Certifying Surgeon for medical examination within three months of the said date.

(4) Every worker employed on any of the aforesaid processes shall be medically examined by the Certifying Surgeon at intervals of six months after the first medical examination conducted under sub-paragraphs (1) and (2) and radiologically examined at an interval of 3 years after the first radiological examination conducted under sub-paragraphs (1), (2) and (3):

Provided that if at any time the Certifying Surgeon is of the opinion that any person employed in the said processes is required to be radiologically examined by a qualified Radiologist, he may direct the occupier to arrange for such examination at his cost and then to submit the standard size X-ray plate of the worker to the Certifying Surgeon.

(5) A worker already in employment had declared unfit by the Certifying Surgeon shall not be allowed to work on any of the processes specified in paragraph 1, unless he has been re-examined medically and radiological, and had been certified to be fit to work on the said process again.

(6) A worker declared to be unfit to work on any of the aforesaid processes, any be employed on such other work or process as may be considered safe and as may be advised by the Certifying Surgeon :

Provided that if the Certifying Surgeon declares that a worker has been completely incapacitated and he is not fit to be employed on any process, such worker shall not be allowed to continue to work on any work or process.

(7) The Certifying Surgeon may direct that a worker may be X0ray or he may be subjected to further examination, clinical. Pathological or otherwise or that he should undergo a specified treatment, and it shall be the responsibility of the occupier and manager to arrange for the specified examination and/or treatment and to bear all expenses thereof or in connection therewith.

(8) The Certifying Surgeon shall, after each examination grant a certificate in Form No. 26.

(9) The manager shall maintain all the certificates in a proper register of file and shall produce all the certificates before an Inspector whenever demanded.

(10) The manager shall maintain the details of every medical examination in Form 7 and the register shall be produced before an Inspector whenever demanded.

## SCHEDULE XV

### Handling or manipulation of corrosive substances

1. *Definitions.*- For the purpose of this Schedule –

- (a) “corrosive operation” means an operation of manufacturing, storing, handling, processing, packing or using any corrosive substance in a factory; and
- (b) “corrosive substance” includes sulphuric acid, nitric acid, hydrochloric acid, hydrofluoric acid, carbolic acid, phosphoric acid, liquid chlorine, liquid bromine, ammonia or anhydrous liquid ammonia, sodium hydroxide or potassium hydroxide or mixtures thereof, or any other substance which the Government may by notification in the Official Gazette specify to be a corrosive substance.

2. *Flooring.*- The floor of every workroom of a factory in which corrosive operations is carried on shall be made of impervious, corrosion and fire resistant material and shall be so constructed as to prevent collection of any corrosive substance. The surface of such flooring shall be smooth and cleaned as often as necessary and maintain in a sound condition.

3. *Protective equipment* .- (1) The occupier shall provide for the use of all persons employed in any corrosive operation suitable protective wear for hands and feet, suitable aprons, face shields, chemical safety goggles and suitable respirators. The equipments shall be maintained in good order and shall be kept in clean and hygienic condition by disinfecting them and also suitably treating them to remove the ill effects of any absorbed chemicals. The occupier shall also provide suitable protective creams and other preparations of the workers wherever necessary.

(2) The protective equipment and preparations provided shall be used by the persons employed in any corrosive operation.

4. *Water facilities.*- Where any corrosive operation is carried on, there shall be provided as close to the place of such operation as possible, a source of clean water at a height of 210 centimeters from a pipe of 2.5 centimeters diameter and fitted with a quick acting valve so that in case of injury to the worker by any corrosive substances, the injured part can be thoroughly flooded with water. Whenever necessary, in order to ensure continuous water supply, a storage tank having a minimum length, breadth and height of 210 centimeters and 60 centimeters respectively or such dimensions as are approved by the Chief Inspector places at floor level shall be provided as the source of clean water.

5. *Cautionary notice.*- A cautionary notice in the following form and printed in the language which majority of the workers employed understand, shall be displayed prominently close to the place where a corrosive operation is carried out and where it can be easily and conveniently read by the workers. If any worker is illiterate, effective steps shall be taken to explain carefully to him the contents of the notice so displayed.

#### CAUTIONARY NOTICE

#### DANGER

Corrosive substances cause severe burns and vapours thereof may be extremely hazardous.

Use protective wears.

Incase of contact with corrosive substances immediately flood the affected part of body with plenty of water for at least 15 minutes.

Call for medical attention quickly.

6. *Transport.*- (1) Corrosive substances shall not be filled, moved or carried except in containers shall when they are to be transported, the containers shall be placed in crated of sound construction and of sufficient strength.

(2) A container with a capacity of 10.0 litres or more of a corrosive substance shall be places in a receptacle or crate and then carried by more than one person at a height below the waist line unless a suitable rubber wheeled cart is used for the purpose.

(3) Containers for corrosive substances shall be clearly labelled as such.

7. *Devices for handling corrosive substances.*- (1) Suitable tilting or lifting devices shall be used for emptying jars, carboys and other containers or corrosive substances.

(2) Corrosive substances shall not be handled by bare hands but by means of a suitable scoop or other device.

8. *Opening of valves.*- Valves fitted to containers holding a corrosive substances shall be opened with great care. If they do not work freely, they shall not be forced open. They shall be opened by a worker suitably trained for the purpose.

9. *Cleaning tanks, stills etc.*- (1) In cleaning out or removing residues from stills or other large chambers used for holding any corrosive substance, suitable implements made of wood or other material shall be used to prevent productions of areseniuretted hydrogen (Arsine.)

(2) Whenever it is necessary for the purpose of cleaning or other maintenance work for any worker to enter chamber tank, vat, pit or other confined space where a corrosive substances had been stored all possible precautions required under Section 36 of the Act shall be taken to ensure the worker's safety.

(3) Wherever possible, before repairs are undertaken or any part of equipments in which a corrosive substance was handled, such equipment or part thereof shall be freed of any adhering corrosive substance by adopting suitable methods.

10. *Storage.*- (1) Corrosive substances shall not be stored in the same room with other chemicals, such as turpentine, carbides, metallic powders and combustible materials and cynide salts as the accidental mixing thereof may cause a reaction which is either violent or it may give rise to toxic fumes and gases.

(2) Pumping or filling overhead tanks, receptacles, vats or other containers for storing corrosive substances shall be so arranged that there is no possibility of any corrosive substance shall be so arranged that there is no possibility of any corrosive substance overflowing and causing injury to any person.

(3) Every container having a capacity of twenty litres or more and every pipeline, valve and fitting used for storing or carrying corrosive substances shall be thoroughly examined every year for finding out any defects, and the defects so found out shall be rectified forthwith. A register shall be maintained of every such examination made and shall be produced before the Inspector whenever required.

11. *Fire extinguishers and fire fighting equipment.*- An adequate number of suitable types of fire extinguishers or other fire fighting equipments, depending on the nature of chemicals

stored, shall be provided. Such extinguishers or other equipments shall be regularly tested and refilled. Clear instructions as to how the extinguishers or other equipment should be used, shall be printed in the language which majority of the workers employed understand and shall be affixed near each extinguisher or other equipment. Sufficient number of workers shall be trained in firefighting methods.

12. *Exemption*- If on an application made by the manager of any factory the Chief Inspector is satisfied that owing to the exceptional circumstances, or the frequency of the process or for any other reason to be recorded by him in writing, all or any of the provisions of this Schedule are not considered necessary for the protection of the persons employed therein, he may by a certificate in writing, which he may at any time revoke, exempt the factory from such of the provisions and subject to such conditions as he may specify therein.

## SCHEDULE XVI

### Processing of Cashewnut

1. *Application* .- This Schedule shall apply to all factories in which roasting, scrubbing and shelling of cashewnuts or extracting oil from cashewnuts or cashewnut shells are carried on.

2. *Prohibition of employment of women and young persons*.- No woman or person below 18 years shall be employed in any of the processes specified in paragraph 1 except in shelling of roasted cashewnuts.

3. *Protective clothing and equipment*.- The occupier shall provide and maintain for the use of all persons employed in roasting and scrubbing of cashewnuts or extracting oil from cashewnuts or cashewnut shell.-

- (a) suitable rubber or washable leather gloves;
- (b) suitable type of impervious aprons with sleeves to cover body down to knees and shoulders and
- (c) suitable type of footwear to afford protection to feet and legs against cashewnut oil; and for the workers employed in cashewnut shelling either
- (d) a protective ointment containing 10% of shellac; 55% of alcohol, 10% of sodium perborate; 5% of carbitol and 20% talc; or
- (e) sufficient quantity of kaolin and coconut oil; and
- (f) any other material or equipment which the Chief Inspector of Factories may deem to be necessary for the protection of the workers.

4. *Use of protective clothing and equipment*.- every person employed in processes specified in paragraph 1 shall make use of protective clothing and equipment supplied and arrangements shall be made by the occupier to supervise its use, maintenance and cleanliness.

5. *Disposal of shells, ashes, or oil of cashewnut*.- (1) Shells, ashes or oil of cashewnut shall not be stored in any room in which workers are employed and shall be removed at least twice a day to any pit or enclosed place in the case of shells and ashes and to closed containers kept in a separate room in the case of oil.

(2) No worker shall be allowed to handle shells or oil of cashewnuts without using the protective clothing or equipment provided under paragraph 3 above.

6. *Floors of workrooms.*- The floor of every workroom in which processes specified in paragraph 1 are carried in shall be cleaned daily, and spillage of any cashewnut oil in any workroom shall be washed with soap and cleaned immediately.

7. *Seating accommodation.*- Workers engaged in shelling of cashewnuts shall be provided with adequate seats or work benches which shall be cleaned daily.

8. *Restrooms.*- (1) There shall be provided and maintained for the use of all persons employed in processes specified in paragraph 1, a suitable restroom furnished with sufficient tables and chairs or benches.

(2) Separate lockers shall be provided where food, etc, shall be stored by workers before it is consumed in the restroom.

9. *Food, drinks, etc. prohibited in workrooms.*- No food, drink, pan, supari or tobacco shall be brought or consumed by any worker in any room in which processes specified in paragraph 1 are carried out and no person shall remain in any such room during intervals for meals or rest.

10. *Washing facilities.*- Where roasting, scrubbing and shelling of cashewnut or extracting oil for cashewnuts or cashewnut shells is carried on, there shall be provided and maintained in a clean state and good repair washing facilities, with a sufficient supply of soap, coconut oil, nail brushes and towels at the scale of one tap or stand pipe for every 10 workers, and the taps or stand pipes shall be spaced at a distance not less than 1.2 metres apart.

11. *Time allowed for washing.* – Before each meal and before the end of the day's work, at least ten minutes, in addition to the regular meal times, shall be allowed for washing, to each person employed in processes specified in paragraph 1.

12. *Smoke or gas produced by roasting cashewnuts.*- Where smoke or gas is produced in the operation of roasting, provision shall be made for removing the smoke or gas through a chimney of sufficient height and capacity or by such other arrangements, as may be necessary to prevent the gas or smoke escaping into the air or any place in which workers are employed.

13. *Storage of protective equipment.*- A suitable room or a portion of the factory suitably partitioned off, shall be provided exclusively for the storage of all the protective equipment supplied to the workers and no such equipment shall be stored in any place other than the room or places so provided.

14. *Medical examination.*-(1) Every person employed in processes specified in paragraph 1 shall be examined by the Certifying Surgeon once in every three months, or at such other intervals as may be specified in writing by the Chief Inspector of Factories on a day of which due notice shall be given to all concerned. The Certifying Surgeon shall examine and certify the workers in the premises of the factory.

(2) Every person employed shall present himself at the appointed time for examination by the Certifying Surgeon as provided in sub-paragraph (1).

(3) A health register in Form 7 containing the names of all persons employed in the process specified in paragraph 1 shall be kept.

(4) The Certifying Surgeon shall record the results of the examination against the name of each worker in the health register.

(5) No person whose services have been suspended on health grounds shall be employed in any process specified in paragraph 1, without the written sanction from the Certifying Surgeon duly entered in the health register.

(6) The occupier shall appoint a person trained in first aid who shall inspect daily the hands and feet of the persons employed in processes specified in paragraph 1. The occupier shall keep a record of such inspections in a register in a form approved by the Chief Inspector and any cases of blistering shall be brought to the notice of the Certifying Surgeon who shall direct them for such treatment as may deem to be necessary.

(7) The first-aid box shall also contain Burrow's solution 1 to 20 and aqueous solution tannic acid 10% for treatment of cases of dermatitis.

10. Exemption.- The Chief Inspector may grant exemption from the operation of any of these provisions if he is satisfied that their observance is not necessary for safeguarding the health of the workers.

## SCHEDULE XVII

### **Compression of oxygen and hydrogen produced by electrolysis of water or by steam iron process.**

1. *Definitions.*- For the purposes of this Schedule "compression of oxygen and hydrogen" means any process by which oxygen or hydrogen is manufactured or evolved by electrolytic process or by steam iron process.

2. *Applications.*-This Schedule applies in respect of factories or any part thereof in which the process of compression of oxygen and hydrogen is carried on.

3. *Situation of Electrolyser Plant room etc.*- The room in which electrolyser plant is installed shall be separate from the plant for storing and compressing oxygen and hydrogen. The room in which electric generator and the distribution panel are installed shall not communicate with any other room in which any process is carried on.

4. *Testing of purity.*- (1) The purity of oxygen and hydrogen shall be tested by a competent person at least once in every shift at the following posts:-

- (a) In the electrolysis room;
- (b) At the gasholder inlet; and
- (c) At the suction end of the compressor:

Provided, however, that if the electrolyser plant is fitted with automatic recorder of purity of oxygen and hydrogen with alarm lights, it shall be sufficient if the purity of gases is tested at the suction end of the compressor only.

(2) The purity figures obtained as a result of the test shall be entered in a register and signed by the persons carrying out such tests.

5. *Restriction as to the compression.*- The oxygen and hydrogen gases shall not be compressed if their purity as determined under paragraph 4 above falls below 98% at any time.

6. *Limit switch for gasholder.*- The bell of any gasholder shall not be permitted to go within 30 centimeters of its lowest position when empty and a limit switch shall be fitted to the gas holder in such manner as to switch off the compressed motor when the limit is reached.

7. *Provisions of negative pressure switch.*- In addition to the limit switch in the gasholder, a sensitive negative pressure switch shall be provided in or adjacent to the suction main for hydrogen, close to the gasholder and between the gasholder and the hydrogen compressor, to switch off the compressor motor in the event of the gasholder being emptied to such an extent as to cause vacuum.

8. *Purity of raw material.*- The water and caustic soda used for making lye shall be chemically pure within pharmaceutical limits.

9. *Precautions against reversal of polarity.*- Electrical connections at the electrolyser cells and at the electric generator terminals shall be so constructed as to preclude the possibility of wrong connections leading to the reversal of polarity and in addition an automatic device shall be provided to cut off power in the event of reversal of polarity owing to wrong connections either at the switch board or the electric generator terminals.

10. *Colouring of gas pipes.*- Oxygen and hydrogen gas pipes shall be painted with distinguishing colours and in the event of leakage at the joint of hydrogen gas pipe, the pipe, and storage system after repairs and reconnection carried out as per paragraph 13 of this Schedule and in accordance with the provisions of rule 84 shall be purged of all air and gases using a suitable inert gas before drawing in hydrogen gas. Before drawing in hydrogen gas in any new or existing system which was not in use every pipe, gas-holder or compressed gas vessel in the said system shall be purged of all air and gases by using a suitable inert gas.

11. *Use of flameproof fittings.*- All electrical wiring and apparatus, wherever hydrogen gas is generated, compressed, transferred or stored, shall be of flameproof construction or enclosed in flameproof fittings and no naked light or flame shall be allowed to be taken either in the electrolyser room or where compression and filling of the gases is carried on an warning notices shall be exhibited in prominent places to that effect.

12. *Prohibition of hot work.*- No part of the electrolyser plant or the gasholder or compressor shall be subjected to welding, brazing, soldering or cutting until steps have been taken to remove any explosive substance shall be allowed to enter that part until the metal has cooled sufficiently to prevent risk of explosion.

13. *Repair, etc. to be done under supervision.*- No work of operation, repair or maintenance shall be undertaken except under the direct supervision of a person who, by his training, experience and knowledge of the necessary precautions against risk of explosion is competent of supervise such work, No electric generator after erection or repairs shall be switched on to the electrolyser unless the same is certified by competent persons under whose direct supervision, erection or repairs are carried on to be in a safe condition and the terminals have been checked for the polarity as required by paragraph 9.

14. *Examination of the plant.*- Every part of the electrolyser plant and the gas holders and compressor shall be inspected, checked and overhauled in accordance with a regular schedule maintained by the Manager complying with the paragraph 13. Every defect noticed shall be rectified forthwith.

## SCHEDULE XVIII

### **Process of extracting oils and fats from vegetable and animal sources in solvent extraction plants**

1. *Definitions.*- For the purposes of this Schedule-

- (a) “solvent extraction plant” means a plant in which the process of extracting oils and fats from vegetable and animal sources by use of solvents is carried on;
- (b) “solvent” means an inflammable liquid such as pentane, hexane and heptane used for the recovery of vegetable oils;
- (c) “flameproof enclosure” as applied to electrical machinery or apparatus means an enclosure that will withstand, when covers or other access doors and properly secured, an internal explosion of the inflammable gas or vapour which may enter or which may originate inside the enclosure without suffering damage and without communicating internal inflammation (or explosion) to the external inflammable gas or vapour;
- (d) “competent person” for the purpose of this Schedule shall be at least a Member of the Institution of Engineers (India) or an Associate Member of the said Institution with 10 years experience in a responsible position as may be approved by the Chief Inspector.

Provided that a graduate in mechanical engineering or chemical technology with specialised knowledge of oils and fats and with a minimum experience of 5 years in a solvent extraction plant shall also be considered to be a competent person:

Provided further that the Government may accept any other qualifications which in its opinion are equivalent to the qualifications aforesaid.

2. *Location and layout.* — (1) No solvent extraction plant shall be permitted to be constructed or extended to within a distance of 30 meters from the nearest residential locality.

(2) A 1.5 meters high continuous wire fencing shall be provided around the solvent extraction plant upto a minimum distance of 15 meters from the plant.

(3) No person shall be allowed to carry any matches or an open flame or fire inside the area bound by the fencing.

(4) Boiler houses and other buildings where open flame processes are carried on shall be located at least 30 meters from the solvent extraction point.

(5) If godowns and preparatory process are at a distance of less than 30 meters from the solvent extraction plant, these shall be at least 15 metres distance from the plant, and a continuous barrier wall of non-combustible material 1.5 meters high shall be erected at a distance of not less than 15 meters from the solvent extraction plant so that it extends to at least 30 meters of vapour travel around its ends from the plant to the possible source of ignition.

3. *Electrical installations.*- (1) All electrical motors and wiring and other electrical equipments installed or housed in solvent extraction plant shall be of flameproof construction.

(2) All metal parts of the plant and building including various tanks and containers where solvents are stored or are present and all parts of electrical equipment not required to be energised shall be properly bonded together and connected to earth so as to avoid accidental rise in the electrical potential of such parts above the earth potential.

4. *Restriction on smoking.*- Smoking shall be strictly prohibited within 15 meters distance from solvent extraction plant. For this purpose, “No Smoking” signs shall be permanently displayed in the area.

5. *Precautions against friction.*- (1) All tools and equipments including ladders, chains and other lifting tackle required to be used in solvent extraction plant shall be of non-sparking type.

(2) No machinery or equipment in solvent extraction plant shall be belt driven unless the belt used is of such a type that it does not permit accumulation of static electricity to a dangerous level.

(3) No person shall be allowed to enter and work in the solvent extraction plant if he is wearing clothes made of nylon or such other fibre that can generate static electrical charge, or wearing footwear which is likely to cause sparks by friction.

6. *Fire fighting apparatus.*- (1) Adequate number of portable fire extinguishers suitable for use against inflammable liquid fires shall be provided in the solvent extraction plant.

(2) An automatic water spray sprinkler system on a wet pipe or open-head deluge system with sufficient supply of storage water shall be provided over solvent extraction plant and throughout the building which is housing such a plant.

7. *Precautions against power failure.*- Provision shall be made for the automatic cutting off of steam in the event of power failure and also for emergency overhead water supply for feeding water by gravity to condensers which shall come into play automatically with the power failure.

8. *Magnetic separators.*- Oil cake shall be fed to the extractor by a conveyor through a hopper and a magnetic separator shall be provided to remove any pieces of iron during its transfer.

9. *Venting.*- (1) Tanks containing solvents shall be protected with emergency venting to relieve excessive internal pressure in the event of fire.

(2) All emergency relief vents shall terminated at least 6 meters above the ground and be so located that vapours will not re-enter the building in which solvent extraction plant is located.

10. *Waste water.*- Process water shall be passed through a flash evaporator to remove any solvent before it is discharged into a sump which should be located within the fenced area but not closer than 8 meters to the fence.

11. *Ventilation.*- The solvent extraction plant shall be well ventilated and if the plant is housed in a building, the building shall be provided with mechanical ventilation with provision for at least six air changed per hour.

12. *Housekeeping.*- (1) Solvent shall not be stored in an area covered by solvent extraction plant except in small quantities which shall be stored in approved safety cans.

(2) Waste materials such as oily rags, other wastes and absorbants used to wipe off solvent and paints and oils shall be deposited in approved containers and removed from the premises at least once a day.

(3) Space within the solvent extraction plant and within 15 meters from the plant shall be kept free from any combustible materials and any spills of oil or solvent, shall be cleaned up immediately.

13. *Examination and repairs.* -(1) The solvent extraction plant shall be examined by the competent person to determine any weakness or corrosion and wear once in every 12 months. Report of such examination shall be supplied to the Inspector with his observation as to whether or not the plant is in safe condition to work.

(2) No repairs shall be carried out to the machinery or plant except under the direct supervision of the competent person.

(3) Facility shall be provided for purging the plant with inert gas before opening the same for cleaning or repairs and before introducing solvent therein after repairs.

14. *Operating personnel.*- The operation of the plant and machinery in the solvent extraction plant shall be in the charge of such duly qualified and trained persons as are certified by the competent person to be fit for the purpose and no other person shall be allowed to operate the plant and machinery.

15. *Employment of women and young persons.*- No woman or person below 18 years shall be employed in the solvent extraction plant.

16. *Vapour detection.*- A suitable type of flameproof and portable combustible gas indicator shall be provided and maintained in good working order and a schedule of routine sampling of atmosphere at various locations as approved by the Chief Inspector shall be drawn out and entered in a register maintained for the purpose.

17. *Exemption.*- If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reasons, all or any of the provisions of this schedule is not necessary for the protection of the workers in the factory, the Chief Inspector may, by a certificate in writing, which he may revoke at any time, exempt such factory from all or any of such provisions subject to such conditions as he may specify therein.

## SCHEDULE XIX

### **Manufacture or manipulation of manganese and its compounds**

1. *Application.*- This Schedule shall apply to every factory in which or in any part of which any manganese process is carried on.

2. *Definitions.*- For the purposes of this Schedule-

- (a) “manganese process” means processing, manufacture or manipulation of manganese or any compound of manganese or any ore or any mixture containing manganese;
- (b) “first employment” means first employment in any manganese process and includes also re-employment in any manganese process following any cessation of employment for a continuous period exceeding 3 calendar months;
- (c) “manipulation” means mixing, blending, filling, emptying, grinding, sieving, drying, packing, sweeping or otherwise handling of manganese or a compound of manganese, or any ore or any mixture containing manganese or a compound manganese; and

(d) “efficient exhaust ventilation” means localised ventilation effected by mechanical means for the removal of dust or fume or mist at its source of origin so as to prevent it from escaping into the atmosphere of any place where any work is carried on. No draught shall be deemed to be efficient which fails to remove the dust or fume or mist at the point where it is generated and fails to prevent it from escaping into an spreading into the atmosphere of a work place.

3. *Isolation of a process.*- Every manganese process which may gives rise to dust, vapour or mist containing manganese, shall be carried on in a totally enclosed system or otherwise effectively isolated from other processes so that plants and processes and other parts of the factory and persons employed on other processes may not be affected by the same.

4. *Ventilation of process.*- No process in which any dust, vapour or mist containing manganese is generated, shall be carried out except under an efficient exhaust ventilation which shall be applied as near to the point of generation as practicable.

5. *Personal protective equipment.*- (1) The occupier of the factory shall provide and maintain in good and clean condition suitable overalls and head coverings for all persons while working on a manganese process.

(2)The occupier of the factory shall provide suitable respiratory protective equipment for use by workers in emergency to prevent inhalation of dusts, fumes or mists. Sufficient number of complete sets of such equipment shall always be kept near the work place and the same shall be properly maintained and kept always in a condition to be used readily.

(3) The occupier shall provide and maintained for the use of all persons employed, suitable accommodation for the storage of personal protective equipments and make adequate arrangement for cleaning and maintenance thereof.

6. *Prohibition relating to women and young persons.*- No woman or person below 18 years shall be employed or permitted to work in any manganese process.

7. *Food, drinks, etc. prohibited in the work rooms.*- No food, drink, pan and supari or tobacco shall be allowed to be brought into or consumed by any worker in any workroom in which any manganese process is carried on.

8. *Messroom.*- There shall be provided and maintained for the use of the persons employed in a manganese process a suitable messroom which shall be furnished with sufficient tables and benches and adequate means for warming of food. The messroom shall be placed under the charge of a responsible person and shall be kept clean.

9. *Washing and bathing facilities.*- The following washing and bathing facilities shall be provided and maintained in clean state and in good repair for the use of all persons employed in manganese process:-

- (a) A wash place under cover with clean towels, soap and nail brushes and with at least one stand pipe for every ten such persons having constant supply of water.
- (b) 50 per cent of the stand pipes provided under item (a) above may be located in bathroom where water shall be made available during the working hours of the factory and for one hour thereafter.
- (c) Clean towels to be provided individually to each worker and also a supply of hot water if so ordered by an Inspector.

(d) In addition to taps mentioned under item (a) one stand pipe in which warm water is made available to be provided on each floor.

10. *Cloakroom.*- If the Chief Inspector so required, there shall be provided and maintained for the use of persons employed in manganese process, a cloakroom for clothing put off during working hours with adequate arrangements for drying the clothing.

11. *Cautionary placard and instructions.*- Cautionary notices in the form specified in appendix and printed in the language of the majority of the workers employed, shall be affixed in prominent places in the factory where they can be easily and conveniently read by the workers and arrangement shall be made by the occupier to instruct periodically all workers employed in a manganese process regarding the health hazards connected with their duties and the best preventive measures and methods to be adopted to protect themselves. The notices shall always be maintained in legible condition.

12. *Medical facilities.*- (1) The occupier of the factory shall appoint a qualified Medical Practitioner whose appointment shall be subject to confirmation by the Chief Inspector. The qualified Medical Practitioner so appointed shall be called 'Appointed Doctor'

(2) The occupier shall provide for the purpose of Medical Examination a room at the factory premises for exclusive use by appointed Doctor. The room shall be suitably lighted, ventilated and furnished with a screen, a table (with writing materials), chairs and facilities, equipments, and instruments for examination and investigation. Such facilities shall be subject to the approval by the Medical Inspector of Factories.

(3) The appointed Doctor shall carry out pre-employment examination of every person intended to be employed in manganese process. All workers employed in manganese process shall be examined by the appointed Doctor at an interval not exceeding three months and records of such examinations shall be maintained in a form approved by the Chief Inspector and shall be made available to any Inspector on demand.

(4) The occupier and the appointed Doctor of the factory shall notify forthwith any case or suspected case of poisoning by manganese to the Chief Inspector and Medical Inspector of Factories.

13. *Medical examination.*- (1) Every person employed in a manganese process shall be medically examined by the Certifying Surgeon within 14 days of his first employment and thereafter at intervals of not more than three months.

(2) If a person medically examined is found fit for employment on a manganese process the Certifying Surgeon, shall grant a certificate of fitness in Form No. 26 which shall be kept in the custody of the manager of the factory. The certificate shall be readily produced by the manager whenever required by any Inspector, and the person granted such a certificate shall be provided with a token made of metal with the number of the certificate inscribed thereon and the said person shall always carry the said token on the person while at work.

(3) If a person is found unfit for work in any manganese process, the Certifying Surgeon shall grant a certificate to that effect and such person shall not be allowed to work in any manganese process.

- (4) (a) If the Certifying Surgeon finds that any worker who has been granted a certificate of fitness at a previous medical examination is no longer fit to be employed on any manganese process, he may revoke the previous certificate and no person whose certificate of fitness has been so revoked shall be allowed to work on any manganese process.
- (b) The Certifying Surgeon may require such person to be produced before him for fresh medical examination after such period as he may specify in writing on the revoked certificate and duly entered in the health register.
- (5) If the Certifying Surgeon is of the opinion that a person had become permanently unfit for employment on any manganese process, he shall make an entry to that effect in the certificate and also in the health register and no such process.
- (6) If the Certifying Surgeon is of the opinion that any special expert examination or test is necessary for a proper diagnosis in a doubtful case, he may direct the manager and/or the occupier to get the worker examined by such expert, or to get such test carried out as may be specified by him and the manager or the occupier as the case may be, shall comply with the direction given within a specified time and produce the report of the examination or test as the case may be, before the Certifying Surgeon.
- (7) If the Certifying Surgeon is of the opinion that any person is not fit for employment in any manganese process but is fit to be employed on any other work he may advise the manager or the occupier to employ the said person on such other job as may be safe for him. The Certifying Surgeon may also advise the worker to undergo such treatment as he may consider necessary.
- (8) If any person has any doubt regarding the diagnosis or decision of the Certifying Surgeon he may make an appeal to the Chief Inspector and the Chief Inspector may refer the case to the Medical Inspector of Factories or to a Medical Committee constituted by him for this purpose of which the Medical Inspector of Factories shall be a member. The decision of the Medical Inspector or the Committee as the case may be, shall be final in the matter.
14. *Exemption.*- If in respect of any factory, the Chief Inspector is satisfied that owing to any exceptional circumstances, or infrequency of the process, or for any other reason, application of all or any of the provisions of this Schedule is not necessary for the protection of the person employed in such factory he may, by an order in writing which he may at his discretion revoke, exempt such factory from all or any of the provisions on such conditions and for such period as he may specify in the said order.

## APPENDIX

### CAUTIONARY NOTICE.

#### **Manganese and manganese compound**

1. Dust fumes and mists of manganese and its compounds are toxic when inhaled or when ingested.
2. Do not consume food or drink near the work place.
3. Take a good wash before taking meals.
4. Keep the working area clean.

5. Use the protective clothing and equipment provided.
6. When required to work in situation where dust, fumes, or mists are likely to be inhaled, use respiratory protective equipment provided for the purpose.
7. If you get severe headaches, prolonged sleeplessness or abnormal sensations on the body, report to the manager who would make arrangements for your examination and treatment.

## SHEDULE XX

### **Manufacture or manipulation of dangerous pesticides**

1. *Application.*- This Schedule shall apply in respect of all factories or any part thereof in which the process of manufacture or manipulation of dangerous pesticide hereinafter referred to as the said manufacturing process is carried on.

2. *Definition.*- For the purpose of this Schedule-

- (a) “dangerous pesticides” means any product proposed or used for controlling, destroying or repelling any pest or for preventing growth or mitigating effects of growth of such pests including in the list of Appendix I to this Schedule and also as covered under the Insecticides Act, 1968 and the rules made thereunder and any other product, as may be declared as a dangerous pesticides from time to time by the Chief Inspector in writing;
- (b) “manipulation” includes mixing, blending, formulating, filling, emptying, packing or otherwise handling.
- (c) “efficient exhaust draught” means localised mechanical ventilation for removal of smoke, gas, vapour, dust, fume or mist so as to prevent them from escaping into the air any work room in which work is carried on. No exhaust draught shall be considered efficient if it fails to remove smoke generated at the point where such gas, fume, dust, vapour or mist originates from the process;
- (d) “first employment” means first employment in any manufacturing process to which this Schedule applies and shall also include re-employment in the said manufacturing process following any cessation of employment for a continuous period exceeding three calendar months; and
- (e) “suspension” means suspension of persons from employment in any process wherein a dangerous pesticide is manipulated by written certificate in the health register in Form 7 signed by the Certifying Surgeon who shall be competent to suspend all persons employed in such process.

3. *Instruction to workers.*- Every worker at his first employment shall be fully instructed about the properties including dangerous properties of the chemicals handled in the said manufacturing process and the hazards involved thereunder. The employees shall also be instructed about the measures to be adopted to deal with any emergency. Such instructions shall be repeated periodically.

4. *Cautionary notice and placards.*- Cautionary notices and placards in the form specified in appendix II to this Schedule and printed in the language of the majority of the workers shall be displayed in all work places in which said manufacturing process is carried on so that they can be easily and conveniently read by the workers. Arrangements shall be made by the

occupier and the manager of the factory to periodically instruct the workers regarding the health hazards arising in the said manufacturing process and the methods of protection therefrom. Such notices shall include brief instructions regarding the periodical clinical tests required to be undertaken for protecting health of the workers.

5. *Prohibition relating to employment of women or young persons.*- No woman or person below 18 years shall be employed or permitted to work in any room in which the said manufacturing process is carried on or in any room in which dangerous pesticide is store.

6. *Food, drinks and smoking prohibited.*- (1) No food, drinks, tobacco, pan or supari shall be brought into or consumed by any worker in any workroom in which the said manufacturing process is carried out.

(2) Smoking shall be prohibited in any workroom in which the said manufacturing process is carried out.

7. *Protective clothing and protective equipments.*- (1) Protective clothing consisting of long pants and shirts or overalls with long sleeves and head covering shall be provided for all workers employed in the said manufacturing process.

(2) (a) Protective equipment consisting of rubber gloves, gum boots, rubber aprons, chemical safety goggles and respirators shall be provided for all workers employed in the said manufacturing process.

(b) Where the pesticides contain oil gloves, boots and aprons used shall be made from synthetic rubber.

(3) Protective clothing and equipment shall be worn by the workers supplied with such clothing and equipment.

(4) Protective clothing and equipment shall be washed daily both inside and outside if the workers handle pesticides containing nicotine or phosphorous and shall be washed frequently if they handle other pesticides.

(5) Protective clothing and equipment shall be maintained in good repair.

8. *Floors and workbenches.*- (1) Floors in every workroom where dangerous pesticides are manipulated shall be of cement or other impervious material giving a smooth surface.

(2) Floors shall be maintained in good repair and shall be provided with adequate slope leading to a drain and thoroughly washed once a day with hose pipe.

(3) Workbenches where dangerous pesticides are manipulated shall be made of smooth, non-absorbing material preferably stainless steel and shall be cleaned at least once daily.

9. *Spillage and waste.*- (1) If a dangerous pesticide during its manipulation splashes or spills on the workbench, floor or on the protective clothing worn by a worker, immediate action shall be taken in such areas or articles.

(2) Cloth, rags, paper or other material soaked or soiled with dangerous pesticide shall be deposited in a suitable receptacle with tight fitting cover. Contaminated waste shall be destroyed by burning it at least once a week.

(3) Suitable deactivating agents, where available, shall be kept in a readily accessible place for use while attending to a spillage.

(4) Easy means of access shall be provided to all parts of the plant for cleaning,

maintenance and repairs.

10. *Empty containers used for dangerous pesticides.*- Containers used for dangerous pesticide shall be thoroughly cleaned of their contents and treated with a deactivating agent before being discarded or destroyed.

11. *Manual handling.*- (1) A dangerous pesticides shall not be required or allowed to be manipulated by hand except by means of a long handle scoop.

(2) Direct contact of any part of the body with a dangerous pesticide during its manipulation shall be avoided.

12. *Air space.*- In every room in which the said manufacturing process is carried on, there shall be at least 15 cubic meters of air space, excluding any space occupied by machinery equipment or any other articles, for any person employed therein, and in computing this air space no height over 3.5 metres shall be taken into account.

13. *Ventilation.*- (1) In very workroom or area where a dangerous pesticide is manipulated, adequate ventilation shall be provided at all times by the circulation of fresh air.

(2) Unless the process is completely enclosed in an airtight chamber the following operations during manipulation of a dangerous pesticide shall not be undertaken without an efficient exhaust draught-

- (a) emptying a container holding a dangerous pesticide;
- (b) blending a dangerous pesticide;
- (c) preparing a liquid or powder formulation containing a dangerous pesticide; and
- (d) changing or filling a dangerous pesticide into a container, tank hopper or machine or small sized containers.

(3) In the event of a failure of the exhaust draught as provided above the said operations shall be stopped forthwith.

14. *Time allowed for washing.*- (1) Before each meal and before the end of the day's work at least ten minutes in addition to the regular rest intervals shall be allowed for washing to each worker engaged in the manipulation of dangerous pesticide.

(2) Every worker engaged in the manipulation of dangerous pesticides shall have a thorough wash before consuming any food and also at the end of the day's work.

15. *Washing and bathing facilities.*- (1) There shall be provided and maintained in a clean state and in good repair for the use of all workers employed in the factory where the said manufacturing process is carried on, adequate washing and bathing places having a constant supply of water under cover at the rate of one such place for every 5 persons employed.

(2) The washing place shall have standpipes place at intervals of not less than one meter.

(3) Not less than one half of the total number of washing places shall be provided with bathrooms.

(4) Sufficient supply of clean towels made of suitable material shall be provided.:

Provided that such towels shall be supplied one for each worker if so ordered by the Inspector.

(5) Sufficient supply of soap and nails brushes shall be provided.

16. *Cloakroom*.- There shall be provided and maintained for the use of all workers employed in the factory where the said manufacturing process is carried on.-

- (a) a cloakroom for clothing out off during working hours with adequate arrangements for drying the said clothing, if wet; and
- (b) separate and suitable arrangements for the storage of protective clothing provided in paragraph 7.

17. *Messroom*.- (1) There shall be provide and maintained for the use of all workers employed in the factory in which the said manufacturing process is carried on and remaining on the premises during the rest intervals, a suitable messroom which shall be furnished with-

- (a) sufficient tables and benches with back rest, and
- (b) adequate means for warming food.

(2) The messroom shall be place under the charge of a responsible person and shall be kept clean.

18. *Manipulation not to be undertaken*.- Manufacture or manipulation of a pesticide shall not be undertaken in any factory unless a certificate regarding its dangerous nature or otherwise is obtained from the Chief Inspector.

19. *Medical examination*.- (1) (a) Every worker employed in the said manufacturing process shall be examined by the Certifying Surgeon within seven days of the first employment and no worker shall be allowed to work unless certified fit for such employment by the Certifying Surgeon.

- (b) Every worker employed in the said manufacturing process shall be re-examined by the Certifying Surgeon at least once in every 3 calendar months.
- (c) Due notice shall be given to the Certifying Surgeon and the concerned workers regarding the arrangements for examination of workers employed in the said manufacturing process after obtaining the consent regarding the arrangements from the Certifying Surgeon.
- (d) A health register in Form 7 containing names of all workers employed in the said manufacturing process shall be maintained.
- (e) No persons whose services have been suspended on health grounds shall be re-employed without written sanction from the Certifying Surgeon entered in or attached to the health register.

(2) The Chief Inspector may order suitable clinical test or tests to be carried out a specified intervals in respect of workers in any factory where such manufacturing process is carried on. Charges for such test or tests shall be borne by the employer.

20. *Medical facilities*.- (1) The occupier shall engage a qualified medical practitioner approved by the Chief Inspector who shall examine and when necessary treat on the premises of the factory, all workers who are employed in the said manufacturing process, for effects of excessive absorption of the dangerous pesticides at least once a week.

(2) The occupier shall make necessary arrangement to ensure quick availability of qualified medical practitioner in emergency.

(3) The occupier shall provide medicines and antidotes and other equipments required for

treatment of excessive absorption of dangerous pesticides.

(4) Records of such examinations and treatments and test shall be maintained in a form approved by the Chief Inspector and shall be made available to the Inspector for inspection.

(5) Every worker in any factory where the said manufacturing process is carried on, shall undergo the prescribed examinations, tests and treatments.

21. *Exemption.*- If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or the infrequency of the said manufacturing process or for any other reason which he shall record in writing, all or any of the provisions of this Schedule are not necessary for the protection of the workers employed in the said factory, he may by a certificate, in writing, exempt such factory, from all or any of the provisions of such condition as he may specify therein. Such certificate may at any time be revoked by the Chief Inspector after recording his reasons thereof.

## APPENDIX I

### List of dangerous pesticides

Parthion  
Diazinon  
Hexaethyl tetraphosphate  
Tetraethyl pyrophosphate  
Tetraethyl ditriopyrosphate  
Demeton (systex)  
Schradan (OMPR)  
Para-Oxon (E.600)  
Methyl Parathion  
Dimefox  
Sulphotepp  
EPN  
Nicotine or its compounds  
Mercury compounds  
Methyl bromide  
Cyanides  
Chlordane  
Endrin  
Aldrin  
Dieldrin  
Texaphene

Dinitro-o-cresol  
Arsenical compounds  
Cryolite  
Pentachlorophenol.

APPENDIX II  
**CAUTIONARY NOTICE**  
**Insecticides and pesticides.**

1. Chemicals handled in this plant are poisonous substances.
2. Smoking, eating food or drinking, chewing tobacco in this area is prohibited. No food stuff or drink shall be brought in this area.
3. Some of these chemicals may be absorbed through skin and may cause poisoning.
4. A good bath shall be taken before meals.
5. A good bath shall be taken at the end of the shift.
6. Protective clothing and equipments supplied shall be used while working in this area.
7. Containers of pesticides shall not be used for keeping food stuffs.
8. Spillage of the chemicals on any part of the body or on the floor or work-bench shall be immediately washed away with water.
9. Clothing contaminated due to splashing shall be removed immediately.
10. Scrupulous cleanliness shall be maintained in this area,
11. Do not handle pesticides with bare hands, use scoops provided with handle.
12. In case of sickness like nausea, vomiting, giddiness, the manager should be informed who will make necessary arrangements for treatment.
13. All workers shall report for the prescribed medical tests regularly to protect their own health.

SCHEDULE XXI  
**Manufacture, handling and usage of benzene and substances containing Benzene**

1. *Application.*- This Schedule shall apply in respect of factories or parts thereof in which benzene or substances containing benzene are manufactured, handled or used.
2. *Definitions.*- For the purpose of this Schedule –
  - (a) “substances containing benzene” means substances wherein benzene content exceeds 1 per cent by volume’
  - (b) “substitute” means a chemical which is harmless or less harmful than benzene and can be used in place of benzene;
  - (c) “enclosed system” means a system which will not allow escape of benzene vapour to

the working atmosphere; and

- (d) “efficient exhaust draught” means localised ventilation effected by mechanical means for the removal of gases, vapour and dusts or fumes so as to prevent them from escaping into the air of any workroom. No draught shall be deemed to be efficient if it fails to remove smoke generated at the point where such gases, vapours, fumes or dusts originate.

3. *Prohibition and substitution* .- (1) Use of benzene and substances containing benzene is prohibited in the following processes.

- (a) manufacture of varnishes, paints and thinners; and  
(b) cleaning and degreasing operations.

(2) Benzene or substances containing benzene shall not be used as a solvent or diluent unless the process in which it is used is carried on in an enclosed system or unless the process is carried on in a manner which is considered equally safe as if it were carried out in an enclosed system.

(3) Where suitable substitutes are available, they shall be used instead of benzene or substances containing benzene. This provision, however shall not apply to the following processes:-

- (a) production of benzene;  
(b) process where benzene is used for chemical synthesis and  
(c) motor spirits (used as fuel)

(4)The Chief Inspector may, subject to confirmation by the Government, permit exemptions from the percentage laid down in sub-paragraph 2 (a) and also from the provisions of sub-paragraph (3) of this paragraph temporarily under conditions and within limits of time to be determined after consultation with the employers and workers concerned.

4. *Protection against inhalation* .- (1) The process involving the use of benzene or substances containing benzene shall be as far as practicable carried out in an enclosed system.

(2) Where, however, it is not practicable to carry out the process in an enclosed system, the workroom in which benzene or substance containing benzene are used shall be equipped with an efficient exhaust draught or other means for the removal of benzene vapours to prevent their escape into the air of the workroom so that the concentration of benzene in the air does not exceed 25 part per million by volume or 80 milligrams per cubic meter.

(3) Air analysis for the measurements of concentration of benzene vapours on air shall be carried out every 8 hours or at such intervals as may be directed by the Chief Inspector at place where process involving use of benzene is carried on and the result of such analysis shall be recorded in a register specially maintained for this purpose. If the concentration of benzene vapours in air as measured by air analysis, exceed 25 parts per million by volume or 80 milligrams per cubic meter, the manager shall forthwith report the concentration of the Chief Inspector stating the reasons for such increase.

(4) Workers who for special reasons are likely to be exposed to concentration of benzene in the air of the workroom exceeding the maximum referred to in sub-paragraph (2) shall be provided with suitable respirators or face masks. The duration of such exposure shall be limited as far as possible.

5. *Measures against skin contact.*-(1) Workers who are likely to come in contact with liquid benzene or liquid substances containing benzene shall be provided with suitable gloves, aprons, boots and where necessary vapour tight chemical goggles, made of material not affected by benzene or its vapour.

(2) The protective wear referred to in sub-paragraph (1) shall be maintained in good conditions and inspected regularly.

6. *Prohibition relating to employment of women and young persons.*- No woman or person below 18 years shall be employed or permitted to work in any workroom involving exposure to benzene or substances containing benzene.

7. *Labelling.*- Every container holding benzene or substances containing benzene shall have the word "Benzene" and approved danger symbols clearly visible on it and shall also display information on benzene content, warning about toxicity and warning about inflammability of the chemicals.

8. *Improper use of benzene.*- (1) The use of benzene or substances containing benzene by workers for cleaning their hands or their work clothing shall be prohibited.

(2) Workers shall be instructed on the possible dangers arising from such misuse.

9. *Prohibition of consuming food, etc in workroom.* – No worker shall be allowed to store or consume food or drink in the workroom in which benzene or substances containing benzene are manufactured handled or uses. Smoking and chewing tobacco or pan shall be prohibited in such workroom.

10. *Instructions as regards risks.*- Every worker on his first employment shall be fully instructed on the properties of benzene or substances containing benzene which he has to handle and of the danger involved thereunder. Workers shall also be instructed on the measures to be taken to deal with a an emergency.

11. *Cautionary notices.*- Cautionary notices in the form specified in appendix and printed in the language easily read and understood by the majority of the workers shall be displayed in prominent places in the workrooms where benzene or substance containing benzene are manufactured, handled or used.

12. *Washing facilities, cloakroom and messroom.*- In factories in which benzene or substances containing benzene are manufactured, handled or used, the occupier shall provide and maintain in a clean state and in good repair.

- (a) washing facilities under cover, of the standard of at least one tap for every 10 persons having constant supply of water with soap, and a clean towel provided to each individual worker if so ordered by the Inspector.
- (b) A cloakroom with lockers for each worker, having two compartments – one for street-clothing and one for work-clothing; and
- (c) A messroom furnished with tables and benches with means for warming food, provided that where a canteen or other parts arrangements exist for the workers to take their meals, the requirements of messroom shall be dispensed with.

13. *Medical examinations.*- (1) Every worker who is to be employed in process involving use of benzene or substances containing benzene, shall undergo.

- (a) a thorough pre-employment medical examination including a blood test for fitness for employment by a Certifying Surgeon; and
  - (b) periodical medical examination including blood test and other biological tests at intervals of every 6 months by the factory medical officer with the assistance of a laboratory.
- (2) Certificates of pre-employment medical examination and periodical medical examination including tests, shall be entered in a health register in Form 7 which shall be produced on demand by an Inspector.
- (3)(a) If the factory medical officer on examination at any time is of the opinion that any worker has developed signs or symptoms of benzene exposure, he shall make a record of his findings in the said register and inform the manager in writing.
  - (b) On receipt of the information from the factory medical officer, the manager of the factory shall send the worker so found exposed, to the Certifying Surgeon who shall, after satisfying himself with the findings of the factory medical officer and conducting necessary examinations, issue orders of temporary shifting of the worker or suspension of the worker in the process.
- (4) The medical examination shall be arranged by the occupier or manager of the factory and the worker so examined shall not bear any expenses for it.

## APPENDIX

### CAUTIONARY NOTICE

#### **Benzene and substances containing benzene**

##### 1. *Hazards:*

- (a) Benzene and substances containing benzene are harmful.
- (b) Prolonged or repeated breathing of benzene vapours may result in acute or chronic poisoning.
- (c) Benzene can also be absorbed through skin which may cause skin and other diseases.

##### 2. *Preventive measures:*

- (a) Avoid breathing of benzene vapour.
- (b) Avoid prolonged or repeated contact of benzene with the skin.
- (c) Remove benzene soaked or wet clothing promptly.
- (d) If any time you are exposed to high concentration of benzene vapours and exhibit signs and symptoms such as dizziness, difficulty in breathing, excessive excitation and losing of consciousness, immediately inform your factory manager
- (e) Keep all the containers of benzene closed.
- (f) Handle, use and process benzene and substances containing benzene carefully in order to prevent their spillage on floor.
- (g) Maintain good housekeeping.

3. *Protective equipment:*

- (a) Use respiratory protective equipment in places where benzene vapours are present in high concentration.
- (b) In emergency, use self generating of oxygen mask or oxygen or air cylinder masks.
- (c) Wear hand gloves, aprons, goggles and gum boots to avoid contact of benzene with your skin and other body parts.

4. *First-aid measures in case of acute benzene poisoning.*

- (a) Removing the clothing immediately if it is wetted with benzene.
- (b) If liquid benzene enters the eyes, flush them thoroughly for at least 15 minutes with clean running water and immediately secure medical attention.
- (c) In case of unusual exposure to benzene vapour call a physician immediately. Until he arrives, do the following-
  - (i) If the exposed person is conscious.
    - (aa) Move him to fresh air in open.
    - (bb) Lay him down without a pillow and keep him quite and warm.
  - (ii) If the exposed person is unconscious
    - (aa) Lay him down preferably on the left side with the head low.
    - (bb) Remove any false teeth, chewing-gum tobacco or other foreign objects which may be in his mouth.
    - (cc) Provide him artificial respiration in case difficulty is being experienced in breathing.
    - (dd) In case of shallow breathing or cyanosis (blueness of skin, lips, ears, finger nail beds) he should be provided with medical oxygen or oxygen carbon dioxide mixture. If needed, he should be given artificial respiration. Oxygen should be administered by a trained person only.

## SCHEDULE XXII

### **Manufacturing process or operations in carbon disulphide plants.**

1. *Application.*- This Schedule shall apply to all electric furnaces in which carbon disulphide is generated and all other plants where carbon disulphide after generation, is condensed, refined and stored. This Schedule is in addition to and not in derogation of any of the provision of the Act and Rules made thereunder.

2. *Construction, installation and operation.*- (1) The buildings in which electric furnaces are installed and carbon disulphide after generation is condensed and refined shall be segregate from other parts of the factory and shall be of open type to ensure optimum ventilation and the plant layout shall be such that only a minimum number of workers are expose to the risk of any fire or explosion at any one time.

(2). Every electric furnace and every plant in which carbon disulphide is condensed, refined

and stored with all their fitting and attachments shall be of good construction, sound material and of adequate strength to sustain the internal pressure to which the furnace or the plant may be subjected to and shall be so designed that carbon disulphide liquid and gas are in closed system during their normal working.

(3). The electric furnace supports shall be firmly grouted about 60 centimetres in concrete or by other effective means.

(4). Every electric furnace shall be installed and operated according to manufactures' instructions and these instructions shall be clearly imparted to the personnel incharge of construction and operation.

(5). The instructions regarding observance of correct furnace temperature, sulphur dose, admissible current or powder consumption and periodical checking of charcoal level shall be strictly complied with.

3. *Electrodes.*-(1) where upper ring electrode made of steel are used in the electric furnace, they shall be of seamless tube construction and shall have arrangement for being connected to cooling water system through a siphon built in the electrodes or through a positive pressure waterpump.

(2) The arrangements for cooling water referred to in sub-paragraph (1) shall be connected with automatic alarm system which will actuate in the event of interruption of cooling water in the electrodes and give visible and audible alarm signals in the control room and simultaneously stop power supply for the furnace operation and to stop the further supply of water. The alarm system and the actuating device shall be checked every day.

4. *Maintenance of charcoal level.*- Why any electric furnace is in operation, it shall be ensured that the electrodes are kept covered with charcoal bed.

5. *Charcoal separator.*- A cyclone type of charcoal separator or any other effective arrangement to the satisfaction of the Chief Inspector shall be fitted on the offtake pipe between the electric furnace and sulphur separator to prevent entry of pieces of charcoal into the condensers and piping.

6. *Rupture discs and safety seal.*- (1) At least two rupture discs of adequate size which shall blow off at a pressure twice the maximum operating pressure shall be provided on each furnace and shall either be mounted directly on the top of the furnace or each through an independent pipe as close as possible to the furnace.

(2) A safety water seal shall be provided and tapped from a point between the charcoal separator and the sulphur separator.

7. *Pyrometer and manometers.*- (1) Each electric furnace shall be fitted with adequate number of pyrometers to give an indication of the temperature as correctly as reasonably practicable at various points in the furnace. The dials for reading the temperature shall be located in the control room.

(2) Manometers or any other suitable devices shall be provided for indicating pressure-

- (a) in the offtake pipe before and after the sulphur separator; and
- (b) in primary and secondary condensers.

8. *Check valves etc.*,- All piping carrying carbon disulphide shall be fitted with check valves, water seals or some other effective devices at suitable positions so as to prevent gas

from flowing back into any electric furnace in the event of its shut down.

Overheads, storage tank or tanks of adequate capacity shall be provided to ensure supply of cooling water by direct gravity feed to the condensers in case of emergency such as power shut down, etc. at least for the duration during which it would be possible to initiate and complete the procedures for the shut-down of the furnace.

9. *Inspection and maintenance of electric furnaces.* (1) Every electric furnace shall be inspected internally by a competent persons.

- (a) before being placed in service after installation;
  - (b) before being placed in service after reconstruction or repairs; and
  - (c) periodically every time the furnace is opened for cleaning or de-ashing or for replacing electrodes.
- (2) When an electric furnace is shut down for cleaning or de-ashing-
- (a) the brick lining shall be checked for continuity and any part found defective removed;
  - (b) after removal of any part of the lining referred to in (a) the condition of the shell shall be closely inspected; and
  - (c) any plated forming shell found corroded to the extent that safety of the furnace is endangered shall be replaces.

10. *Maintenance of records.*- The following hourly records shall be maintained in a log book:-

- (a) manometer readings at the points specified in sub-paragraph 7 (2)
- (b) gas temperature indicated by pyrometers and all others vital points near he sulphur separator and primary and secondary condensers.
- (c) Water temperature and flow of water through the siphon in the electrodes; and
- (d) Primary and secondary voltages and current and energy consumed.

11. *Electrical apparatus, wiring and fittings.*- All buildings in which carbon disulphide is refined or stored shall be provided with electrical apparatus, wiring and fittings which shall afford adequate protection from fire and explosion.

12. *Prohibition relating to smoking.*- No person shall smoke or carry matched, fire or naked light or other means of producing a naked light or spark in buildings in which carbon disulphide is refined or stored, and a notice in the language understood by a majority of the workers shall be posted in the plant prohibiting smoking and carrying of matches, fire or naked light or other means of producing naked light or spark into such rooms.

13. *Means of escape.*- Adequate means if escape shall be provided and maintained to enable person to move to a safe place as quickly as possible in case of an emergency. At least two independent staircase of adequate width shall be provided in every building housing the furnaces at reasonable intervals at opposite ends. These shall always be kept clean of all obstructions and so designed as to afford easy passage.

14. *Warning in case of fire.*- There shall be adequate arrangements for giving warnings in case of fire or explosion which shall operate on electricity and in case of failure of electricity, by some mechanical means.

15. *Fire fighting equipments.*- (1) Adequate number of suitable fire extinguishers or other fire fighting equipment shall be kept in constant readiness for dealing with risks involved and depending on the amount and nature of materials stored.

(2) Clear instructions as to how the extinguishers or other equipments should be used and printed in the language which the majority of the workers employed understand, shall be affixed to each extinguisher or other equipments and the personnel shall be trained in their use.

16. *Bulk sulphur.*- (1) Open or semi-enclosed spaces for storage of bulk sulphur shall be sited with due regard to the dangers which may arise from sparks given off by nearby locomotives, etc. and precautions shall be taken to see that flames, smoking and matches and other sources of ignition do not come in contact with the clouds of dust arising during handling of bulk sulphur.

(2) All enclosures of bulk sulphur shall be of non-combustible construction, adequately ventilated and so designed as to provide a minimum of ledges on which dust may lodge.

(3) The bulk sulphur in the enclosures shall be handled in such a manner as to minimise the formation of dust clouds and no flame, smoking and matches or other sources of ignition shall be employed during handling and non-sparking tools shall be used whenever sulphur is shoveled or otherwise removed by hand.

(4) No repairs involving flames, heat or use of hands or power tools shall be done in enclosure where bulk sulphur is stored.

17. *Liquid Sulphur.*- Open flames, electric sparks or other sources of ignition, including smoking and matches, shall be excluded from the vicinity of molten sulphur.

18. *Training and supervision.*- (1) All electric furnaces and all plants on which carbon disulphide is condensed, refined or stored shall be under adequate supervision at all times while the furnaces and plants are in operation.

(2) Workers in charge of operation and maintenance of electric furnaces and of the plants shall be properly qualified and adequately trained.

19. *Washing facilities.*- (1) The occupier shall provide and maintain a clean state and in good repair, for the use of all persons employed each place under cover with at least one tap or standpipe, having a constant supply of clean water for every five such persons, the taps or stand-pipes being spaced not less than 120 centimeters, apart with a sufficient supply of soap and clean towels, provided that towels shall be supplied to each individual worker if so ordered by the Inspector.

(2) All the workers employed in the sulphur storage, handling and melting operations shall be provided with a nail brush.

20. *Personal protective equipments.*- (1) Suitable goggles and protective clothing consisting of overalls without pockets, gloves and foot-wear shall be provided for the use of operators.-

(a) when operating valves or cocks controlling fluids; etc.

(b) drawing off of molten sulphur from sulphur pots; and

(c) handling charcoal or sulphur.

(2) Suitable respiratory protective equipment shall be provided and stored in the appropriate place for use during abnormal conditions or in an emergency.

(3) Arrangements shall be made for proper and efficient cleaning of all such protective equipment.

21. *Cloakrooms*.- There shall be provided and maintained for the use of all persons employed in the processes a suitable cloak room for clothing put off during work hours and a suitable place separate from clothes. The accommodation so provide shall be placed in the charge of a responsible person and shall be kept clean.

22. *Unauthorised persons*.- Only maintenance and repair personnel, persons directly connected with the plant operation and those accompanied by authorised persons shall be admitted into the plant.

### SCHEDULE XXIII

#### **Manufacture or manipulation of carcinogenic dye intermediates**

1. *Application* .- This Schedule shall apply in respect of all factories or any part thereof where processes in which the substances mentioned in paragraph 3, and 4 are formed, manufactured, handled or used and the processes incidental thereto in the course of which these substances are formed, are carried on. The processes indicated in this paragraph shall be referred to hereinafter as “the said processes” and such a reference shall mean any or all the processes described in this paragraph.

2. *Definition*.- For the purpose of this Schedule the following definitions shall apply, unless the context otherwise requires.-

- (a) “controlled substances” means chemical substances mentioned in paragraph 4 of this Schedule;
- (b) “first employment” means first employment in the said processes and also re-employment in such processes following any cessation of employment for a continuous period exceeding three calendar months.
- (c) “efficient exhaust draught” means localised ventilation effected by mechanical means for the removal of gas, vapour, dust or fume so as to prevent them from escaping into the air of any place in which work is carried on. No draught, shall be deemed to be efficient which fails to remove smoke generated at the point where such gas, vapour, fume or dust originates; and
- (d) “prohibited substances” means chemical substances mentioned in paragraph 3 of this Schedule.

3. *Prohibited substances*.- For the purpose of this Schedule, the following chemical substances shall be classified as “prohibited substances” except when these substances are present or are formed as a bye-product of a chemical reaction in a total concentration not exceeding one per cent-

- (a) beta-naphthylamine and its salts;
- (b) benzidine and its salts;
- (c) 4-amino diphenyl and its salts;
- (d) 4-nitro diphenyl and its salts; and

(e) any substance containing any of these compounds.

4. *Controlled substances.*- For the purpose of this Schedule, the following chemical substances shall be classified as “controlled substances”

- (a) alpha-naphthylamine or alpha-naphthylamine containing not more than one per cent of beta-naphthylamine either as a by-product of chemical reaction or otherwise, and its salts;
- (b) ortho-tolidine and its salts;
- (c) dianisidine and its salts;
- (d) dischlorobenzidine and its salts;
- (e) auramine; and
- (f) magneta.

5. *Prohibition of employment.*- No person shall be employed in the said processes in any factory in which any prohibited substances is formed, manufactured, processed, handled or used except as exempted by the Chief Inspector as stipulated in paragraph 23.

6. *Requirements for processing or handling controlled substances.*- (1) Wherever any of the controlled substances referred to in paragraph 4 are formed, manufactured, processed, handled or used, all practical steps shall be taken to prevent inhalation, ingestion or absorption of the said controlled substance by the workers while engaged in processing that substances, and its storage or transport within the plant, or in cleaning or maintenance of the concerned equipment, plant, machinery and storage areas.

(2) As far as possible all operations shall be carried out in a totally enclosed system. Wherever such enclosure is not possible, efficient exhaust draught shall be applied at the point where the controlled substances are likely to escape into the atmosphere during the process.

(3) The controlled substances shall be received in the factory in tightly closed containers and shall be kept so except when these substances are in process or in use. The controlled substances shall leave the factory only in tightly closed containers of appropriate type. All the containers shall be plainly labelled to indicate the contents.

7. *Personal protective equipment.*- (1) the following items or personal protective equipment shall be provided and issued to every worker employed in the said processes-

- (a) long trousers and shirts or overalls with full sleeves and head coverings. The shirt or overall shall cover the neck completely; and
- (b) rubber gum-boots.

(2) The following items of personal protective equipment shall be provided in sufficient numbers for use by workers employed in the said processes when there is danger of injury during the performance of normal duties or in the event of emergency-

- (a) rubber hand-gloves;
- (b) rubber aprons; and
- (c) airline respirators or other suitable respiratory protective equipment.

(3) It shall be the responsibility of the manager to maintain all items of personal protective equipment in a clean and hygienic condition and in good repair.

8. *Prohibition relating to employment of women and young persons.*- No woman or person below 18 years shall be employed or permitted to work in any room in which the said processes are carried on.

9. *Floors of workroom.* – The floor of every workroom in which the said processes are carried on shall be –

- (a) smooth and impervious to water provided that asphalt or tar shall not be used in the composition of the floor,
- (b) maintained in a state of good repair,
- (c) with a suitable slope for easy draining and provided with gutters and
- (d) thoroughly washed daily with the drain water being led into a sewer through a closed channel.

10. *Disposal of empty containers.*- Empty containers used for holding controlled substances shall be thoroughly cleaned of their contents and treated with a deactivating agent before being discarded.

11. *Manual handling.*- Controlled substances shall not be allowed to be mixed, filled, emptied or handled except by means of a scoop with a handle. Such scoop shall be thoroughly cleaned daily.

12. *Instructions regarding risk.*- Every worker on his first employment in the said processes shall be fully instructed about the properties of the toxic chemicals to which he is likely to be exposed to, of the dangers involved and the precautions to be taken. Workers shall also be instructed on the measures to be taken to deal with an emergency.

13. *Cautionary placards.*- Cautionary placards in the form specified in appendix attached to this Schedule and printed in the language of the majority of the workers employed in the said processes shall be affixed in prominent places frequented by them in the factory, where the placards can be easily and conveniently read. Arrangements shall be made by the manager to instruct periodically all such workers regarding the precautions contained in the cautionary placards.

14. *Obligations of the workers.*- It shall be the duty of the persons employed in the said processes to submit themselves for the medical examination including exfoliative cytology of urinary system by the Certifying Surgeon or the qualified medical practitioner as provided for under these rules.

15. *Washing and bathing facilities.*- (1) The following washing and bathing facilities shall be provided and maintained in a clean state and in good repair for the use of all workers employed in the said processes-

- (a) a wash place under cover having constant supply of water and provided with clean towels, soap and nail brushes and with at least one stand pipe for every five such workers;
- (b) 50 per cent of the stand pipes provided under clause (a) shall be located in bathrooms where both hot and cold water shall be made available during the working hours of the factory and for one hour thereafter;
- (c) the washing and bathing facilities shall be in close proximity of the area housing the said processes;

- (d) clean towels shall be provided individually to each worker; and
- (e) in addition to the taps mentioned under clause (a), one stand pipe, in which warm water is made available, shall be provided on each floor.

(2) Arrangement shall be made to wash factory uniforms and other work clothes everyday.

16. *Food, drink, etc. prohibited in workroom.*- No worker shall consume food, drink, pan, supari or tobacco or shall smoke in any workroom in which the said processes are carried on and no worker shall remain in any such room during intervals for meals or rest.

17. *Cloakroom.*- There shall be provided and maintained in a clean state and in good repair for the use of the workers employed in the said processes.

- (a) a cloakroom with lockers having two compartments- one for street clothes and the other for work clothes; and
- (b) a place separate from the locker room and the messroom, for the storage of protective equipment provided under paragraph 7.

The accommodation so provided shall be under the care of a responsible person and shall be kept clean.

18. *Messroom.*- There shall be provided and maintained for the use of workers employed in the said processes who remain on the premises during the meal intervals, a messroom which shall be furnished with tables and benches and provided with suitable means for warming food.

19. *Time allowed for washing.*- Before the end of each shift 30 minutes shall be allowed for bathing for each worker who is employed in the said processes. Further, at least 10 minutes shall be allowed for washing before each meal in addition to the regular time allowed for meals.

20. *Restriction on age of persons employed.*- No worker under the age of 40 years shall be engaged in the factory in the said processes for the first time after the date on which this Schedule comes into force.

21. *Medical examination:*- (1) Every worker employed in the said processes shall be examined by a Certifying Surgeon within 14 days of his first employment. Such examination shall include tests which the Certifying Surgeon may consider appropriate and shall include exfoliate cytology of the urinary system. No worker shall be allowed to work after 14 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every six calendar months. Such examination shall include tests which the Certifying Surgeon may consider appropriate but shall include exfoliative cytology of the urinary system,

(3) A person medically examined under sub-paragraph (1) shall be granted by the Certifying Surgeon a certificate of fitness in Form No, 26. Record of each re-examination carried out under sub-paragraph (2) shall be entered in the certificate. The certificate shall be kept in the custody of the manager of the factory.

(4) The record of each examination carried out as referred to sub-paragraph (1) and (2) including the nature and the results of the tests shall be entered by the Certifying Surgeon in a health register in Form No. 7

(5) The certificate of fitness and the health register shall be kept readily available for

inspection by any Inspector.

(6) If at any time the Certifying Surgeon is of the opinion that a person is no longer fit for employment in the said processes or in any other work on the ground that continuance therein would involve damage to his health he shall make a record of his findings in the said certificate and also in the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes or in any work as the case may be.

(7) No person who has been found unfit to work as said in sub-paragraph (6), shall be re-employed or permitted to work unless the Certifying Surgeon, after further examination, again certifies him to be fit for employment.

22. *Medical facilities.*- (1) The occupier of every factory in which the said processes are carried on shall engage a qualified medical practitioner for medical surveillance of the workers employed in such processes. His appointment shall be subject to approval of the Chief Inspector.

(2) The occupier shall provide to him all the necessary facilities for the purpose referred to in sub-paragraph (1).

(3) A record of medical examinations and appropriate tests carried out by the qualified medical practitioner shall be maintained in a form approved by the Chief Inspector.

23. *Exemptions prohibited substances.*- (1) The Chief Inspector may be certificate in writing (which he may at his discretion revoke at any time), subject to such conditions, if any, as may be specified therein, exempt any process in the course of which any of the prohibited substances is formed, processed, manufacture, handled or used, from the provisions of paragraph 5 if he is satisfied that the process is carried out in a totally enclosed and hermetically sealed system in such a manner that the prohibited substance is not removed from the system except in quantities no greater than that required for the purposes as is necessary to ensure that the product is free from any of the prohibited substances.

(2) The Chief Inspector may allow the manufacture, handling or use of benzedrine hydrochloride provided that all the processes in connection with it are carried out in a totally enclosed system in such a manner that no prohibited substance other than Benzedrine hydrochloride is removed therefrom except in quantities no greater than that require for the purpose of control of the processes of for such purposes as is necessary to ensure that the product is free from prohibited substances and that adequate steps are taken to ensure that benzidine hydrochloride except when not in a totally enclosed system, is kept wet with not less than one part of water to two parts of benzidine hydrochloride at all times.

24. *Exemptions-general.*- If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reason, all or any of the provisions of this Schedule is not necessary for the protection of the workers in the factory, the Chief Inspector may be certificate in writing (which he may in his discretion revoke at any time), exempt such factory from all or any of such provisions subject to such conditions, if any, as he may specify therein.

## APPENDIX

### CAUTIONARY PLACARD/ NOTICE

#### **Carcinogenic dye intermediates.**

1. Dye intermediates which are nitro-amino derivatives or aromatic hydrocarbons are toxic. You may be required to handle these chemicals frequently in this factory.
2. Use the various items of protective wear of safeguard your own health.
3. Maintain scrupulous cleanliness at all times. Thoroughly wash your hands and feet before taking meals. It is essential to take a bath before leaving the factory.
4. Wash off any chemical falling on your body with soap and water. If splashed with a solution of the chemical, remove the contaminated clothing immediately. These chemicals are known to produce cynosis. Contact the medical officer or appointed doctor immediately and get his advice.
5. Handle the dye intermediates only with long handled scoops, and never with bare hands.
6. Alcoholic drinks should be avoided as they enhance the risk of poisoning by the chemicals.
7. Keep your food and drinks away from work place. Consuming food, drinks or tobacco in any form at the place of work is prohibited.
8. Serious effects of the contact with toxic chemicals may result after many years. Great care must be taken in maintain absolute cleanliness of body, clothes, machinery and equipment.

## SCHEDULE XXIV

### **Operation involving high noise levels**

1. *Application.*- This Schedule shall apply to all operations in any manufacturing process having high noise level.
2. *Definitions.*- for the purpose of this Schedule-
  - (a) “noise” means any unwanted sound;
  - (b) “high noise level” means any noise level which, measured on the A-weighted scale, is 90 dB or above.
  - (c) “decibel” means one-teeth of “Bel” which is the fundamental division of a logarithmic scale used to express the ratio of two specified or implied quantities, the number of “Bels” denoting such a ratio being the logarithm to the base of 10 of this ration. The noise level (or the sound pressure level) corresponds to a reference pressure of  $20 \times 10^{-6}$  newtons per square meter or 0.0002 dynes per square centimeter which is the threshold of hearing, that is, the lowest sound pressure level necessary to produce the sensation of hearing in average healthy listeners. The decibel in abbreviation form is dB.
  - (d) “frequency” is the rate of pressure variations expressed in cycles per sound or hertz.

- (e) “dBA” refers to sound level in decibels as measured on a sound level meter operating on the A-weighting net work with slow meter response.
- (f) “A-weighting” means making graded adjustments in the intensities of sound of various frequencies for the purpose of noise measurements, so that the sound pressure level measures by an instrument reflect the actual response of the human ear to the sound measured.

3. *Protection against noise.*- (1) In every factory, suitable engineering control or administrative measures shall be taken to ensure, so far as in reasonably practicable that no worker is exposed to sound levels exceeding the maximum permissible noise exposure levels specified in Tables 1 and 2.

TABLE 1

**Permissible exposure in cases on continuous noise**

Total time of exposure (continuous Or a number of short term Exposures ) per day, in hours	Sound pressure level of dBA
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
3/4	107
1/2	110
1/4	115

- NOTES :
1. No exposure in excess of 115 dBA is to be permitted
  2. For any period of exposure falling in between any figure and the next higher or lower figure as indicated in column 1, the permissible sound pressure level is to be determined by extrapolation on a proportionate basis.

TABLE 2

**Permissible exposure levels of impulsive or impact noise**

Peak sound pressure Level in dB	Permitted number of impulses or impacts Per day
140	100
135	315
130	1,000
125	3,160
120	10,000

NOTES : 1. No exposure in excess of 140 dB peak sound pressure level is permitted

2. For any peak sound pressure level falling in between any figure and the next higher or lower figure as indicated in column 1, the permitted number of impulses or impacts per day is to be determined by extrapolation on a proportionate basis.

(2) For the purposes of this Schedule, if the variations in the noise level involve maxima at intervals of one second or less, the noise is to be considered as a continuous one and the criteria given in table 1 would apply. In other cases, the noise is to be considered as impulsive or impact noise and the criteria given in Table 2 would apply.

(3) When the daily noise exposure is composed of two or more periods of noise exposure at different levels their combined effect should be considered, rather than the individual effect of each. The mixed exposure should be considered to exceed the limit value if the sum of the fractions

$$\begin{array}{ccccccc} C1 & C2 & \dots & Cn & & & \text{exceeds unity-} \\ - & + & - & + & & & - \\ T1 & T2 & & Tn & & & \end{array}$$

Where the C1, C2, etc. indicate the total time of actual exposure at a specified noise level and T1, T2, etc. denote the time of exposure permissible at that level. Noise exposure of less than 90 dBA may be ignored in the above calculation.

(4) Where it is not possible to reduce the noise exposure to the levels specified in sub-rule (1) by reasonably practicable engineering control or administrative measures, and each worker so exposed shall be provided with suitable ear protectors so as to reduce the exposure to noise to the levels specified in sub-paragraph (1).

(5) Where the ear protectors provided in accordance with sub-paragraph (2) and worn by a worker cannot still attenuate the noise reaching near his ear, as determined by subtracting the attenuation value of dBA of the ear protectors concerned from the measured sound pressure level, to a level permissible under Table 1 or table 2 as the case may be, the noise exposure period shall be suitably reduced to correspond to the permissible noise exposures specified in sub-paragraph (1).

- (6) (a) In all cases where the prevailing sound levels exceeds the permissible levels specified in sub-paragraph (1) there shall be administered an effective hearing conservation programme which shall include among other hearing conservation measures, pre-employment and periodical auditory surveys conducted on workers exposed to noise exceeding the permissible levels, and rehabilitation of such workers either by reducing the exposure to the noise levels or by transferring them to places where noise levels are relatively less or by any other suitable means.
- (b) every worker employed in areas where the noise exceeds the maximum permissible exposure levels specified in sub-paragraph (1) shall be subjected to an auditory thresholds for pure tones of 125, 250, 500, 1000, 2000, 4000 and 8000 cycles per second.

## SCHEDULE XXV

### Manufacture of Rayon by Viscoso Process

1. *Definitions.*- For the purpose of this Schedule:-

- a) “approved” means approved for the time being in writing by the Chief Inspector;
- b) “breathing apparatus” means a helmet or face piece with necessary connections by means of which the person using it is a poisonous, asphyxiating or irritant atmosphere, breathes unpolluted air;
- c) “churn” means the vessel in which alkali Cellulose pulp is treated with carbon disulphide;
- d) “dumping” means transfer of cellulose xamthate from a dry churn to a discover;
- e) “efficient exhaust” means localized ventilation by mechanical means for the removal of any gas or vapour so as to prevent tit from escaping into the air of any place in which work is carried on. No draught shall be deemed to be efficient if it fails to control effectively any gas or vapour generated at the point where such gas or fume originates;
- f) “fume process” means any process in which carbon disulphide or hydrogen sulphide is produced, used or given off;
- g) “life belt” means a belt made of leather or other suitable material which can be securely fastened round the body with a suitable length of rope attached to it, each of which is sufficiently strong to sustain the weight of a man.
- h) “protective equipment” means apron, goggles, face shields, foot wear, gloves and overalls made of suitable materials.

2. *Ventilation* - (1) In all work rooms where a fume process is carried on, adequate ventilation by natural or mechanical means shall be provided so as to control, in association with other control measures, the Concentration of Carbon-disulphide and hydrogen sulphide in the air of every work environment within the permissible limits.

(2) Notwithstanding the requirements in sub-paragraph (1) an efficient exhaust draught shall be provided and maintained to control the concentration of Carbob-di-sulhide and hydrogen sulphide in the air at the following locations:-

- (a) dumping hoppers of dry churns,
- (b) spinning machines;
- (c) trio rollers and cutters used in staple fibre spinning.
- (d) Hydro-extractors for yarn cakes,
- (e) after treatment processes, and
- (f) spin baths.

(3) In so far as the spinning machines and trio rollers and cutters used in staple fiber spinning are concerned, they shall be, for the purpose of ensuring the effectiveness of the exhaust draught to be provided as required in sub-paragraph (2), enclosed as fully as practicable and provided with suitable shutters in sections to enable the required operations to be carried out without giving rise to undue quantities of Carbon-di-sulphide and hydrogen sulphide

escaping to the work environment.

(4) No dry churn shall be opened after completion of reaction without initially exhausting the residual vapours of Carbon-di-sulphide by operation of a suitable and efficient arrangement for exhausting the vapours which shall be continued to be operated as long as the churn is kept opened.

(5) Whenever any ventilation apparatus normally required for the purpose of meeting the requirements in sub-paragraphs (2), (3) and (4) is ineffective, fails, or is stopped for any purpose whatsoever, all persons shall be required to leave the work area where the equipment or processes specified in the above said sub-paragraphs are in use, as soon as possible, and in any case not later than 15 minutes after such an occurrence.

(6) (i) All ventilating systems provided for the purposes as required in sub-paragraphs (2), (3) and (4) shall be examined and inspected once every week by a responsible person. It shall be thoroughly examined and tested by a competent person once in every period of 12 months. Any defects found by such examinations or test shall be rectified forthwith.

(ii) A register containing particulars of such examinations and tests, and the state of the systems and the repairs or alterations (if any) found to be necessary shall be kept and shall be available for inspection by an Inspector.

3. *Waste from spinning machines.*- waste yarn from the spinning machines shall be deposited in suitable containers provided with close fitting covers Such waster shall be disposed off as quickly as possible after decontamination.

4. *Lining of dry churns.*- The inside surface of all dry churns shall be coated with a non-sticky paint so that cellulose xanthate will not stick to the surface of the churn. Such coating be maintained in good conditions.

5. *Air monitoring.*- (1) To ensure the effectiveness of the control measures, monitoring of Carbon-di-sulphide and hydrogen sulphide in air shall be carried out once at least in every shift and the record of the results so obtained shall be entered in a register specially maintained for the purposes.

(2) For the purpose of the requirement in sub-paragraph (1), instantaneous gas detector tubes shall not be used. Samples shall be collected over a duration of not less than 10 minutes and analysed by an approved method. The locations where such monitoring is to be done shall be as directed by the Inspector.

(3) If the concentration of either carbon disulphide or hydrogen sulphide exceeds the permissible limits for such vapour or gas as laid down in rule 138. Suitable steps shall be taken for controlling the concentration in air of such contaminants. A report of such occurrences shall be sent to the Chief Inspector forthwith.

6. *Prohibition to remain in fume process room.*- No person during his intervals for meal, or rest shall remain in any room wherein fume process is carried on.

7. *Prohibition relating to employment of young persons.*- No young person shall be employed or permitted to work in any fume process or in any room in which any such process is carried on.

8. *Protective equipments.*- (1) The occupier shall provide and maintain in good conditions protective equipments as specified in the table for use of person employed in the processes referred to therein.

TABLE

	<b>Process</b>	<b>Protective Equipment</b>
1.	Dunping	Overalls, face-shields, gloves and footwear all made of suitable materials.
2.	Spinning	Suitable aprons, gloves and footwear
3.	Process involving or likely to involve contact with viscose solution	Suitable gloves and footwear
4.	Handling of Sulphur	Suitable chemical goggles.
5.	Any other process involving contact with hazardous chemicals	Protective equipments as may be directed by the Chief Inspector by an order in writing.

(2) A suitable room, rooms or lockers shall be provided exclusively for the storage of all the protective equipment supplied to workers and no such equipments shall be stored at any place other than the room, rooms or lockers so provided.

9. *Breathing apparatus etc.*- (1) There shall be provided in every factory where fume process is carried in, sufficient supply of—

- (a) breathing apparatus,
- (b) Oxygen and suitable appliances for its administration, and
- (c) Life belts.

(2) (i) The breathing apparatus and other appliances referred to in sub-paragraph (1) shall be maintained in good condition and kept in appropriate locations so as to be readily available.

(ii) The breathing apparatus and other appliances referred to in clauses (a) and (b) of sub-paragraph (1) shall be cleaned and disinfected at suitable intervals and thoroughly inspected once every month by a responsible person.

(iii) A record of the maintenance and of the condition of the breathing apparatus and other appliances referred to in sub-paragraph (1) shall be entered in a registered provided for that purpose which shall be readily available for inspection by an Inspector.

(3) Sufficient number of workers shall be trained and periodically retrained in the use of breathing apparatus and administering artificial respiration so that at least 3 such trained persons would be available during all the working hours in each room in which fume process is carried on.

(4) Breathing apparatus shall be kept properly labelled in clean, dry, light-proof cabinets

and if liable to be affected by fumes, shall be protected by placing them in suitable containers.

(5) No persons shall be employed to perform any work specified in sub-paragraph (1) for which breathing apparatus is necessary to be provided under the sub-paragraph, unless he has been fully instructed in the proper use of that containers.

(6) No breathing apparatus provided in pursuance of sub-paragraph (1) which has been worn by a persons shall be worn by another persons unless it has been thoroughly cleaned and disinfected since last being worn and the person has been fully instructed in the proper use of that equipment.

10. *Electric fittings.*- All electric fittings in any room in which carbon-disulphide is produced, used or given off or is likely to be given off into the work environment, other than a spinning room, shall be of flame-proof construction and all electric conductors shall either be enclosed in metal conduit or be lead-sheathed.

11. *Prohibition relating to smoking, etc.* - No person shall smoke or carry matches, fire or naked light or other means of producing a naked light or spark in a room in which fume process is carried on. A notice in the language understood by the majority of the workers shall be pasted in prominent locations in the plant prohibiting smoking and carrying of matches, fire or naked light or other means of producing naked light or spark into such room:

Provided that fire, naked light or other means of producing a naked light or spark may be carried on in such room only when required for the purposes of the process itself under the direction of a responsible person.

12. *Washing and bathing facilities.*- (1) There shall be provided and maintained in a clean state and in good repair for the use of all workers employed in the processes covered by the Schedule, adequate washing and bathing places having a constant supply of water under cover at the rate of one such place for every 25 persons employed.

(2) The washing places shall have stand pipes placed at intervals of not less than one meter.

(3) Not less than one half of the total number of washing places shall be provided with bathrooms.

(4) Sufficient supply of clean towels made of suitable material shall be provided.

Provided that such towels shall be supplied individually for each worker if so ordered by the Inspector.

(5) Sufficient supply of soap and nails brushes shall be provided.

13. *Rest room.*- (1) A rest room shall be provided for the workers engaged in doffing operations of filament yarn spinning arrangement.

(2) Such rest room shall be provided with fresh air supply and adequate seating arrangement.

14. *Cautionary notice and instruction.*- (1) The following cautionary notice shall be prominently displayed in each fume process room.

*“Cautionary Notice”*

1. Carbon disulphide (CS<sub>2</sub>) and Hydrogen Sulphide (H<sub>2</sub>S) which may be present in this room are hazardous to health.
2. Follow safety instructions.
3. Use protective equipment and breathing apparatus as and when required.
4. Smoking is strictly prohibited in this area”

This notice shall be in a language understood by the majority of the workers and displayed where it can be easily and conveniently read. If any worker is illiterate, effective steps shall be taken to explain carefully to him the contents of the notice so displayed.

(2) Arrangements shall be made to instruct each worker employed in any room in which fume process is carried on regarding the health hazardous connected with their work and the preventative measures and methods to protect themselves. Such instructions shall be given on his first employed and repeated periodically.

(3) Simple and special instruments shall be framed to ensure that effective measures will be carried out in case of emergency involving escape of carbon disulphide and hydrogen sulphide. These instructions shall be displayed in the concerned areas and workers shall be instructed and trained in the actions to be taken in such emergencies.

*15. Medical facilities and records of examinations and tests:-*

(1) The occupier of each factory to which this schedule applies, shall -

- (a) employ a qualified medical officer for medical surveillance of the workers employed in the fume process whose employment shall be subject to the approval of the Chief Inspector of Factories; and
- (b) provide to the said medical officer all the necessary facilities for the purpose referred to in clause (a)

(2) The record of medical examination and appropriate tests carried out by the said medical officer shall be maintained in a separate register approved by the Chief Inspector of factories, which shall be kept readily available for inspection by the Inspector.

*16. Medical Examination by the Certifying Surgeon.-* (1) Every worker employed in the fume process shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for estimation of exposure coefficient (iodine azide test on urine), and cholesterol as well as Electrocardiogram (ECG) and Central Nervous System (CNS) tests. No worker shall be allowed to work after 15 days of his certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the fume process shall be re-examined by a Certifying Surgeon at least once in every twelve calendar months. Such examinations shall, wherever the certifying surgeon considers appropriate, include all the tests as specified in sub-paragraph (1)

(3) The Certifying Surgeon after examining a worker, shall issue a Certificate of Fitness in Form No. 26. The record of re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Manager of the factory. The record of each examination carried out under sub-paragraphs (1) and (2) including the nature and the results of the tests shall also be entered by a Certifying Surgeon in a health

register in Form No. 7.

(4) The Certificate of Fitness and the Health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of opinion that a worker is no longer fit for employment in the fume process on the ground that continuance therein would involve special danger to the health of the worker, he shall make record of his findings in the said certificate and the Health register. The entry of his findings in those documents should also include the period for which he considers that the said persons is unfit for work in the fume process.

(6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re-employed or permitted to work in the fume process unless the Certifying Surgeon, after further examination again certified him fit for employment in such.

17. *Exemptions.*- If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reason, all or any of the provisions of this Schedule is not necessary for protection of the workers in the factory, the Chief Inspector may by a certificate in writing, which he may at his discretion revoke at any time, exempt such factory from all or any of such provisions subject to such conditions, if any, as he may specify therein.

## SCHEDULE XXVI

### **Handling and Processing of Highly Flammable Liquids and Flammable Compressed Gases**

1. *Application.*- These rules will be applicable to all factories where highly flammable liquids or flammable compressed gases are manufactured, stored, handled or used.

2. *Definition.*- For the purpose of this schedule-

(a) “highly flammable liquid” means any liquid including its solution, emulsion or suspension which when tested in a manner specified by sections 14 and 15 of the Petroleum Act, 1934 (Central Act 30 of 1934), gives off flammables vapour at a temperature less than 32 degrees centigrade;

(b) “flammable compressed gas” means flammable compressed gas as defined in section 2 of the Static and Mobile pressure Vessels (unfired) Rules, 1981 framed under the Explosives Act. 1884.

3. *Storage.*- (1) Every flammable liquid or flammable compressed gas used in every factory shall be stored in suitable fixed storage tank, or in suitable closed vessel located in a safe position under the ground, in the open or in a store room of adequate fire resistant construction.

(2) Except as necessary for use, operation or maintenance, every vessel or tank which contains or had contained a highly flammable liquid or flammable compressed gas shall be always kept closed and all reasonably practicable steps shall be taken to contain or immediately drain off to a suitable container any spill or leak that may occur.

(3) Every container, vessel, tank, cylinder, or store room used for storing highly flammable liquid or flammable compressed gas shall be clearly and in bold letters marked “Danger-Highly Flammable Liquid” or “Danger-Flammable Compressed Gas.”

4. *Enclosed systems for conveying Highly Flammable Liquids.*- Wherever it is reasonably practicable, highly flammable liquids shall be conveyed within a factory in totally enclosed systems consisting of pipes lines, pumps and similar appliances from the storage tank or vessel to the point of use. Such enclosed systems shall be so designed, installed, operated and maintained as to avoid leakage or the risk of spilling.

5. *Preventing Formation of Flammable Mixture with Air.*- Wherever there is a possibility for leakage or spill of highly flammable liquid or flammable compressed gas from an equipment, pipe line, valve, joint or other part of a system , all practicable measures shall be taken to contain, drain or dilute such spills or leakage as to prevent formation or flammable mixture with air.

6. *Prevention of Ignition.*- (1) In every room, work place or other location where highly flammable liquid or flammable combustible gas is stored, conveyed, handled or used or where there is danger of fire or explosion from accumulation of highly flammable liquid from accumulation of highly flammable liquid or flammable compressed gas in air, all practicable measures shall be taken to exclude the sources of ignition. Such precautions shall include the following:-

- (a) All electrical apparatus shall either be excluded from the area of risk or they shall be of such construction and so installed and maintained as to prevent the danger of their being a source of ignition:
- (b) Effective measures shall be adopted for prevention of accumulation of static charges to a dangerous extent:
- (c) No person shall wear or be allowed to wear any footwear having iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction;
- (d) Smoking, lighting or carrying of material lighters or smoking materials shall be prohibited;
- (e) Transmission belts with iron fasteners shall not be used; and
- (f) All other precautions, as are reasonably practicable shall be taken to prevent initiation of ignition from all other possible sources such as open flames, frictions sparks, overheated surface of machinery or plants, chemical or physical-chemical reaction and radiant heat.

7. *Prohibition of smoking.*- No person shall smoke in any place where highly flammable liquid or flammable compressed gas is present in circumstances that smoking would give rise to a risk of fire. The occupier shall take all practicable measures to ensure compliance with this requirements including display of a bold notice indicating prohibition of smoking at every place where this requirement applies.

8. *Fire Fighting.*- In every factory where highly flammable liquid or flammable compressed gas is manufactured, stored, handled or used, appropriate and adequate means

of fighting a fire shall be provided. The adequacy and suitability of such means which expression includes the fixed and portable fire extinguishing systems, extinguishing material, procedures and the process of fire fighting, shall be to the standards and levels prescribed by

the Indian Standards applicable, and in any case not inferior to the stipulations under rule 73.

9. *Exemptions.*- If in respect of any factory, the chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reasons, all or any of the provision of this Schedule is not necessary for protection of the workers in the discretion revoke at any time, exempt such factory from all or any of such provisions subject to such conditions if any, as he may specify therein.

## SCHEDULE XXVII

### Operations in Foundries

1. *Application.*- Provisions of this Schedule shall apply to all parts of factories where any of the following operations or process are carried on:

- (a) the production of iron castings or, as the case may be steel castings by casting in moulds made of sand, loam, moulding composition or other mixture of materials, or by shell moulding, or by centrifugal casting and process incidental to such production.
- (b) The production of non-ferrous casting by casting metal in moulds made of sands, loam, metal, moulding composition or other material or mixture of materials or by shell mouldings, die-casting (including pressure die-chasting), centrifugal casting or continuous casting and any process incidental to such production; and
- (c) The melting and casting of non-ferrous metal for the production of ingots, billets, slabs and other similar products, and the stripping thereof;

but shall not apply with respect to-

- (a) any process with respect to the melting and manufacture of lead and the electric accumulators.
- (b) Any process for the purpose of a printing works; or
- (c) Any melting process in which metal is obtained by a reducing operation or any process incidental to such operation; or
- (d) The production of steel in the form of ingots; or
- (e) Any process in the course of the manufacture of solder or any process incidental to such manufacture ; or
- (f) The melting and casting of lead or any lead-based alloy for the production of ingots, billets, slabs or other similar products or the stripping thereof, or any process incidental to such melting, casting or stripping.

2. *Definition.*- For the purpose of this Schedule,-

- (a) 'approved respirator' means a respirator of a type approved by the Chief Inspector;
- (b) 'cupola or furnace' includes a receiver associated therewith;
- (c) 'dressing or fettling operations' includes stripping and other removal of adherent sand, cores, runners, risers, flash and other surplus metal from a casting and the production of

reasonably clean and smooth surface, but does not include.-

- (a) the removal of metal from a casting when performed incidentally in connection with the machining or assembling of casting other they have been dressed or fettled, or
- (b) any operation which is a knock-out operation within the meaning of this Schedule;
- (d) 'foundry' means those parts of a factory in which the production of iron or steel or non-ferrous castings (not being the production of pig iron or the production of steel in the form of ingots) is carried on by casting in moulds made of sand, loam, moulding composition or other mixture of materials, or by shell moulding or by centrifugal casting in metal moulds lined with sand, or dye casting including pressure dye castings, together with any part of the factory in which any of the following processes are carried on as incidental processes in connection with and in the course of, such production, namely, the preparation and mixing of materials used in foundry process, the preparation of moulds and cores, knockout operations and dressing or fettling operations;
- (e) 'knock-out operation' means all methods of removing castings from moulds and the following operations, when done in connection therewith, namely, stripping, coring-out and the removal of runners and risers;
- (f) "pouring aisle" means an aisle leading from a main gangway or directly from a cupola or furnace to where metal is poured into moulds.

3. *Prohibition of use of certain materials as parting materials.*- (1) a material shall not be used as a parting material if it is a material containing compounds of silicon calculated as silica to the extent of more than 5 per cent by weight of the dry material.

Provided that this prohibition shall not prevent the following being used as a parting material if the material does not contain an admixture of any other silica-

- (a) zirconium silicate (Zircon)
- (b) calcined china clay
- (c) calcined aluminous fire clay
- (d) sillimanite
- (e) calcined or fused alumina
- (f) olivine
- (g) natural sand.

(2) Dust or other matter deposited from a fettling or blasting process shall not be used as a parting material or as a constituent in a parting material.

4. *Arrangement and storage.* – For the purposes of promoting safety and cleanliness in workrooms the following requirements shall be observed:-

- (a) moulding boxes, loam plates, ladles, patterns, pattern plates, frames, boards, box weights, and other heavy articles shall be so arranged and placed as to enable work to

be carried on without unnecessary risk;

- (b) suitable and conveniently accessible racks, bins or other receptacles shall be provided and used for the storage of other gear and tools;
- (c) where there is bulk storage of sand, fuel, table bins, bunkers or other receptacles shall be provided for the purpose of such storage.

5. *Construction of floors.*- (1) Floor of indoor workplaces in which the processes are carried on, other than parts which are of sand, shall have an even surface of hard material.

(2) No part of the floor or any such indoor workplace shall be of sand except where this is necessary by reason of the work done.

(3) All parts of the surface of the floor of any such indoor workplace which are of sand shall, so far as practicable, be maintained in an even and firm condition.

6. *Cleanliness of indoor workplaces.*- (1) All accessible parts of the walls of every indoor workplaces in which the processes are carried in and of everything affixed to those walls shall be effectively cleaned by a suitable method to a height of not less than 4.2 metres from the floor at least once in every period of fourteen months. A record of the carrying out of every such effective cleaning in pursuance this paragraph including the date (which shall be not less than five months not more than nine months after the last immediately preceding washing, cleaning or other treatment) shall be properly maintained.

(2) Effective cleaning by a suitable method shall be carried out at least once every working day of all accessible parts of the floor of every indoor workplace in which the processes are carried on, other than parts which are of said; and the parts which are of sand be kept in good order.

7. *Manual operations involving molten metal.*- (1) There shall be provided and properly maintained for all persons employed on manual operations involving molten metal with which they are liable to be splashed, a working space for that operation –

- (a) which is adequate for the safe performance of the work; and
- (b) which, so far as reasonably practicable, is kept free from obstruction.

(2) Any operation involving the carrying by hand of a container holding molten metal shall be performed on a floor all parts of which where any person walks while engaged in the operation shall be at the same level:

provided that, where necessary to enable the operation to be performed without undue risk, nothing in this paragraph shall prevent the occasional or exceptional use of a working space on a different level from the floor, being a space on provided with a safe means of access from the floor for any person while engaged in the operation.

8. *Gangways and pouring aisles* – (1) In every workroom to which this paragraph applies, whether constructed, reconstructed or converted for use as such after the making of this Schedule and so far as reasonably practicable, in every other workroom to which this paragraph applies, sufficient and clearly defined main gangways shall be provided and properly maintained which –

- (a) shall have an even surface of hard material and shall, in particular, not be of sand or have on them more sand than is necessary to avoid risk of flying metal from accidental spillage;
- (b) shall be kept, so far as reasonably practicable, free from obstruction;
- (c) if not used for carrying molten metal, shall be at least 920 millimetres in width;
- (d) if used for carrying molten metal shall be –
  - (i) where truck ladles are exclusively, at least 600 millimetres wider than the overall width of the ladle;
  - (ii) where hand shanks are carried by not more than two men, at least 920 millimetres in width;
  - (iii) where hand shanks are carried by more than two men, at least 1.2 metres in width; and
  - (iv) where used for simultaneous travel in both directions by men carrying hand shanks, at least 1.8 metres in width.

(2) In workroom to which this paragraph applies, whether constructed, reconstructed or converted for use as such after the making of this Schedule, sufficient and clearly defined pouring aisles shall be provided and properly maintained which –

- (a) shall have an even surface of hard material and shall, in particular, not be of sand or have on them more sand than is necessary to avoid risk of flying metal from accidental spillage;
- (b) shall be kept so far as reasonably practicable free from obstruction;
- (c) if molten metal is carried in hand ladles or bulk ladles by not more than two men per ladle, shall be at least 460 millimetres wide, but where they moulds alongside the aisle are more than 510 millimetres above the floor of the aisle, the aisle shall be not less than 600 millimetres wide;
- (d) if molten metal is carried in hand ladles or bulk ladles by more than two men per ladle, shall be at least 760 millimetres wide;
- (e) if molten metal is carried in crane, trolley or truck ladles, shall be of a width adequate for the safe performance of the work;

(3) Requirements of sub-paragraphs (1) and (2) shall not apply to any workroom or part of a workroom if, by reason of the nature of the work done therein, the floor of that workroom or, as the case may be, that part of a workroom has to be of sand.

(4) In this paragraph ‘Workroom to which this paragraph applies’ means a part of a ferrous or non-ferrous foundry in which molten metal is transported or used, and a workroom to which this paragraph applies shall be deemed for the purposes of this paragraph to have been constructed, reconstructed or converted for use as such after the making of this Schedule if the construction, reconstruction or conversion thereof was begun after the making of this Schedule.

9. *Work near cupolas and furnaces.*- No person shall carry out any work within a distance of 4 metres from a vertical line passing through the delivery end of any spout of a cupola or furnace, being a spout used for delivering molten metal, or within a distance of 2.4 metres from a vertical line passing through the nearest part of any ladle which is in position at the end of such a spout

, except in either case, where it is necessary for the proper use or maintenance of a cupola or furnace that work should be carried out within that distance of that work, and it being carried out at such a time and under such conditions that there is no danger to the person carrying it out, from molten metal which is being obtained from the cupola or furnace or in a ladle in position at the end of the spout.

10. *Dust and fumes.* – (1) Open coal, coke or wood fires shall not be used for heating or drying ladles inside a workroom unless adequate measures are taken to prevent, so far as practicable, fumes or other impurities from entering into or remaining in the atmosphere of the workroom.

(2) No open coal, coke or wood fires shall be used for drying moulds except in circumstances in which the used of such fires is unavoidable.

(3) Mould stoves, core stoves and annealing furnaces shall be so designed, constructed, maintained and worked as to prevent, so far as practicable, offensive or injurious fumes from entering into any workroom during any period when a person is employed therein.

(4) All knock-out operations shall be carried out-

- (a) in a separate part of the foundry suitably partitioned off, being a room or part in which, so far as reasonably practicable, effective and suitable local exhaust ventilation is provided, or where compliance with this requirement is not reasonably practicable, effective and suitable local exhaust ventilation and a high standard of general ventilation are provided or
- (b) in an area of the foundry in which so far as reasonable practicable, effective and suitable local exhaust ventilation and a high standard of general ventilation and a high standard of general ventilation is provided.

(5) All dressing or felting operations shall be carried out –

- (a) in a separate room or in a separate part of the foundry suitably partitioned off; or
- (b) in an area of the foundry set part for the purpose;

and shall, so far as reasonably practicable, be carried out with effective and suitable local exhaust ventilation or other equally effective means of suppressing dust, operating as near as possible to the point of origin of the dust.

11. *Maintenance and examination of exhaust plant.*- (1) All ventilation plants used for the purpose of extracting, suppressing or controlling dust or fumes shall be properly, maintained.

(2) All ventilating plants used for the purpose of extracting, suppressing or controlling dust or fumes shall be examined and inspected once every week by a responsible person. It shall be thoroughly examined and tested by a competent at least once in every period of twelve months; and particulars of the results of every such examination and test shall be entered in an approved register which shall be entered in an approved register which shall be available for inspection by an Inspector. Any defect found on any such examination and test shall be immediately reported in writing by the person carrying out the examination and test, to the occupier or manager of the factory.

12. *Protective equipment.*- (1) The occupier shall provide and maintain suitable protective equipment specified for the protection of workers.

- (a) suitable gloves or other protection for the hands for workers engaged in handling any hot material likely to cause damage to the hands by burn, scald or scar, or in

handling pig iron, rough castings, or other articles likely to cause damage to the hands by cut or abrasion;

- (b) approved respirators for workers carrying out any operations creating a heavy dust concentration which cannot be dispelled quickly and effectively by the existing ventilation arrangements.

(2) No respirator provided for the purposes of clause 1 (b) and which has been worn by a person if it has not since been thoroughly cleaned and disinfected.

(3) Persons who for any length of time-

- (a) work at a spout of or attend to, a cupola or furnace in such circumstances that material therefrom may come into contact with the body, being material at such a temperature that its contact with the body would cause a burn; a
- (b) are engaged in, or in assisting with the pouring of molten metal; or
- (c) carry any hand or move by manual power any ladle or mould containing molten metal; or
- (d) are engaged in knocking out operations involving material at such a temperature that its contact with the body would cause a burn;

shall be provided with suitable footwear and gaiters which when worn by them prevent so far as reasonably practicable, risk of burns to their feet and ankles.

(4) Wherever practicable, suitable screens shall be provided for protection against flying materials (including splashes of molten metal and sparks and chips thrown off in the course of any process.)

(5) The occupier shall provide and maintain suitable accommodation for the storage and make adequate arrangements for cleaning and maintaining of the protective equipment supplied in pursuance of this paragraph.

(6) Every person shall make full and proper use of the equipment provided for his protection in pursuance of sub-paragraph (1) and (4) and shall without delay report to the occupier, manager or other appropriate person any defect in, or loss of the same.

13. *Washing and bathing facilities.*- (1) there shall be provided and maintained in clean state and good repair for the use of all workers employed in the foundry

- (a) a washplace under cover with either
  - (i) a trough with impervious surface fitted with a waste pipe without plug, and of sufficient length to allow at least 60 centimeters for every 10 such person employed at any one time and having a constant supply of clean water from taps or jets above the trough at intervals of not more than 60 centimeters; or
  - (ii) at least one tap of the tap or stand pipe for every 10 such persons employed at any one time, and having a constant supply of clean water, the tap or stand pipe being spaced not less than 1.2 meters apart; and
- (b) not less than one half of the total number of washing places provided under clause (a) shall be in the form of bath rooms.
- (c) a sufficient supply of clean towels made of suitable material changed daily, with sufficient supply of nail brushes and soap.

(2) The facilities provided for the purposes of sub-paragraph (1) shall be placed in charge of a responsible person and maintained in a clean and orderly condition.

14. *Disposal of dross and skimming.*- Dross and skimming removed from molten metal or taken from a furnace shall be placed forthwith in suitable receptacles.

15. *Disposal of waste.*- Appropriate measures shall be taken for the disposal of all waste products from shell moulding (including waste burnt sand) as soon as reasonably practicable after the castings have been knocked-out.

16. *Material and equipment left out of doors.*- All material and equipment left out of doors (including materials and equipment so left on temporarily or occasionally) shall be so arranged and placed as to avoid unnecessary. There shall be safe means of access to all such material and equipment and, so far as reasonably practicable, such access shall be by roadways or pathways which shall be properly maintained. Such surface and shall, so far as reasonably practicable be kept free from obstruction.

17. *Medical facilities and records of examination and test.*- (1) The occupier of every factory to which the Schedule applies, shall-

- (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories; and
- (b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in a clause (a)

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of factories, which shall be kept readily available for inspection by the Inspector.

18. *Medical examination by Certifying Surgeon.*- (1) Every worker employed in a foundry shall be examined by a Certifying Surgeon within 15 days of his first employment. Such medical examination shall include pulmonary function tests and chest X-ray. No worker shall be allowed to work after unless certified for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every twelve months. Such examination shall, wherever the Certifying Surgeon consider appropriate, include all the tests as specified in sub-paragraph (1) except chest X-ray which will be once in every 3 years.

(3) The Certifying Surgeon after examining a worker, shall issue a Certificate of Fitness in Form No. 26. The record of examination and re-examinations carried out shall be entered in the certificate and the certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraphs (1) and (2), including nature and the results of the test, shall also be entered by the Certifying Surgeon in a health register in Form No. 7.

(4) The Certificate of Fitness and the health register shall be kept readily available for

inspection by the Inspector.

(5) If at any time Certifying Surgeon is of the opinion that a worker is no longer fit for worker is no longer fit for employment in the said processes in the ground that continuance therein would involve special danger to the health of the worker, he shall made a record of his findings in the said certificate and the health register. The entry of his findings in these documents should also include the period for which he considers that the said person is unfit for work considered that the said processes. The person so suspended from the process shall be provided wit alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated

(6) No person who has been found unfit to work under sub-paragraph (5), shall be re-employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes.

19. *Exemptions.*- If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reason, all or any of the provisions of this Schedule is not necessary for protection of the workers in the factory, the Chief Inspector may by a certificate in writing, which he may at his discretion revoke at any time, exempt such factory from all or any of such provisions subject to such conditions, if any, as he may specify therein.”

## **SCHEDULE XXVIII**

### **Fire works manufactories and match factories.**

1. **Application.**- The provisions of this Schedule shall apply to all manufactories and processes incidental thereto carried on in any fire works manufactory or a match factory and shall be in addition to and not in derogation of any provisions of the Factories Act, 1948 (Central Act No. 63 of 1948) and the Goa Factories Rules, 1985, or of any other Act or Rules that are applicable to fire works manufactories and match factories.

2. **Definitions.**- For the purpose of this Schedule, unless there is anything repugnant in the subject or context,-

(a) “fire works manufactory” means any factory or such parts of any factory wherein the following chemicals or combination of chemicals and materials are being used for the manufacture of crackers, sparklers, caps. fuses, blasting powder and fire works:-

- (1) Saltpetre;
- (2) Pyrotechnic Aluminium Powder;
- (3) Barium Nitrate
- (4) Charcoal;
- (5) Potassium Chloride;
- (6) Red Phosphorus;
- (7) Gum;
- (8) Dextrin;

- (9) Strontium Nitrate;
  - (10) Magnesium Powder
  - (11) Copper Coated Wires;
  - (12) Steel Filings Or Iron Filings;
  - (13) G. I. Wire;
  - (14) Gun Powder (Black Powder);
- (b) “**Match factory**” means any establishment which manufactures safety matches or colour matches by the use of chemicals mentioned in clause (a);
- (c) “**breathing apparatus**” means a device covering mouth or nose with necessary connections by means of which a person using it in a poisonous, asphyxiating or irritant atmosphere breathes ordinary air or any other suitable apparatus approved in writing by the Chief Inspector in this behalf.
3. **Building.-** (a) The height of building of any fire works manufactory or match factory shall not be less than 3 metres;
- (b) No building inside a fire works manufactory shall have a first floor at any time;
  - (c) In match factory provided with a first floor, there shall be 2 staircases leading from the first floor to the ground floor irrespective of the number of persons employed on the first floor and one of the staircases shall be of masonry construction of non-flammable materials;
  - (d) All doors of workrooms shall open outwards and all the doorways shall be kept free from obstructions;
  - (e) All doors of workrooms shall not be less than 1.2 metres in width or less than 2 metres in height.
  - (f) The floors of all workrooms including mixing sheds shall be completely covered by a rubber sheet having a smooth surface and having a thickness of at least 3 m.m. If the floor cannot be covered by a single rubber sheet, more than one rubber sheet may be used so that each sheet is overlapped by the other at least 150 m.m; and
  - (g) mixing sheds shall be 30.5 metres away from all other sheds and be separated by baffle walls opposite each exit of the mixing shed.
4. **House keeping.-** (a) Every part of ways, works, machinery and plant shall be maintained in a clean and tidy condition.
- (b) Any spillage of materials shall be cleaned without delay, and
  - (c) Close platforms, passages and gangways shall be kept free of temporary obstructions.
5. **Electrical Equipment.-** (a) If, at any time, use of electricity is allowed in the match factory, all leads shall be in conduits with flameproof junctions;
- (b) Electrical supply shall never be through a lamp even with a non-conducting handle.
6. **Protective Measures.-** (a) Under no circumstances clothes made of artificial fibre like terelene, etc., be allowed inside the factory;

- (b) All workers shall be supplied with asbestos aprons especially to cover the chest, gonads and thighs;
- (c) Breathing apparatus shall be used in mixing sheds to avoid workers inhaling poisonous fumes in the event of an untoward reaction;
- (d) In mixing sheds where aluminium and magnesium powders are used, “anti-stat” footwear to combat static electricity shall be supplied; and
- (e) All protective equipments shall be maintained in an efficient condition and shall also be maintained in a clean and hygienic condition.

**7. Match Factories.-** In match factories -

- (a) the residue of the head composition shall not in any way be mixed with the residue of the friction composition;
- (b) the rooms comprising the two mixing departments, namely, (a) head composition and (b) friction composition, shall be entirely separated from each other and the drains from these two departments shall be kept entirely separate;
- (c) waste products containing the residues of the head composition and friction composition shall be kept and burnt separately;
- (d) department in which completed matches (matches with head on) are stored shall be separated from all other departments by means of fire-proof walls and doors providing adequate means of escape in case of fire;
- (e) splints, veneers and other materials in excess of the quantity required for the day’s manufacture shall be kept in separate rooms of the factory, where no manufacturing process is carried on. No manufactured material shall be stored anywhere in the factory compound for more than five days after the manufacture, except in the storage godowns:

Provided that nothing contained in this clause shall apply to splints and veneers in cases stored in peeling and box making departments;

- (f) store room for matches shall be entirely separated by fire-proof walls from the buildings used for manufacture;
- (g) the racks in the dipped splints room shall have sides stop and the rear part provided with non-inflammable materials;
- (h) the process of packing shall be done in an area away from the place of manufacture to the satisfaction of the Inspector; and
- (i) no child shall be employed or permitted to work directly connected with the manufacturing process upto final production of matchsticks.

**8. Precaution to be taken in connection with manufacture of fuses used in crackers, etc.-**

- (a) Bundles of fuses shall be handled by carrying and not dragging them on the floor.
- (b) Drying of fuses after wrapping shall be carried out on platforms away from workrooms.
- (c) Cutting shall be done by experienced workers employed only for this purpose and under proper supervision.

- (d) Cutting shall be done on a large masonry platform covered with a tarpaulin and kept free from grit and pebbles.
  - (e) Cutting shall be done on a raised platform so that workers can work standing. Cutting must be done by placing the fuse on wooden sleepers, kept over blocks of wood, and brick shall not be used beneath the wooden reapers; and
  - (f) Workers, while on dangerous operations, shall not wear clothing sewn with ferrous or steel buttons, buckles or attachments. They shall not carry on their person, iron knives, keys, etc.
9. **Employment of women and children.-** Women workers and young persons shall not be employed on operation where chemicals are mixed and where fuses are cut. Children shall not be employed or permitted to work in the manufacturing process or any work or operation or process connected therewith or incidental thereto in fireworks manufactory.
10. **General.-** (a) No person, other than a factory worker and/or an inspecting officer or others connected with the manufacturing process, shall be allowed to enter the working area.
- (b) Cardboard containers and trays without steel nails shall be used for storage and day-to-day working purposes.
  - (c) During the manufacture of fuses, only brass or non-ferrous knives shall be used and drying of fuses shall be away from all workrooms.
  - (d) Door mats shall be provided outside the workroom, near all drying platforms and where fuses are cut, for the workers to clean their feet.
  - (e) At no time, mixing materials shall exceed the quantity that is required for the manufacture of mixing for half an hour operation only.
  - (f) For filling up chemicals in the inner tubs of crackers, only aluminium or plastic rings shall be used and not galvanized iron rings.
  - (g) Buckets, containers, hoops, locks, nails, screws, bolts, nuts, knives, scissors, etc. made up of iron shall not be used within the factory premises.
  - (h) Wooden racks without iron nails shall be used for drying paper cap sheets, in a match process factory.
  - (i) Wooden racks used for drying paper cap sheets shall be provided with asbestos or other fire resistant sheets on the three sides leaving the front side open.
  - (j) Dried paper cap sheets shall be carried in wooden trays with four compartments (partitions), each compartment (partition) carrying a single sheet.
  - (k) Each manufacturing shed of a fire works shall have at least two doors facing each other. The doors provided to the work sheds of adjacent rows shall not face each other, and
  - (l) Not more than four persons shall be employed or allowed at any one time in any one building in which explosive is being manufactured.
11. **Display of notices.-** The following notices in the local language understood by the majority of workers shall be displayed at a conspicuous place in the factory:-
- (a) "Smoking is strictly prohibited"
  - (b) "No one shall carry matches or other igniting materials into the factory."

- (c) “No worker shall be in a workroom or area where no work has been assigned to him.”
  - (d) “If anything untoward happens in any shed, all workers shall dash to the gates, which serve as out gates of the factory and in no circumstances be curious to see what has happened in the affected shed;”
  - (e) “Any spillage of materials should be cleaned without any delay;”
  - (f) “Wearing of clothes made of artificial fibre like terrene, terelene, etc., is prohibited. Clothing’s sewn with ferrous or steel buttons or buckles or attachments should not be worn;”
  - (g) “Foot wears with iron nails should not be used; and
  - (h) “Workers should not carry with themselves iron knives and iron keys, etc.”
12. **First-aid boxes.-** (a) The materials required under rule 93 shall be kept in the First Aid Box or cupboard. In addition, four stretchers shall be available for every twenty persons employed in the premises.
- (b) Adequate amount of burn dressings and 24 ounces of coconut oil to be used, as the first remedy for burns shall be kept in the First Aid Box or cupboard; and
  - (c) persons who are in charge of First Aid Boxes or cupboards shall be those who possess the certificate granted by the St. John’s Ambulance Association for rendering first aid.
13. **Exemption.-** If the Chief Inspector is satisfied in respect of any factory or any process that, owing to the special conditions or special methods of work or by reason of the frequency of the process or for other reason, the application of all or any of the provisions of the Schedule to the factory or process, or to the persons employed in such factory or process is not necessary, he may, by order in writing, exempt such factory or part of the factory or process or any part of the factory or any person from all or any of these provisions subject to such conditions as he may deem expedient to ensure safety and health of the workers.

The Chief Inspector may, at any time, in his discretion, revoke such order without assigning any reasons”.

**Rule Prescribed under Section 88 and 88-A:**

**132. Notification of accidents and dangerous occurrences.-** (1) When any accident which results in the death of any person or which results in such bodily injury to any person as is likely to cause his death, or any dangerous occurrence specified in the Schedule annexed hereto takes place in a factory, the manager of the factory shall, within four hours of the happening of such accident or occurrence, send a notice thereof by telephone, special messenger or telegram to the Inspector and the Chief Inspector and also the Administrative Medical Officer, Employees’ State Insurance Scheme, Panaji.

(2) When any accident or any dangerous occurrence specified in the Schedule annexed hereto, which results in the death of any person or which results in such bodily injury to any person as is likely to cause his death, takes place in the factory, notice as mentioned in sub-rule (1) shall be sent also to:

- (a) the District Magistrate or Sub-divisional Magistrate;
- (b) the officer-in-charge of the nearest Police Station; and

(c) the relatives of the injured or deceased person.

(3) Any notice given as required under sub-rule (1) and (2) shall be confirmed by the manager of the factory to the authorities mentioned in those sub-rules within 12 hours of the accident or the dangerous occurrence by sending them a written report in Form No. 30 in the case if an accident or dangerous occurrence causing death or bodily injury to any person and in Form No, 31 in the case of a dangerous occurrence which has not resulted in any bodily injury to any person.

(4) When any accident or dangerous occurrence specified in the Schedule takes place in a factory and it causes such bodily injury to any person as prevents the person injured from working for a period of 48 hours or more immediately following to accident or the dangerous occurrence, as the case may be, the manager of the factory shall send a report thereof to the Inspector in Form 30 within 24 hours after the expiry of 4 hours from the time of the accident or the dangerous occurrence:

Provided that if in the case of an accident or dangerous occurrence, death occurs of any person injured by such accident or dangerous occurrence after the notices reports referred to in the foregoing sub-rules have been sent, the manager of the factory shall forthwith send a notice thereof by telephone, special messenger or telegram and also have this information confirmed in writing within 12 hours of the death to the authorities and persons mentioned in sub-rules (1) and (2):

Provided further that, if the period of disability from working for 48 hours or more referred to in sub-rule (4) does not occur immediately following the accident, or the dangerous occurrence, but later or occurs in more than one spell, the report referred to in the foregoing sub-rule shall be sent to the Inspector in the prescribed Form 30 within 24 hours immediately following the hour when the actual total period of disability from working and resulting from the accident or the dangerous occurrence becomes 48 hours.

## SCHEDULE

Dangerous occurrences, whether or not they are attended by personal injury or disablement shall include the following:-

1. Bursting of a plant used for containing or supplying steam under pressure greater than atmospheric pressure.
2. Collapse or failure of a crane, derrick, which, hoist or other appliances used in raising or lowering persons or goods, or any part thereof, or the overturning of a crane.
3. Explosion, fire bursting out, leakage or escape of any molten metal, or hot liquor or gas causing bodily injury to any person or damage to any room or place in which persons are employed, or fire in rooms of cotton pressing factories when a cotton opener is in use.
4. Explosion of a receiver or container used for the storage at a pressure greater than atmospheric pressure of any gas or gases (including air) or any liquid or solid resulting from the compression or gas.
5. Collapse or subsidence of any floor, gallery, roof, bridge, tunnel, chimney, wall, building or any other structure.

**Rule prescribed under sub-section (I) of Section 89 :**

**133. Notice of poisoning or disease.**- A notice in Form 32 shall be sent forthwith but not later than four hours to the Chief Inspector, the Certifying Surgeon and the Administrative Medical Officer, Employee's State Insurance Scheme, Panaji, Goa by the manager of a factory in which there occurs a case of lead, phosphorous, mercury, manganese, arsenic, carbon, disulphide or benzene poisoning; or of poisoning by nitrous fumes or by helogens or halogen derivatives of the hydrocarbons of the aliphate series; or of chrome ulceration, anthrax, silicosis, toxic anaemia, toxic jaundice, primary epitheliomatous cancer of the skin, or of pathological manifestations due to radium or other radio-active substances or X-rays.

**CHAPTER X**  
**SUPPLEMENTAL**

**Rule prescribed under sub-rule (I) of Section 107:**

**134. Procedure in appeals.-** (1) All appeal presented under Section 107 shall lie with the Chief Inspector, or in cases where the order appealed against is an order passed by that officer, with the Government or with such authority as the Government may appoint in this behalf and shall be in the form of a memorandum setting forth concisely the grounds of objection to the order and bearing court fees stamp in accordance with Article 11 of Schedule II to the Court-fees Act, 1870, and shall be accompanied by a copy of the order appealed against.

(2) On receipt of the memorandum of appeal, the appellate authority shall, if it thinks fit or if the appellant has requested that the appeal should be heard with the aid of assessors, call upon the body declared under sub-rule (3) to be representative of the industry concerned, to appoint an assessor within a period of 14 days. If an assessor is nominated by such body, the appellate appoint a second assessor itself. It shall then fix a date for the hearing of the appeal and shall give due notice of such date to the appellant and to the Inspector whose such order is appealed against, and shall call upon such date to assist in the hearing of the appeal.

(3)The appellant shall state in the memorandum presented under sub-rule (1) whether he is a member of one or more of the following bodies. The body empowered to appoint the assessor shall-

- (a) if the appellant is a member of one of such bodies, be that body;
- (b) if he is a member of two such bodies, be the body which the appellant desires should appoint such assessor; and
- (c) if the appellant is not a member of any of the aforesaid bodies or if he does not state in the memorandum as to which of such bodies should appoint the assessor, be one of the following bodies which the appellant authority considers as the best fitted to represented the industry concerned namely:
  - 1. Goa Chambers of Commerce & Industry, Panaji
  - 2. Goa Small Industries Association, Margoa,
  - 3. Other associations of employers in the industry concerned.
- (d) An assessor appointed in accordance with the provisions of sub-rules (2) and (3) shall receive , for the hearing of the appeal, a fee to be fixed by the appellant authority, subject to a maximum of rupees seventy five per diem. He shall also receive the actual travelling expenses. The fees and travelling expenses shall be paid to the assessors by the Government, but where assessors have been appointed at the request of the appellant and the appeal has been decided wholly or partly against him the appellate authority may direct that the fees and travelling expenses of the assessors shall be paid in whole or in part by the appellant.

**Rule prescribed under sub-section (I) of Section 108:**

**135. Display of notices.-** The abstract of the Act and of the rules required to the displayed in

every factory shall be in Form No. 33.

**Rule prescribed under Section 110:**

**136. Returns** – The Manager of every factory shall furnish to the Inspector or other officer appointed by the government in this behalf, the following returns in the form and within the due dates specified below-

- (a) annual return in Form No. 34, in duplicate, on or before 31<sup>st</sup> January of each year;
- (b) half-yearly return in Form No. 35, in duplicate, on or before the 15<sup>th</sup> July of each year,
- (c) before the end of each year, a return giving before notice of all the days on which it is intended to close the factory during the next ensuing year. If in any year, a factory is newly started or re-started after its closure during the previous year, such returns shall be submitted before the date of such starting or re-starting for the remaining period of the year:

Provided that the Government may dispenses with this return in the case of any specified factory or of any class of factories or of the factories in any particular area:

Provided further that the annual return of holidays shall be dispensed with in case of all factories -

- (a) which regularly observe Sundays as holidays; or
- (b) which regularly observe a fixed day in the week as a holiday; or
- (c) which observe holidays according to a list approved by the Chief Inspector;

Where the manager of any factory makes any departure from such a holidays or list of holidays as aforesaid, prior intimation shall be given to the Chief Inspector.

- (d) Annual return of accidents in Form No. 37 or before the 31<sup>st</sup> January of the succeeding year.

**Rule prescribed under Section 109:**

**137. Service of notices.**- The dispatch by post under registered cover of any notice or order shall be deemed sufficient service on the occupier, owner or manager of a factory of such notice or order.

**Rule prescribed under Section 112:**

**138. Permissible levels of certain chemical substances in work environment.**- Without prejudice to the requirements in any other provisions in the Act or the Rules, the requirements specified in this Schedule shall apply to all factories.

## SCHEDULE

1. *Definitions.*- For the purpose of this Schedule-

- (a) “mg/m<sup>3</sup>” means milligrams of a substance per cubic meter of air;
- (b) “mppcm” means million particles of a substance per cubic meter of air;
- (c) “ppm” means parts of vapour or gas per million parts of air by volume at 25<sup>0</sup>C and 760 m of mercury pressure;
- (d) “time weighted average concentration” means the average concentration of a substance in the air any work location in a factory computed from evaluation of adequate number of air samples taken at that location, spread over the entire shift in any day, after giving weightage to the duration for which each such sample is collected and the concentration prevailing at the time of taking the sample.

$$\text{Time weighted average} = \frac{C_1 T_1 + C_2 T_2 + \dots + C_n T_n}{T_1 + T_2 + \dots + T_n}$$

$$\text{Concentration} = \frac{C_1 T_1 + C_2 T_2 + \dots + C_n T_n}{T_1 + T_2 + \dots + T_n}$$

Where  $C_1$  represents the concentration of substances for duration  $T_1$  (in hours)

$C_2$  represents the concentration of the substances for duration  $T_2$  (in hours)

and

$C_n$  represents the concentration of the substance for duration  $T_n$  (in hours)

- (e) “wok location” means a location in a factory at which a worker works or may be required to work at any time during any shift on any day’

2. *Limits of concentrations of substances at work locations.*- (1) The time weighted average concentration of any substance listed in Table 1 or 2 of the Schedule, at any day work location in a factory during the shift on any day shall not exceed the limit of the permissible time weighted average concentration specified in respect of that substance:

Provided that in the case of a substance mentioned in Table 1 in respect of which a limit in terms of short term maximum concentration is indicated, the concentration of such a substance may exceed the permissible limits of the time weighted average concentration for the substance for short periods not exceeding 15 minutes at a time, subject to the condition that-

- (a) such periods during which the concentration exceeds the prescribed time weighted average concentration are restricted to not more than 4 per shifts;
- (b) the time interval between any two such periods of higher exposure shall not be less than 60 minutes and
- (c) at no time the concentration of the substances in the air shall exceed the limit of short term maximum concentration.

(2) In the case of any substance given in Table 3 the concentration of the substance at any work location in a factory at any time during any day shall not exceed the limit of exposure for that substance specified in the table.

(3) In the cases where the word “skin” has been indicated against certain substance mentioned in Table 1 and 3, appropriate measures shall be taken to prevent absorption through

cutaneous routes particularly skin, mucous membranes, and eyes as the limits specified in these Tables are for conditions where the exposure is only through respiratory tract.

- (4) (a) In case, the air at any work location contains a mixture of such substances mentioned in Table 1, 2 or 3, which have similar toxic properties the time weighted concentration of each of these substances during the shift should be such, that when these time weighted concentration divided by the respective permissible time weighted average concentration specified in the above mentioned tables, and the fractions obtained are added together, the total shall exceed unity i.e.

$$\frac{C_1}{L_1} + \frac{C_2}{L_2} + \dots + \frac{C_n}{L_n} \text{ should not exceed unity}$$

When C1, C2 ..... Cn are the time weighted concentration of toxic substances 1, 2 ..... And n respectively, determined after measurement at work location;

And L1, L2 ..... Ln are the permissible time weighted average concentration of the toxic substances 1,2 ..... and n respectively.

- (b) In case the air at any work location contains a mixture of substances, mentioned in Table 1, 2 or 3, and these do not have similar toxic properties, then the times weighted concentration of each of these substances shall not exceed the permissible time weighted average concentration specified in the above mentioned tables, for the particular substance.
- (c) The requirement in clause (a) and (b) shall be in addition to the requirements in paragraph 2(1) and 2(2).

3. *Sampling and evaluation procedures.*- (1) Notwithstanding provision in any other paragraphs, the sampling and evaluation procedure to be adopted for checking compliance with the provisions in the Schedule are specified.

(2) Notwithstanding the provisions in paragraph 5, the following conditions regarding the sampling and evaluation with the provisions in this Schedule are specified.

- (a) For determination of the number of particles per cubic metre in item 1(a)(I)(1) in Table 2, samples are to be collected by standard or midget impinger and the counts made by light-filled technique.
- (b) The percentage of quartz in the 3 formulas given in item 1(a) (I) of Table 2 is to be determined from airborne samples.
- (c) For determination of number of fibres as specified in term 2 (a) of Table 2, the membrane filter method at 430X phase contrast should be used.
- (d) Both for determination of concentration and percentage of quartz for use in the formula given in item 1(a) (I) (2) of Table 2, the fraction passing through a size-selector with the following characteristic should only be considered.

Aerodynamic diameter (unit density sphere)	Percentage allowed by size-selector
2.0	90
2.5	75
3.5	50
5.0	25
10.0	0

4. *Power to require assessment of concentration of substances.*- (1) An Inspector may, by an order in writing, direct the occupier or manager of a factory to get before any specified date, the assessment of the time weighted average concentration at any work location of any of the substances mentioned in Table 1, 2 or 3 carried out.

(2) The results of such assessment as well as the method followed for air sampling and analysis for such assessment shall be sent to the Inspector within 3 days from the date of completion of such assessment and also a record of the same shall be kept readily available for inspection by an Inspector.

5. *Exemptions.*- If in respect of any factory or a part of a factory, the Chief Inspector is satisfied that, by virtue of the pattern of working time of the workers at different work locations or on account of other circumstances, no worker is exposed, in the air at the work locations, to a substance or substances specified in Table 1, 2, or 3 to such an extent as is likely to injurious to his health, he(the Chief Inspector) may by an order in writing, exempt the factory or a part of the factory from the requirements in paragraph 2, subject to such conditions, if any, as he may specify therein.

TABLE 1

Substance	Permissible limits of exposure			
	Time-weighted average concentration		Short-Term maximum concentration	
	pm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Acetic acid	10	25	15	37
Acrolein	0.1	0.25	0.3	0.8
Aldrin-skin	-	0.25	-	0.75
Ammonia	25	18	35	27
Aniline-skin	2	10	5	20
Anisidine (O-p-isomers)-skin	0.1	0.5	-	-
Arsenic & compounds (as As)	-	0.2	-	-
Benzene	10	30	-	-
Bromine	0.1	0.7	0.3	2
2 Butanone (Methylethyl Ketone-MEK)	200	590	300	885
n-Butyl acetate	150	710	200	950
Sec/tert. Butyl acetate	200	950	250	1190
Cadmium-dust and salts (as Cd)	-	0.05	-	0.2
Calcium Oxide	-	2	-	-

Carbaryl (Sevin)	-	5	-	10
Carbonfuran (Furadan)	-	0.1	-	-
Carbon disulfide-skin	20	60	30	90
Carbon monoxide	50	55	400	440
Carbonyl chloride (Phosgene)	10	65	20	130
Carbon tetrachloride-skin	0.1	0.4	-	-
Carbonyl chloride (mono chlorobenzene)	75	350	-	-
Chlorine bis-Chloromethyl ether	1	3	3	9
Chromic acid and chromates (as Cr)	0.001	-	-	-
Chromium, Sel. Chromic, Chromous salts (as Cr.)	-	0.05	-	-
Copper fume	-	0.5	-	-
Cotton dust, raw	-	0.2	-	0.6
Cresol, all isomer-skin	5	22	-	-
Cyanides, (as CN)-skin	-	5	-	-
Cyanogen	10	20	-	-
DDT (Dichlor-diphenyltrichloro-ethane)	-	1	-	3
Demeton-skin	0.01	0.1	0.03	0.3
Diazinon-skin	-	0.1	-	0.3
Dibutyl phthalate	-	5	-	10
Dichlorves (DDVP)-skin	0.1	1	0.3	3
Dieldrin-skin	-	0.25	-	0.75
Dinitrobenzene (all isomers)-skin	0.15	1	0.5	3
Dinitrotoluene-skin	-	1.5	-	5
Diphenyl	0.2	1.5	0.6	4
Endosulfan (Thiodan-skin)	-	0.1	-	0.3
Endrin-skin	-	0.1	-	0.3
Ethyl acetate	400	1000	-	-
Ethyl alcohol	1000	1900	-	-
Ethyl emine	10	18	-	-
Flourides (as F)	-	2.5	-	-
Flourine	1	2	2	4
Hydrogen cyanide-skin	10	11	15	16
Hydrogen sulfide	10	15	15	27
Iron Oxide fume (Fe <sub>2</sub> O <sub>2</sub> as Fe)	-	5	-	10
Isoamyl acetate	100	525	125	655
Isoamyl alcohol	100	360	125	450
Isobutyl alcohol	50	150	75	225
Lead, inorg, fumes and dusts (as Pb)	-	0.15	-	.45
Lindane-skin	-	0.5	-	1.5
Malathion-skin	-	10	-	-
Manganese fume (as Mn)	-	1	-	3
Mercury (as Hg)	-	0.05	-	0.15
Mercury (alky compounds)-skin (as Hg)	0.001	0.01	0.003	0.03
Methyl alcohol (methanol)-skin	200	260	250	0.03
Methyl cellosolve-skin (2 methoxy ethanol)	25	80	35	120
Methyl isobutyl ketone-skin	100	410	125	510

Naphthalane	10	50	15	75
Nickel carbonyl (as Ni)	0.05	0.35	-	-
Nitric acid	2	5	4	10
Nitric oxide	25	30	35	45
Nitrobenzene-skin	1	5	2	10
Oil mist-mineral	-	5	-	10
Parathion-skin	-	0.1	-	0.3
Phenol-skin	5	19	10	38
Phorate (thimet)-skin	-	0.05	-	0.2
Phasgene (Carbonyl cholride)	0.1	0.4	-	-
Phosphine	0.3	0.4	1	1
Phosphorous (Yellow)	-	0.1	-	0.3
Phosphorous pentachloride)	-	1	-	-
Phosphorous trichloride	0.5	3	-	-
Picric acid-skin	-	0.1	-	0.3
Pyridine	5	15	10	30
Silane (silicon tetrahydride)	0.5	0.7	1	1.5
Styrene, monomer (phenyl-ethylene)	100	420	125	525
Sulfur dioxide	5	13	-	-
Sulfuric acid	-	1	-	-
Toluene (toluol)-skin	100	375	150	560
o-Toludine	5	22	10	44
Trichloroethylene	100	535	150	800
Vinyl Chloride	5	10	-	-
Welding fumes (NOC)	-	5	-	-
Xylene (o-m-p-isomers)-skin	100	435	150	655

TABLE 2

Substance	Permissible time weighted Average concentration
1. Silica	
(a) Crystalline	
(i) Quartz	
(1) In terms of dus count	} $\frac{1060 \text{ mppcm}}{\% \text{ Quartz} + 10}$
(2) In terms respirable dust	} $\frac{10 \text{ mg/m}^2}{\% \text{ respirable quatrz} + 2}$
(3) In terms of total dust	} $\frac{30 \text{ mg/m}^3}{\% \text{ Quartz} + 3}$
(ii) Cristobalite	Half the limits given against quartz.
(iii) Tridymite	Half the limits given against quartz
(iv) Silica fused	Same limit as for quartz.
(v) Tripoli	Same limit as in formula in item 2 given against quartz.
(b) Amorphous	705 mppem.
2. Silicate having less than 1% free	

silica by weight

(a) Asbestos – fibres longer than 5 microns

(i) Amisite	0.5 fibre/ cubic centimetre
(ii) Chrysotile	2 fibres/ cubic centimeters
(iii) Crocidolite	0.2 fibre / cubic centimeters
(iv) Other form	2 fibres / cubic centimeter

(b) Mica 705 mppcm

(c) Mineral wool fibre 10 mg/m<sup>2</sup>

(d) Porlite 1060 mppcm

(e) Portland cement 1060 mppcm

(f) Soap tone 705 mppcm

(g) Talc (nonabostiform) 705 mppcm

(h) Talc (fibrous) Same limit as for asbestos

(i) Tromlite Same limit as for asbestos

### 3. Coal dust

(1) For airborne dust having

Less than 5% silicon dioxide 2 mg.m<sup>3</sup>

By weight

(2) For airborne dust having Same limit as prescribed

Over 5% silicon dioxide by formula in item (2) against quartz.

TABLE 3

Substance	Permissible limit of exposure	
	Ppm	mg/m <sub>3</sub>
Acetic anhydride	5	20
O-Dichlorobenzene	50	300
Formeldehyde	2	3
Hydrogen Chloride	5	7
Manganes & compounds (as Mn)	-	5
Nitrogen dioxide	5	9
Nitroglycerin-skin	0.2	2
Potassium hydroxide	-	2
Sodium hydroxide	-	2
2,4, 6-Trinitrotoluene (TNT)	-	0.5

**139. Information required by the Inspector.-** The occupier, owner or manager of a factory shall furnish any information that an Inspector may require for the purpose of satisfying himself whether any provision of the Act has been complied with or whether any order or an inspection has been duly carried out. Any demand by an Inspector for any such information if made during the course of inspection, shall be complied with forthwith, or if made in writing, shall be complied with within seven days or receipt thereof.

**140. Muster-roll.-** (1) The Manager of every factory shall maintain a muster-roll of all the workers employed in the factory in Form No. 36 showing (a) the name of each worker, (b) the nature of his work, and (c) the daily attendance of the worker.

(2) The muster-roll shall be written up afresh each month and shall be preserved for a period of 3 years from the date of last entry in it:

Provided that if the daily attendance is noted in respect of adults and children workers in the Registers of Workers in Form 10 and 20, respectively, or the particulars required under sub-rule (1) are noted in any other register, and such register are preserved for a period of 3 years from the date of last entry in them, a separate muster-roll required under sub-rule (1) need not be maintained.

**141. Register of accidents and dangerous occurrences.-** (1) The manager of every factory shall maintain a register of all accidents and dangerous occurrences which occur in the factory in Form No. 37 showing the-

- (a) name of injured person (if any);
- (b) date of accident or dangerous occurrence;
- (c) date of report on Form No. 30 or 31 as the case may be to Inspector;
- (d) nature of accident or dangerous occurrence;
- (e) date of return of injured person to work;
- (f) number of days of absence from work of injured person.

(2) The manager of every factory shall furnish to the Inspector a copy of the entries in Form 39, quarterly, on or before 15<sup>th</sup> April, 15<sup>th</sup> July, 15<sup>th</sup> October and 15<sup>th</sup> January relating to the quarters ending 31<sup>st</sup> March, 30<sup>th</sup> June, 30<sup>th</sup> September and 31<sup>st</sup> December, respectively and also before 31<sup>st</sup> January of each year of the entries for the year preceding as required under sub-rule (d) of rule 136.

**142. Maintenance of Inspection Book.-** (1) The manager of every factory shall maintain a bound inspection book in Form No. 38 of the size 35 cms. X 20 cms and shall produce it when si required by the Inspector or Certifying Surgeon.

(2) The Inspection Book shall contain at least 180 pages. Every third page thereof shall be consecutively numbered and the other two numbered pages shall have a vertical perforated straight line on the margin side at a margin of 2.54 cms.

(3) In case the Inspection Book containing remarks passed by the Inspector or Certifying Surgeon is lost, the manager of the factory shall forthwith report in writing the loss of the

Inspection Book to the Inspector in charge of the area and immediately open a new Inspection Book.

The manager shall obtain as early as possible copies of all available remarks for the Factory Inspection Office concerned, on payment of necessary typing charges.

**143. Information regarding closure of factories.-** (1) The occupier and the manager shall be jointly or severally responsible for sending information in duplicate, to the Inspector of any intended closure of the factory or any shift, section or department thereof, immediately after it has been decided to do so, and before the closure takes place, stating-

- (a) the date of intended closure;
- (b) the reasons for closure;
- (c) the number of workers on the muster-roll of the factory on the day the information is sent;
- (d) the number of workers likely to be affected by the closure;
- (e) the probable period of closure:

Provided that in the case of any factory in respect of which Standing Orders settled or certified under the Industrial Employment (Standing Orders) Act, 1946 provided for the display of the notice boards of the factory of notice of the proposed closure of the factory or any shift, section or department thereof, such information to the Inspector shall be given on the date on which such notices is displayed:

Provided further that it shall not be necessary for the occupier or manager to send information of intended closure is rendered inevitable on account of fire, break-down of machinery, stoppage of power or water supply or any other cause beyond his control.

(2) The occupier and the manager shall be jointly or severally responsible for sending also information in duplicate to the Inspector as soon as the factory or any shift, section or department thereof, is actually closed in the following form, namely:-

Name of factory and full address	Name of Industry	Date of Closure	Reasons of Closure	Nature of closure whether entire of partial; if partial the shift, section or department closed	Number of workers on the muster roll of factory at the time of closure	Number of workers affected by the closure
1	2	3	4	5	6	7

Class of industry whether (1) Cotton Textile, or (2) Silk Textile or (3) Woolen Textile, or (4) Hosiery, or (5) Engineering, or (6) Miscellaneous should be stated.

(2) The occupier and the manager shall be jointly or severally responsible for sending also information, in duplicate, to the Inspector as soon as the factory or any shift, section or department thereof is re-opened in the following form, namely:-

Name of factory and full address	Name of Industry	Date of Closure	Number of workers affected by the closure	Factory of any shift, section or department thereof reopened	Number of workers on the muster roll of factory at the time of closure	Number of workers (i) re-employed (ii) newly employed
1	2	3	4	5	6	7

Class of industry whether (1) Cotton Textile, or (2) Silk Textile or (3) Woolen Textile, or (4) Hosiery, or (5) Engineering, or (6) Miscellaneous should be stated.

*Explanation 1.* – For the purpose of this rule, ‘closure’ means the closing of a factory, or any shift, section or department thereof or the total or partial suspension of work (other than work of a temporary nature) by the occupier or manager of the factory, or total or partial refusal by the occupier or manager of the factory to continue to employ persons employed by him where such refusal does not amount to discharge, dismissal or suspension of a worker or workers by way of punishment.

*Explanation 2.*- This rule shall not apply in the case of a closure of any section or department of a factory if such closure does not affect the total number of workers employed in the factory.

**144. Repeal and saving.**- On the date of commencement of these rules, the Goa, Daman and Diu Factories Rules, 1965 shall stand repealed, except as respects things done or omitted to be done.

FORM – 0-1

Prescribed under rule 2-A

**Form of application for grant of certificate of competency to a person**

1. Name
2. Date of birth
3. Name of the organisation  
(if not self-employed)
4. Address of office and sub-offices
5. Designation
6. Educational qualification  
(copied of testimonials to be attached)
7. Details of professional experience  
(in chronological order)

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Name of the Organisation	Period of service	Designation	Area of responsibility
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- 
8. Membership, if any, of professional bodies.
  9. (i) Details of facilities / equipment available at his disposal for examination, testing, etc., of hoists, lifts, lifting machines, ropes, lifting tackles and pressure vessels or plants etc.  
(ii) Arrangements for calibrating and maintaining the accuracy of these facilities.  
(iii) Details of technical staff

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Sr. No.	Name	Designation	Qualifications	Experience
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10. Purpose for which competency certificate is sought (specify section or sections of the Act.)
  11. Whether the applicant has been declared as a competent person under any statute. (If so, furnish details)
  12. Is your organisation operative outside India offering similar services and, if so in which countries (give details)
  13. Any other relevant information.
  14. Declaration by the Applicant.

I,....., hereby declare that the information furnished above is true, I undertake-

- (a) that in the event if any change in the facilities at my disposal (either addition or deletion) or my leaving the aforesaid organisation, I will promptly inform the Chief

Inspector.

- (b) To maintain the facilities in good working, order, calibrated periodically as per manufacture's instructions or as per national Standards; and
- (c) To fulfil and abide by all the conditions stipulated in the certificate of competency and instructions issued by the Chief Inspector from time to time .

Place :

Date :

Signature

*To be filled in by the institution ( if employed)*

I,..... certify that Shri ..... whose details are furnished above, is in our employment and nominate him on behalf of the organisation for the purposes of being declared as a competent person under the Act:

I also undertake that I will –

- (a) notify the Chief Inspector in case the competent person leaves our employment.
- (b) Provide and maintain in good order all facilities at his disposal as mentioned above.
- (c) Notify the Chief Inspector any change in the facilities (either additions or delection).

Signature .....

Designation .....

Telephone No. ....

OFFICAL SEAL

Date :

FORM – 0-2

Prescribed under rule 2A

**Form of application for grant of Certificate of Competency to an Institution**

1. Name and full address of the organisation
2. Organisation's status (specify whether Government, Autonomous, Co-operative, corporate or private)
3. Purpose for which Competency Certificate is sought (specify section(s) of the Act.)
4. Whether the organisation has been declared as a competent persons under this or any other statute. If so, give details.
5. Particulars of persons employed and possessing qualification and experience as set out in Schedule annexed to sub-rule (1) of rule 2A.

Sr. No.	Name and Designation	Qualifications	Experience	Section(s) and the Rules under which Competency is Sought for
1				
2				

6. Details of facilities (relevant to item 3 above) and arrangement made for their maintenance and periodic calibration.
7. Any other relevant information.
8. Declaration

I, \_\_\_\_\_ hereby, on behalf of \_\_\_\_\_ certify the details furnished above are correct to the best of my knowledge, I undertake to –

- (i) maintain the facilities in good working order, callbrated periodically as per manufacturers instruction or as per National Standards; and
- (ii) to fulfill and abide by all the conditions stipulated in the certificate of competency and instructions issued by the Chief Inspector from time to time

Place :

Date :

Signature of Had of the Institution  
Or of the persons authorised to sign  
On his behalf

Designation.

FORM- O-3

Prescribed under rule 2-A

**Form of certificate of competency issued to a person or an institution.**

I,..... In exercise of the powers conferred on me under section 2 (ca) of the Factories Act, 1948, and the rules made thereunder, hereby recognise ..... (name of the institution) or Shri ..... (name of the person) employed in ..... (name of the organisation) to be a competent person for the purpose of carrying out tests, examinations, inspections and certification for such buildings, dangerous machinery, lifts and hoists, lifting machines and lifting tackles, pressure plants, confined space, ventilation systems and process or plant and equipment, as the case may be used in a factory located in ..... under section ..... And the rules made thereunder (strike out words not applicable)

This certificates is valid from ..... to .....

This certificate is issued subject to the conditions stipulated hereunder:-

- (i) The tests, examination and inspections shall be carried out in accordance with the provisions the Act and the rules made thereunder :-
- (ii) The tests, examination and inspections shall be carried out under the direct supervisions of the competent person or by a person so authorized by an institution recognized to be a competent person.
- (iii) The certificate of competency issued in favour of a person shall stand cancelled if the person declared competent leaves and organisation mentioned in his application.
- (iv) The institution recognised as competent person shall keep the Chief Inspector informed of the names, designations and qualifications of the persons authorised by it to carry put tests, examinations and inspections:
- (v) \_\_\_\_\_
- (vi) \_\_\_\_\_

Station :

Date:

OFFICIAL SEAL

Signature of the Chief Inspector

*Note* : A separate certificate should be issued under each relevant section. A person or an institution may be recognised competent for the purpose of more than one section of the Act.

FORM No. 1

(See Rule 3)

**Application for permission to construct, extend or take into use any building as factory**

1. Application for -
  - (a) Constructing a new building
  - (b) Extending the existing building
  - (c) Taking into use any building as a factory

*(Tick one or more, as applicable)*
  
2. Applicant's name and residential address, including telephone number  
*(in block letters)*
  - (a) Permanent
  - (b) Local
  
3. Full name and postal address of factory including phone No.
  - (a) Name
  - (b) Address  
*(town or village/district/pin code No.)*
  
4. Please indicate also the following details:-
  - (a) nearest police station
  - (b) nearest railway station or steamer ghat
  - (c) nearest public hospital
  
5.
  - (a) Whether already registered as factory
  - (b) If Yes
    - (i) Registration No.
    - (ii) Licence No.
    - (iii) Date of renewal of licence.
  - (c) Does it fall in hazardous category under section 2(cb)
  - (d) If so, has site been approved under section 41A
  - (e) If site has been approved, date of approval
  
6. Particular of plant to be installed
  
7. Enclosures -
  - (a) Flow chart of the manufacturing process
  - (b) Brief description of the process in its various stages
  - (c) Plan, in duplicate, drawn to scale, showing -
    - (i) The site of factory and immediate surroundings

including adjacent buildings and other structures, roads, drains, etc.

(ii) The plan, elevation and necessary cross-section of the various buildings indicating all relevant details relating to natural lighting, ventilation and means of escape in case of fire. The plan shall also clearly indicate the position of the plant and passage-ways.

(d) Such other particulars as are required by the Chief Inspector at the time of submission of the application.

Rubber stamp and signature  
of the applicant

Name of applicant  
(*in block letters*)

Date:-

- Notes:* (1) Applicant should be the occupier of the factory, as defined under section 2(n) of the Factories Act, 1948.
- (2) The application in this Form is not valid after 3 months from the date of submission, if plans are not approved.

FORM No. 2

(See rules 6 and 15)

**Application for registration and grant or amendment of Licence and Notice of Occupation**

(To be submitted in triplicate)

1. Application for
  - (a) Registration, grant of licence and notice of occupation Yes/No
  - (b) Amendment of licence Yes/No
  
2. (a) Applicant's name
  - (b) (i) Whether factory already registered
  - (ii) If yes, registration No.
  - (iii) Licence No.
  - (iv) If no, date from which amenable under Factories Act, 1948
  
3. Full name and postal address of the factory -
  - (a) Name of the factory
  - (b) Address  
(town/village/district/pin code No.)
  
4. Please indicate following details also:-
  - (a) Nearest police station  
(specify distance)
  - (b) Nearest Railway Station  
(specify distance)
  - (c) Nearest Public Hospital  
(specify distance)
  
5. Full name and residential address of the person who shall be the manager of the factory for the purposes of the Act.
  
6. Full name and residential address of the occupier, that is -
  - (a) the proprietor or a partner of the firm  
OR
  - (b) a director of the company  
OR
  - (c) the person appointed to manage the affairs of the factory owned or controlled by Central Government or State Government or local authority  
OR
  - (d) any other (specify)
  
7. Full name and address of the owner of the premises or building (including the precincts thereof) referred to in section 93.
  
8. Please furnish reference number (s) and date (s) and of approval (s) of the plans of site and building for disposal of trade wastes and effluents by the concerned authorities.

	<i>Authority</i>	<i>Details</i>
	(i) State Government	.....
	(ii) Local Authority	.....

- (iii) Chief Inspector
  - (iv) Pollution Control Board .....
  - (v) Other Concerned Authority .....
- (specify)

9. (a) Nature of manufacturing processes to be carried out in the factory List of processes
- (b) In case of application for amendment indicate manufacturing processes carried out previously List of processes
10. Name and quantities of raw materials used, intermediate products and principal finished products during the twelve months (incase of factories already in existence) Name Quantity (Vo./wt./No.)
11. (i) Number of workers employed in the factory Employed in the last 12 months Proposed to be employed in next 12 months
- (a) Maximum number
  - (b) Number ordinarily employed
- (ii) Nature and total amount of power (in kilowatts)
- (a) Installed
  - (b) Proposed to be installed
12. Fees paid (details) Rs. ....in figures ..... Rupees.....in words ..... vide treasury challan No. ....dated ..... or Book adjustment vide order .....No. ....dated ..... ..
- (1) Signature of the Occupier  
Name (in block letters)  
Telephone No.
- (2) Signature of the Manager  
Name (in block letters)  
Telephone No.

Date:

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**NOTES:**

- (1) This form should be completed in ink in block letters or types
- (2) Strike off whichever is not applicable
- (3) If power is not used at the time of filling up this Form but introduced later, the fact should be communicated to the Chief Inspector of Factories.
- (4) The term 'ordinarily employed' would mean the total number of workers working in all the shifts which should be over 50% of the working days in the factory.

FORM No. 3  
(See rule 9)

**Application for Renewal of Licence**

Registration No.:  
Licence No.:  
NIC code No.:  
(as given in the licence)

1. Full name of the factory
2. Address
3. Full address to which communication shall be carried (where the factory address serves the purposes of communication also, this information need not be given)
4. A flow chart of the manufacturing process, supplemented by a brief description of the process in its various stages, list of the raw material used, intermediate products, including emission of toxic gases, etc., finished products, by products, their quantities, methods of storage and handling, loading and transport and details of the arrangements for the disposal of trade waste and effluents, control or elimination (*to be enclosed*)
5. Maximum number of workers to be employed on any day during the year.
6. Installed power in K.W.
7. The period for which licence or renewal of licence is applied for
8. Name and residential address of occupier.
9. Name and residential address of manager
10. Amount of fee (Rupees .....  
paid vide treasury challan/crossed cheque/postal order No. ....  
dated..... on.. .....or by book  
adjustment vide order No. ... dated.....
  - (1) Signature of occupier  
Name (*in block letters*)  
and rubber stamp
  - (2) Signature of manager  
Name (*in block letters*)

FORM No. 4

(See rule 7)

**Licence to work a Factory**

Name of industry:

Registration No:

Licence No.:

NIC Code No.:

Licence is hereby granted to .....for the premises known as .. situated at... plans of which are approved vide (1). (2)..... (3)..... (4). .....for use as a factory within the limits stated hereinafter, subject to the provisions of the Factories Act, 1948, and the Rules made thereunder, for the following manufacturing processes:-

(1).....

(2).....

*(NIC code number for each process)*

The ..... 20.....

Chief Inspector of Factories  
and Boilers

**Details of licence**

	Valid for			Fees paid Rs.	Excess Rs.	Additional paid for late payment	Date of payment	Signature of the issuing authority
	Calendar year	Maximum number of workers on any one day	Maximum installed over in kilowatts					
Granted under rule 7								
Renewed under rule 9								

**Transfers**

To whom transferred	Date of transfer	Transfer fee paid and date of payment	Signature of the issuing authority

Amendments

Date when amended	Amended		Date of payment of amendment fee	Amendment fee paid (amount)	Signature of the issuing authority
	Workers	Installed power in kilowatts			

FORM No. 5

(See rule 16)

**Notice of change of Manager**

Name of the factory:  
Postal address of the factory  
(town/village, pin code No.)

Registration No.:  
Licence No.:  
NIC code No.:

1. Name of the outgoing manager:
2. Date of relinquishing charge:
- 3 (a) Name of the new manager:  
(b) Residential address:  
(c) Telephone number:
4. Date of appointment of the new manager:
5. Date on which charge is taken by the new manager:
6. Signature of the new manager:

Signature of the occupier  
Name (in block letters)  
Address and telephone No.

FORM No.6  
[See rule 19 (2)]

**Certificate of fitness for young person**

1. Serial No. :
2. Name of person examined :
3. Father's name :
4. Sex :
5. Residence :
6. Date of birth, if available :
7. Referred by -  
(a) Name and address of the factory :  
(b) Name of the Manager :
8. Manufacturing process in which young person is proposed to be employed :

I certify that I have personally examined the above named person whose identification marks are..... and who is desirous of being employed in the above mentioned manufacturing process, and that his/her age, as nearly as can be ascertained from any examination is.....years, and that he/she is \*fit/unfit for employment in the said manufacturing process as an \*adult/child.

Physical disability, if any:-

Whether the examination is required before :  
expiry of 12 months. Reasons for refusal/  
revocation of certificate.

Signature or left hand thumb impression of the person examined

Signature of Certifying Surgeon  
Name (in block letters)

Note:(1) To be issued by the Certifying Surgeon and a copy to be retained for 2 years.

(2) As per the proviso to sub-section (2) of section 69 of the Act, the Certifying Surgeon issuing this certificate should have personal knowledge of the place where the young person proposes to work and of the manufacturing process in which he will be employed.

(3) As per section 69 (3) of the Act, this certificate is valid for one year from the date of issue.

(4) In case of physical disability, the exact details should be clearly stated.

(5) \*Please delete what is not applicable.

(6) Young person means a child (who has completed 14 years and not completed fifteen years) or an adolescent (who has completed 15 years and not completed 18 years of age)

Form No. 7

[See Rules 19(7) and 90N and Schedules III, IV, VIII, X, XIV, XVI, XX, XXI, XXIII, XXV, XXVII to rule 131]

**HEALTH REGISTER**

1. Serial number in the register of adult workers
2. Name of worker

3. Sex:
4. Date of Birth:

Department/work	Name of hazardous process	Dangerous process/operation	Nature of job of occupation	Raw materials, products or by-products likely to be exposed to	Date of posting	Date of leaving/transfer to other work	Reasons for discharge/leaving or transfer	Medical examination And the result thereof		If declared unfit work						
								Date	Signs and symptoms observed during examination	Nature of tests and results thereof	Result fit/unfit	Period of temp withdrawal from that work	Reasons for such withdrawal	Date of declaring him unfit for that work	Date of issuing fitness certificate	Signature with the date of the factory Medical Officer/the Certifying Surgeon
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

Note:- (1) Separate page should be maintained for individual worker (2) Fresh entry should be made for each examination.

FORM No. 8

[See rule 21, 53 and 96 (7) (b)]

**Record of lime washing, painting, etc.**

Number and number of the room and its location in the factory	Parts of the room treated	Treatment, whether lime washed, colour washed, painted, varnished or oiled	Date of treatment	Remarks

FORM No. 9  
(See rule 29)  
**Humidity Register**

Department  
Hyprometer

Distinctive mark or number:  
Position in department

Year:

Month:

Date	Reading of hyprometer						Remarks	Signature of the person taking the reading
	Between 7 and 9 a.m.		Between 11 a.m. and 2 p.m. (but not in the rest interval)		Between 4 and 5.30 p.m.			
	Dry bulb	Wet bulb	Dry bulb	Wet bulb	Dry bulb	Wet bulb		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 <sup>st</sup>								
2 <sup>nd</sup>								
3 <sup>rd</sup>								
4 <sup>th</sup>								
5 <sup>th</sup>								
6 <sup>th</sup>								
to								
28 <sup>th</sup>								
29 <sup>th</sup>								
30 <sup>th</sup>								
31 <sup>st</sup>								

Certified that the above entries are correct

Signature and designation of the  
Person taking the reading

FORM No. 10

[See rules 61 and 80 (1)]

**Register of workers specially trained for work on or near machinery in motion**

1. Name of worker :
2. Serial number as in the register of adult workers :
3. Father's name :
4. Date of birth and age :
5. Nature of work :
6. Qualifications, if any, or period of service on similar work :
7. Date when tight fitting clothing was provided :
8. Remarks :

I certify that the above mentioned worker whose signature or left hand thumb impression is given below is a properly trained male adult worker who is competent to mount or ship belts, lubricate or do other adjusting operations on the machinery as specified in proviso to sub-section (1) of section 21, installed in my factory.

Signature or left hand thumb  
impression of worker

Signature of manager  
Name (in block letters)

Signature of occupier  
Name (in block letters)

Date:

FORM No. 11  
(See rule 65)

**Report of Examination of Hoists and Lifts**

Registration No.:  
Licence No.:  
NIC Code No.:  
(As given in the licence)

1. Occupier of premises :
3. (a) Type of hoist or lift and identification number or description :  
(b) Date of construction or reconstruction (if ascertainable) :
4. Are all parts of the hoist or lift of good mechanical construction, sound material and adequate strength (so far as ascertainable)?
5. Are the following parts of the hoists or lift properly maintained and in good working order? If not, state what defects have been found
  - (a) Enclosure of hoistway or liftway:
  - (b) Landing gates and cage gate(s):
  - (c) Interlock and the landing gates and cage gate(s):
  - (d) Other gate fastening:
  - (e) Cage and platform and fittings, guides, buffers, interior, of the hoistway or liftway
  - (f) Overrunning devices:
  - (g) Suspension ropes or chain and their attachments:
  - (h) Safety gear i.e. arrangements for preventing fall of platform or cage brakes:
  - (i) Brakes
  - (k) Worm or spur gearing:
  - (k) Other electrical equipment:
  - (j) Other parts:
6. What parts (if any ) were inaccessible ?:
7. Repairs, renewals or alterations (if any) required and the period within which they should be executed:
8. Maximum safe working load subject to repairs, renewals or alterations (if any) specified in item 7.:

Other particulars :

I/we certify that on (date) \_\_\_\_\_ .I/we have thoroughly examined this hoist or lift and the above is a correct report of the result.

Signature and name of the  
competent person

Number and date of the  
competency certificate

Date:

*Issued by:*

**Report of examination of the lifting machines, ropes and lifting tackles**

PARTICULARS

1. Name of the occupier of factory :
2. Address of factory :
3. Distinguishing number of mark, if any, and description sufficient to indentify the lifting machines, chains, ropes or the lifting tackle:
4. Date when the lifting machines. chain. rope or lifting tackle was first used in the factory:
5. Date of each examination made under section 29 (1) (a) (iii) and by whom it was carried out:
6. Date and number of the certificate relating to any test and examination made under sub-rule (1) and (9) of rule 67 together with the name of the person who issued the certificate:
7. Date of annealing or other heat treatment of the chain and lifting tackle carried out under sub-rule (7) of rule 67 and by whom it was carried out:
8. Particulars of any defect found at any such examination or after annealing and affecting the working load and of the steps taken to remedy defect.

I/We certify that on. \_\_\_\_\_I/We thoroughly, examined the above mentioned machine/chain/rope/lifting tackle and that the above is a correct report of the result.

Signature

countersignature

If employed by a Company or Association.  
give name and address.

Qualification

Date:

Address

Date.

FORM NO.13.  
[See rule 68(9)(b) ]

**Report of Examination or Test of Pressure Vessels or Plant**

Registration No:  
Licence No:  
NIC Code No:  
(As given in the Licence)

1. Occupier of premises:
2. Address:
3. Name, description and distinctive number of pressure vessel of plant:
4. Name and address of manufacturer:
5. Nature of process in which it is used:
6. Particulars of pressure vessel or plant-
  - (a) Date of construction:
  - (b) Thickness of walls:
  - (c) Date on which it was first taken into use:
  - (d) Safe working pressure recommended by the manufacturer:
  - (e) Design pressure, if known:
7. Date of -
  - (a) Last external examination:
  - (b) Last internal examination:
  - (c) Last hydraulic examination:
  - (d) Last ultrasonic test or other NDT test:
8.
  - (a) Whether lagging was removed for purposes of examination:
  - (b) Is the vessel exposed to wetness or dampness:
9. Description of examination carried out and findings -
  - (a) External examination (give reasons if it is not carried out six monthly)
  - (b) Internal examination (give reasons if it is not carried out annually):
  - (c) Hydraulic test (give reason if this is not carried out at intervals of 2 years or 4 years) (give reasons if this is not carried out at intervals of 2 years or 4 years)
  - (d) Ultrasonic test or other Non-Destructive Tests:
10. Condition of pressure plants-
  - (i) Vessel
  - (ii) Piping
11.
  - (a) Are the required fittings and appliances provided in accordance with the rules in force:
  - (b) Conditions of fittings and appliances:

- (i) Pressure gauges:
  - (ii) Safety Valve:
  - (iii) Step Valve:
  - (iv) Reducing valve.(give reasons if not necessary)
  - (v) Additional safety valve (required in case reducing vale is necessary)
  - (vi) Other devices(Please specify particularly in case of jacketted vessels)
  - (vi) Other devices(Please specify particularly in case of jacketted vessels)
- (c) Have the pressure settings been checked and connected:
12. Maximum permissible working pressure, calculated from dimensions and from the thickness and other data ascertained by the present examination, due allowance being made for conditions of working, if unusual or exceptionally severe (state minimum thicknes of walls measured during the examination)
13. (a) Repairs (if any) required:  
 (b) Period within which the repairs should be executed:  
 (c) Any other condition which the person making the examination thinks it necessary for securing safe working:
14. (a) Specify reduced working pressure pending repairs:  
 (b) Specify working pressure after completion of repairs:
15. Safe working pressure calculated as per methods given in sub-rule (8) of rule 68 for thin walled pressure vessel or plant:
16. Other observations

I certify that on (date)..... the pressure vessel or plant described above was thoroughly cleaned and (so far as its construction permits) made accessible for thorough examination and for such tests as were necessary for thorough examination and that on the said date, I thoroughly examined this pressure or plant, including its fittings, and that the above is a true report of my examination.

Signature and name of competent person:

Number and date of the competency certificate:

Date:

*Issued by:*

FORM No. 14

[See rule 81(8)(b)]

**Register of Examination of Gas-Holders**

Particulars of manufacture –

(a) Maker's name:

(c) Number of lifts:

(e) Pressure within the gas holder when full of gas:

(b) Date of manufacture:

(d) Maximum capacity in cubic metres:

(f) Name of the gas to be stored:

---

Distinguishing number of letter of gas holder	Particulars of examination carried out under sub-rules 81(4) and (5)		Particulars of repairs				Remarks
	Method of examination used	Date of examination	Name and Designation of the competent person	Nature of repairs	Date of repairs and painting	Bye whom repairs are carried out	
1.	2.	3.	4.	5.	6.	7.	8.

---

Signature of occupier or manager  
Name (in Block letters)

FORM No. 15

[See rule (81) (c)]

**Report of Examination of Water Sealed Gas Holder**

Registration No.:

Licence No.:

NIC code No.:

(As given in the licence)

1. Occupier of premises
2. Address:
3. Name, description, distinguished number or letter and type of gas holder:
4. Name and address of the manufacturer:
5. (a) Number of lifts  
(b) Maximum capacity in cubic metres  
(c) Pressure within the gas holder when full of gas:
6. Name of the gas to be stored in the holder:
7. Whether the examination was internal or external:
8. Parts of the gas holders examined by electronic or other accurate devices or by cutting sample discs and results thereof:
9. Particulars as to the condition of -
  - (a) crown
  - (b) side sheeting, including grips and cups
  - (c) guiding mechanism (roller carriages, rollers, pins, guide rails, or ropes)
  - (d) tank and
  - (e) other structure, if any, (columns, framings and bracing)
10. Particulars as to the position of the lift at the time of examination:
11. Particulars as to whether the tank and lifts were found sufficiently level for safe working and if not, the steps taken to remedy the defect.
12. Date of examination and by whom it was carried out.
13. (a) Are all fittings and appliances properly maintained and in good condition?

(b) Repairs, if any, required and period within which they should be executed?

(c) Any other condition which the person making the examination thinks it necessary for securing safe working.

14. Other observations:

I certify that on (date) \_\_\_\_\_ the gas holder described above was thoroughly examined and such of the tests as were necessary made on the same day and that the above is a true report of my examination.

Signature and name  
of competent person

Number and date of the  
competency certificate

(d) Date:

*Issued by:*

FORM – 15 A  
Prescribed under rule 90 – A

**Format of Application to the Site Appraisal Committee**

1. Name and address of the applicant.
2. Site ownership data.
  - 2.1 Revenue details of site such as survey No. Plot No., Allotment / registration No. etc.,
  - 2.2 Whether the site is classified as forest and if so whether approval of the Central Government under section 5 of the Indian Forest Act, 1927 has been taken.
  - 2.3 Whether the proposed site attracts the provisions of section 3(2) (v) of the Environment (Protection) Act, 1986. If so, the nature or the restriction.
  - 2.4 Local authority under whose jurisdiction the site is located.
  - 2.5 Documentary evidence of ownership
3. *Site plan:*
  - 3.1 Site plan with clear identification of boundaries and total area proposed to be occupied and showing the following details nearby the proposed site:
    - a) Historical monument, if any, in the vicinity.
    - b) Names of neighbouring manufacturing units and human habitats, educational and training institutions, petrol installations, storage of LPG and other hazardous substances in the vicinity and their distances from the proposed unit.
    - c) Water sources (rivers, streams, canals, dams, water filtration plants, etc.) in the vicinity.
    - d) Nearest hospitals, fire-stations, civil defence stations and police stations and their distances.
    - e) High tension electrical transmissions lines, pipe lines for water, oil, gas or sewerage, railway lines, roads, stations, jetties and other similar installations.
    - f) Height of tallest structure in the proposed site/ near the proposed site.
    - g) Presence or otherwise of given belts/ no industry zones in the vicinity.
  - 3.2 Details of soil conditions and depth at which hard strata obtained.
  - 3.3 Contour map of the area showing nearby hillocks and difference in levels.
  - 3.4 Plot plan of the factory showing the entry and exit points, roads within water drains etc.
4. *Project Report*
  - 4.1 A summary of the salient features of the project.
  - 4.2 Status of the organisation (Government, semi Government, Public or Private, etc.)
  - 4.3 Maximum number of persons likely to be working in the factory.
  - 4.4 Maximum amount of power and water requirements and source of their supply.
  - 4.5 Block diagram of the buildings and installations on the proposed supply.
  - 4.6 Details of housing colony, hospital, school and other infrastructural facilities proposed.
5. *Organisation structure of the proposed manufacturing unit/ factory.*
  - 5.1 Organisation diagrams of –
    - Proposed enterprise in general
    - Health, Safety and Environment Protection Departments and their linkage to operation and technical departments.

- 5.2 Proposed Health and Safety Policy.
- 5.3 Area allocated for treatment of wastes and effluent.
- 5.4 Percentage outlay on safety, health and environment protection measures.
- 5.5 Details of staff development (category wise) in various departments.
6. *Meteorological data relating to the site.*
  - 6.1 Average, minimum and maximum of -
    - Temperature
    - Humidity
    - Wind velocities
 during the previous ten years.
  - 6.2 Seasonal variations of wind directions.
  - 6.3 Highest water level reached during the floods in the area recorded so far.
  - 6.4 Lighting and seismic data of the area.
  - 6.5 Capacity of the local environment for quick disposal of toxic effluents (gaseous)
7. *Communication Links.*
  - 7.1 Availability of telephone / telex/ wireless and other communication facilities for outside communication.
  - 7.2 Reliability of their functioning bad/average / good/ very good.
  - 7.3 Internal communication facilities proposed
8. *Manufacturing process information*
  - 8.1 Process flow diagram
  - 8.2 Brief write-up on process and technology
  - 8.3 Utilities / off-site facilities and their requirements.
  - 8.4 Critical process parameters such as pressure build-up, temperature rise and run-away reactions.
  - 8.5 Other external effects critical to the process having safety implication such as ingress of moisture or water, contact with incompatible substances, sudden power failure.
  - 8.6 Highlights of the built-in safety/ pollution control devices or measures incorporated in the manufacturing technology.
9. *Information of Hazardous Materials*
  - 9.1 Raw materials, intermediates, products and by-products and their quantities (enclose Material Safety Data Sheet in respect of each hazardous substance)
  - 9.2 Main and intermediate storages proposed for raw materials/ intermediates/ products/ by-products (maximum quantities to be stored at any time.)
  - 9.3 Hazard characteristics of raw materials / intermediates/ products/ by-products- flammability – explosions – toxicity – radiation.
  - 9.4 Transportation methods to be used for materials inflow and outflow, their quantities and likely routes to be followed.
  - 9.5 Safety measures proposed for:
    - handling of materials
    - internal and external transportation; and

- disposal (packing and forwarding of finished products)
- 10. *Information on Dispersal / Disposal of wastes and Pollutants.*
  - 10.1 Major pollutants (gas, liquid, solid) their characteristics and quantities (average and at peak loads)
  - 10.2 Quality and quantity of heated effluent streams.
  - 10.3 Quality and quantity of solid wastes generated methods of their treatment and disposal.
  - 10.4 Air, water and soil pollution problems anticipated, and the proposed measures to control the same, including treatment and disposal of effluents.
- 11. *Process Hazards Information*
  - 11.1 Enclose a copy of the report on environmental impact assessment
  - 11.2 Enclose a copy of the report on Risk Assessment Study.
  - 11.3 Published (open or classified) reports, if any on accident situations/ occupational health hazards or similar plants elsewhere (within or outside the country)
  - 11.4 Compatibility of the proposed factory with neighbouring factories in terms of hazard containment.
- 12. *Information of proposed Safety and Occupational Health Measures*
  - 12.1 Details of fire fighting facilities and minimum quantity of water, CO2 and //or other fire fighting measures needed to meet the emergencies.
  - 12.2 Details of safety plans covering safety checks/ audits, training programmes, safety information etc.
  - 12.3 Details of in-house medical facilities proposed.
- 13. *Information on Emergency Preparedness.*
  - 13.1 Onsite emergency plan.
  - 13.2 Proposed arrangements, of any, for mutual aid scheme with the group of neighboring factories.
  - 13.3 Contracts made, if any , with local authorities for the off-site emergency plans.
  - 13.4 Awareness of the local/ neighboring communities to the imminent dangers of the proposed plant.
- 14. *Any other relevant information*

I certify that the information furnished above is correct to the best of my knowledge and nothing of importance has been concealed while furnishing it.

*Name and Signature of the Applicant*

- 
- 15. This application shall be accompanied by an endorsement from the competent local authority.
    - (1) Density of population in the vicinity of the proposed factory.
    - (2) Presence or otherwise of given belts./ no industry zone in the vicinity
    - (3) Suitability of the roads in the vicinity of the proposed factory for the transportation of hazardous chemicals.
    - (4) Any nearby historical monuments / drinking water sources / sensitive installations likely to be affected by the presence of the proposed factory:
    - (5) Past history of conflicts with the local population over health and safety issues, if any
    - (6) Type of communication links available with local authorities to meet the challenge of the proposed emergencies and reliabilities of the communication network.

Form No. 16

[See rule 89(4)]

**Record of eye examination for drivers and signaler of cranes, locomotives, etc.**

Serial Number:

Name of the worker:

His serial number in the register of adult worker:

Sex:

Date of Birth:

Department/works	Occupation		Examination of eye sight				Remarks	Signature of ophthalmologist
	Nature	Date of posting	Date	Result				
				L.E.	R.E.	Colour Vision		
1.	2.	3.	4.	5.	6.	7.	8.	9.

Note: (1) A separate page is to be maintained in respect of each worker.

(2) Periodicity for eye examination is once in a year upto the age of 45 years and half yearly thereafter

FORM No. 17

(See rule 111)

**Register of compensatory holidays**

Sr. No.	Serial number in the register of adult worker	Name	Group or relay number	Number and date of exempting order or rule under which it is granted	Year	Date of weekly rest days lost due to the exempting order in				Dates of Compensatory Holiday given in				Lost rest days carried to the next year	Remarks
						January to March	April to June	July to September	October to December	January to March	April to June	July to September	October to December		
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.

Note: This register shall be preserved for a period of three years after the last entry.

FORM No. 18

(See rule 113)

**Overtime muster roll for exempted workers**

Month ending 20

Sr. No.	Serial number in the register of adult workers	Name of exempted workers	Department	Normal hours of work prescribed		Date	Overtime worked		
				Daily	Weekly		Additional production for piece rate worker	Hours	Total overtime hours
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.

Cash equivalent of the advantages accruing through the concessional sale of food rains etc.	Normal rate pay		Overtime during the month		'Earnings during the month'			Date on which overtime payment made
	Per hour	Per piece	Per hour	Per piece	Normal	Overtime	Total (col.16 + col.17)	
11.	12.	13.	14.	15.	16.	17.	18.	19.

Note: (1) This register is to be maintained in respect of all workers, exempted under section 64 or 65 from the provisions of sections 51 and 54

(2) This register shall be preserved for a period of three years after the last entry

(3) In col. 9, equivalent hours for additional production of pieces reported in col. 8 as converted according to section 59 (3)

FORM no. 19

(See rule 116)

**Notice of period of work for Adult workers**

Name of factory:  
 Address:  
 First day of the week:

Registration number:  
 Licence number:  
 NIC Code number:  
 (As given in the licence)

Periods of work	Men												Women												Identification of the group*		Remarks			
	Total number of men employed												Total number of women employed												Alphabet assigned A,B,C, etc.	Nature of work				
	A			B			C			D			A			B			C			D								
Relays	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3						
On working days From..... to From to From to																												A B C		
On partial Working days From.... to From... to																												D E		

\* Date on which this notice is first exhibited: Describe the groups and explain the nature of work against Identification letter marked A, B, C,D, E..... rest interval for each shift should be indicated clearly

Signature of manager  
 Name (in block letters)

Date:

FORM No. 20

(See rule 117)

**Register of adult workers**

Sr. No.	Name	Date of birth	Sex	Residential address	Father's husband's name	Date of appointment	Group to which worker belongs		Number of relay, if working in shifts	Adolescent if certified as adult		Remarks
							Alphabet assigned	Nature of work		No. and date of certificate of fitness	Token No. under section 68	
1	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.

FORM No.21

(See rule 121)

**Notice of period of work for child workers**

Name of factory:

Address:

District

First day of the week:

Registrations No.

Licence No.

NIC Code No.

(As given in the licence)

Period Of work		Children			Identification of the Group*		Remarks
		Total number of children employed			Alphabet Assigned	Name of work	
		Groups	A	B			
		Relays	1 2	1 2	1 2		
From to					A B C		

Date on which this notice is first exhibited

Signature of Manager

Name (in block letters)

Date:

\*Describe the groups and explain the nature of work

FROM No. 22

(See rule 122)

**Register of child workers**

Sr. No.	Name	Date of birth	Sex	Residential address	Father's husband's name	Date of first employment	Number & date of certificate of fitness	Token number under section 68	Alphabet assigned to group to which worker belongs	Number of relays if working in shifts	Remarks
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.

FORM No. 23

(See rule 123)

**Register of Leave with wages**

1. Name:

2. Sex:

3. Father's/husband's name:

4. Serial number in the register of adult/child workers:

5. Department:

6. Designation:

7. Date of joining employment:

8. Date of discharge/dismissal/quitting employment/superannuation/  
death while in service:

9. Date of payment in lieu of leave with wages due in such cases:

10. Whether leave in accordance with scheme under section 79(8) was  
refused

Calendar year of service (i.e. previous year)	Leave due as on 1 <sup>st</sup> January Of the year in col.1		Leave availed during the year				Leave refused out of regular leave mentioned in column 3
	Refused	Regular	Refused	Regular	Dates		
1.	2.	3.	4.	5.	6.	7.	8.

Number of working days for computation of leave During the year mentioned in column (1)					Regular leave earned for the year mentioned in column (1)	Balance of leave admissible on 1 <sup>st</sup> January of the year following the year mentioned in column (1)	
Days worked	Lay off	Maternity leave upto 12 weeks	Leave with wages enjoyed	Total (9) to (12)		Refused (Col. 2+8-4)	Regular (Col.3+14-5-8)
9.	10.	11.	12.	13.	14.	15.	16.

Leave period (i.e. col.(4) + col (5) in days	Normal rates of wages excluding of any overtime as well as bonus but including of dearness allowance (Rs.)	Details of wages paid			Signature
		Cash equivalent of the advantages accruing through the concessional sale of food grains and other articles	Rates of wages for leave with wages paid (Rs.) {Col. (18) + Col. (19)}	Total wages paid for the period of leave with wages enjoyed (Rs.) {Col.(17) + Col.(20)}	
17.	18.	19.	20.	21.	22.

Notes: (1) Separate register should be maintained for adult/child.

(2) A child shall include an adolescent worker who has not been certified fit to work as an adult

(3) A separate page should be maintained in respect of each worker.

(4) Leave earned in column (14) is calculated on the basis of number of days worked given in column (9)

(5) As per section 79(5), figures in column (16) should not exceed 30 days in case of adult and 40 days in case of child worker.

(6) Delete which is not required.

FORM No. 24

(See rule 123)

**Leave Book**

1. Name:

2. Sex:

3. Father's/husband's name:

4. Serial number in the register of adult/child workers:

5. Department:

6. Designation:

7. Date of joining employment:

8. Date of discharge/dismissal/quitting employment/superannuation/  
death while in service:

9. Date of payment in lieu of leave with wages due in such cases:

10. Whether leave in accordance with scheme under section 79(8) was  
refused

Calendar year of service (i.e. previous year)	Leave due as on 1 <sup>st</sup> January Of the year in col.1		Leave availed during the year				Leave refused out of regular leave mentioned in column 3
	Refused	Regular	Refused	Regular	Dates		
1.	2.	3.	4.	5.	6.	7.	8.

Number of working days for computation of leave During the year mentioned in column (1)					Regular leave earned for the year mentioned in column (1)	Balance of leave admissible on 1 <sup>st</sup> January of the year following the year mentioned in column (1)	
Days worked	Lay off	Maternity leave upto 12 weeks	Leave with wages enjoyed	Total (9) to (12)		Refused (Col. 2+8-4)	Regular (Col.3+14-5-8)
9.	10.	11.	12.	13.	14.	15.	16.

Leave period (i.e. col.(4) + col (5) in days	Normal rates of wages excluding of any overtime as well as bonus but including of dearness allowance (Rs.)	Details of wages paid			Signature
		Cash equivalent of the advantages accruing through the concessional sale of food grains and other articles	Rates of wages for leave with wages paid (Rs.) {Col. (18) + Co.(19)}	Total wages paid for the period of leave with wages enjoyed (Rs.){Col.(17) + Col.(20)}	
17.	18.	19.	20.	21.	22.

Notes: The leave book shall be made out separately for giving to each worker on thick bound sheets.

FORM No. 25

(See rule 129)

**Nomination for payment of wages due for period of leave with  
wages in the event of death of worker**

I hereby nominate Shri. \_\_\_\_\_ who is my \_\_\_\_\_ and  
resides at \_\_\_\_\_ to receive the amount of the balance of my pay  
in lieu of the quantum of leave not availed of, in the event of my death before resuming work.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, at \_\_\_\_\_

Witnesses :

(1) Signature :

Name :

Address :

(2) Signature :

Signature or left thumb  
impression of the worker

Name :

Address :

Particulars of worker such as  
serial number in the register  
of adult/child workers, section  
or department, etc. :

Date :

FORM No. 26  
(See rule 131)

**Certificate of fitness for employment in hazardous processes/dangerous operations**

(To be issued by Certifying Surgeon)

1. Serial number in the register of adult workers :
2. Name of person examined :
3. Father's name :
4. Sex :
5. Residence :
6. Date of birth, if available :
7. Referred by -
  - (a) Name and address of the factory :
  - (b) Name of the manager :
8. The worker is proposed to be employed in-
  - (a) Hazardous process :
  - (b) Dangerous operation :

I certify that I have personally examined the above named person whose identification marks are \_\_\_\_\_ and who is desirous of being employed in above mentioned process/operation and that his/her age nearly as can be ascertained from my examination, is \_\_\_\_\_ years and in my opinion he/she is fit/unfit for employment in the same process/operation.

He/she is fit to be employed and may be employed in some other non-hazardous operations such as \_\_\_\_\_

He/she may be produced for further examination after a period of \_ \_\_\_\_\_

He/she is advised following further examination \_\_\_\_\_

He/she is advised following treatment \_\_\_\_\_

The serial number of the previous certificate is \_\_\_\_\_

Signature or left hand thumb  
impression of person examined  
Date:

Signature of  
Certifying Surgeon

I certify that I have examined the person mentioned above on (date of examination)	I extend this certificate until (if certificate is not extended, the period for which the worker is considered unfit for work is to be mentioned)	Signs and symptoms observed during examination	Signature of Certifying

*Note:-*To be issued by the Certifying Surgeon and a copy maintained in a bound book or in a file.

Form No. 27

(See paragraph 9(2) of Schedule II to rule 131)

**Health Register**

Sr. No.	Department of work	Name of worker	Age at last birthday	Date of employment on present work	Date of leaving or transfer (with reasons for discharge or transfer)	Nature of job or occupation	Raw material or by-products handled	Date of weekly examination with result (fit/unfit)	Nature of symptoms	Signature of registered medical practitioner
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.

FORM No. 28

[See paragraph 6(2) of schedule V to rule 131]

**Report of Examination and test of Dust extraction or suppression system**

1. Description of system
2. Hood -
  - (a) Serial number of hood
  - (b) Contaminant captured
  - (c) Capture velocities (at points to be specified)
  - (d) Volume exhausted at hood
  - (e) Hood static pressure
3. Total pressure drop at -
  - (a) Joints
  - (b) Other points of system (to be specified)
4. Transport velocity in duct (at points along ducts to be specified)
5. Air cleaning device -
  - (a) Type used
  - (b) Velocity at inlet
  - (c) Static pressure at inlet
  - (d) Velocity at outlet
  - (e) Static pressure at outlet
6. Fan -
  - (a) Type used
  - (b) Volume handled
  - (c) Static pressure
  - (d) Pressure drop at outlet of fan
7. Fan motor -
  - (a) Type
  - (b) Speed and power in kilowatts

	Design value	Actual value
--	--------------	--------------

8. Particular of defects, if any, disclosed during test in any of the above components.

I certify that on (date) \_\_\_\_\_ the above dust extraction system was thoroughly cleaned and (so far as its construction permits) made accessible for thorough examination. I further certify that on the said date, I thoroughly examined the above dust extraction system including its components and fittings and that the above is a true report of my examination.

Signature :

Qualification :

Address :

Date :

If employed by a company or association, name and address of the company or association. :

FROM No. 29  
(See rule 90-N)

**Certificate of fitness of employment in hazardous process and operations**

(To be issued by Factory Medical Officer)

1. Serial number in the register of adult workers :
2. Name of person examined:
3. Father/s/Husband's name:
4. Sex :
5. Residence :
6. Date of birth, if available :
7. Name & address of the factory :
8. The worker is employed/proposed to be employed in -
  - (a) Hazardous process :
  - (b) Dangerous operations :

I certify that I have personally examined the above named person whose identification marks are \_\_\_ \_\_\_ and who is desirous of being employed in above mentioned process/operation and that his/her age, as nearly as can be ascertained from my examination, is \_\_\_ years.

In my opinion he/she is fit for employment in the said manufacturing process/operation.

In my opinion he/she is unfit for employment in the said manufacturing process/operation for the reasons \_\_\_ \_\_\_ He/she is referred for further examination to the Certifying Surgeon.

The serial number of the previous certificate is \_\_\_ \_\_\_\_\_ \_\_\_

Signature or left hand thumb  
impression of person examined:

Signature of the  
Factory Medical Officer:

Date:

Stamp of Factory Medical Officer  
with name of the factory:

I certify that I have examined the person mentioned above on (date of examination)	I extend this certificate until (if certificate is not extended, the period for which the worker is considered unfit for work is to be mentioned)	Signs and symptoms observed during examination	Signature of the factory Medical Officer with date

*Note:-* (1) If declared unfit, reference should be made immediately to the Certifying Surgeon.  
(2) Certifying Surgeon should communicate his findings to the occupier within 30 days of the receipt of this reference.

FORM No. 30

[See rule 132 (3)]

Report of Accident including dangerous occurrence resulting in death or bodily injury

(This report is to be furnished separately for every individual worker injured or killed)

ESIC Employer's Code Number \_\_\_\_\_ Registration Number \_\_\_\_\_  
 Name and address of Local ESIC-Office: \_\_\_\_\_ Licence Number \_\_\_\_\_  
 ESIC Insurance No. of the injured: \_\_\_\_\_ NIC Code Number \_\_\_\_\_  
 (As given in the licence)

1. Name and address of factory :
2. Name, address and telephone number of the occupier :
3. Nature of Industry :
4. Date, shift and hour of accident or dangerous occurrence :
5. Department/section and exact place where the accident or dangerous occurrence took place :
6. (a) Describe briefly how the accident or dangerous occurrence took place:  
 (b) If caused by machinery -  
     (i) Give the number of machine and the part causing the accident or dangerous occurrence :  
     (ii) State whether it was moved by mechanical power at the time of accident or dangerous occurrence :  
 (c) Give the total number of persons injured/killed :

Number of persons injured		Number of persons killed	
Inside the factory	*Outside the factory	Inside the factory	*Outside the factory

7. Names and addresses of witnesses : (1) \_\_\_\_\_

(2) \_\_\_\_\_

8. Cause of accident or dangerous occurrence :

\*If in any accident/dangerous occurrence, persons outside the factory premises are injured or killed, please furnish the information to the extent available.

*Note:-* Details regarding injury and persons injured/killed should be submitted in the format given in the annexure.

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(To be completed by the Inspector of Factories)

1. Date of receipt of the report :
2. District:
3. (a) Number allotted to accident involving and/or fatality :
- (b) Number allotted to dangerous occurrence involving reportable injury and/or fatality :
4. Date of investigation :
5. Classification of accident :
- (a) Causewise (give code) :
- (b) Industrywise (give NIC code) :
- (c) Dangerous operationwise (give Schedule number under section 87) :
- (d) Hazardous processwise [(section2(cb)] :
- (e) Occupationwise (NCO code number) :
6. Result of investigation :
7. Remarks if any :

Date:

Signature of the Inspector

Name (in block letters)

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#### ANNEXURE

1. Particulars of injured/killed person -

(a) Name:

(b) Age:

- (c) Sex
- (d) Sr. No. in the register of adult worker:
- (e) Address:
- (f) Precise occupation:
- (g) Nature of job:

2. Particulars of injury -

- (a) Fatal (time and date of death):
- (b) Non-fatal (if serious, give the extent of injury such as loss of limb/sight and hearing, fracture, permanent, impairment, severe burns, etc.):
- (c) State whether the injured person was disabled for more than 48 hours :
- (d) Date and hour if returned to work:
- (e) Location of injury (i.e. part of body such as right leg, left hand, left eye, etc. injured) :

3. (a) State exactly what the injured person was doing at the time of accident or dangerous occurrence :

- (b) Does this work fall in the category of hazardous/dangerous process or operation
- (c) In your opinion, was the injured person at the time of accident or dangerous occurrence -
  - (i) acting in contravention of provisions of any law applicable to him; or
  - (ii) acting in contravention of any orders given by or on behalf of his employer; or
  - (iii) acting without instructions from his employer:

4. (a) Hour at which the injured person started work on the day of accident or dangerous occurrence

- (b) Whether wages in full or part are payable to him for the day of the accident or dangerous occurrence

5. In case the accident or dangerous occurrence took place while travelling in the employers' transport, state

whether -

- (a) the injured person was travelling as a passenger to and from his place of work;
  - (b) the injured person was travelling with the express or implied permission of his employer;
  - (c) the transport is being operated by or on behalf of the employer or some other person by whom it is provided in pursuance of arrangements made with the employer;
  - (d) the vehicle is being/not being operated in the ordinary course of public transport service.
6. In case the accident or dangerous occurrence took place while meeting emergencies state -
- (a) its nature; and
  - (b) whether the injured person at the time of accident or dangerous occurrence was employed for the purpose of his employer's trade or business in or above the premises at which the accident or dangerous occurrence took place.
7. (a) Physician, dispensary or hospital from whom or in which the injured person received or is receiving treatment.
- (b) Name of dispensary/panel doctor selected by the injured person:

I certify that to the best of my knowledge and belief the above particulars are correct in every respect.

Signature of manager/occupier

Name (in block letters)

Address and Tel. No.:

Dated:-

FORM No. 31

[See rule 132(3)]

**Report of Dangerous occurrence which does not result in bodily injury**

Registration No. :

Licence No. :

NIC Code No. :  
(As given in the licence)

1. Name and address of factory :

2. Name, address and telephone number of occupier :

3. Name of the manager :

4. Nature of industry :

5. Department/section and exact place where the  
dangerous occurrence took place :

6. Date and hour of dangerous occurrence:

7. (a) Type of dangerous occurrence (see over leaf) :

(b) Did it involve : Explosion  Fire  emission of  
toxic/flammable explosive substan-ces  
 substances emitted

8. State exactly what happened :

I certify that to the best of my knowledge and belief the above particulars are correct in every respect.

Signature of manager

Name (in block letters):

Address and Tel. No.:

Date of despatch of report:

---

(To be completed by the Inspector of Factories)

1. Date of receipt of the report :

2. District :
3. (a) Number allotted to the dangerous occurrence not involving injury and/or death :
- (b) Number allotted to “Major Accident” not involving reportable injuries and/or death. :
4. Date of investigation :
5. Cause :
6. NIC-Code (as given in the licence) :
7. Result of investigation :

Date:

Signature of the Inspector

Name (in block letters)

#### SCHEDULE

The following classes of dangerous occurrences, whether or not they are attended by personal injury or disablement:-

- (1) Bursting of a plant used for containing or supplying steam under pressure greater than atmospheric pressure.
- (2) Collapse or failure of a crane, derrick, winch, hoist or other appliances used in raising or lowering persons or goods, or part thereof, or the overturning of a crane.
- (3) Explosions, fire, bursting out, leakage or escape of any molten metal or hot liquor or gas causing body injury to any person or damage to any room or place in which persons are employed, or fire in rooms of cotton pressing factories when a cotton opener is in use.
- (4) Explosion of a receiver or container used for the storage at a pressure greater than atmospheric pressure of any gas or gases (including air) or any liquid or solid resulting from the compression of gas.
- (5) Collapse or subsidence of any floor, gallery, roof, bridge, tunnel, chimney, wall, building or any other structure.

FORM No. 32  
(See rule 133)

**Notice of poisoning or Diseases**

(See instruction)\*

ESI Employers' Code No. \_\_\_\_\_ (i) Registration No. \_\_\_\_\_  
ESIC Insurance No. \_\_\_\_\_ (ii) Licence No. \_\_\_\_\_  
Name and address of the injured person \_\_\_\_\_ (iii) NIC Code No. \_\_\_\_\_  
(As given in the licence)  
Local ESIC Office \_\_\_\_\_

1. Name and address of factory :
2. Name, address and telephone number of the occupier :
3. Nature of industry :
4. Particulars of affected worker -
  - (a) Name :
  - (b) Age :
  - (c) Sex :
  - (d) Sr. No. as per register of adult/child worker :
  - (e) Address: :
  - (f) Precise occupation : :
  - (g) Nature of job : :
5. Nature of poisoning/disease (give Sr. No. and names as per the list overleaf) :
6. (a) Harmful agent or process to which poisoning or disease is attributed :  
(b) Approximate date of beginning and cessation of exposure of the worker to the harmful agent or process :  
:
7. Has the case been reported to the Certifying Surgeon/ Administrative Medical Officer, EISC/Medical Inspector of Factories. Yes/No :

Signature of Manager:  
Name (in capital letters)  
Telephone No.

*Note:* This notice should be sent forthwith to the  
(i) Chief Inspector of Factories  
(ii) Medical Inspector of Factories  
(iii) Certifying Surgeon  
(iv) Administrative Medical Officer, ESIC

(To be filled in by the Factory Inspectorate)

Number of the case :  
Remarks :

Date:-

Signature  
Name (in block letters)  
Designation

**\*Notice of poisoning or disease**  
EXTRACT FROM THE FACTORIES ACT, 1948  
(SECTION 89)

Where any worker in a factory contracts any disease specified in the schedule, the manager of the factory shall send a notice thereof to such authorities, and in such form and within such time, as may be prescribed.

SCHEDULE

List of Notifiable Diseases

1. Lead poisoning, including poisoning by any preparation of lead or their sequelae.
2. Lead tetra-ethyl poisoning.
3. Phosphorous poisoning or its sequelae.
4. Mercury poisoning or its sequelae.
5. Manganese poisoning or its sequelae.
6. Arsenic poisoning or its sequelae.
7. Poisoning by nitrous fumes.
8. Carbon disulphide poisoning.
9. Benzene poisoning, including poisoning by any of its homologues, their nitro or amide derivation of sequelae.
10. Chrome ulceration or its sequelae.
11. Anthrax
12. Silicosis
13. Poisoning by halogens or halogen derivatives of the hydrocarbons of the aliphatic series.
14. Pathological manifestation due to -
  - (a) radium or other radio-active substances; and
  - (b) X-rays
15. Primary epithelionatous cancer of skin
16. Toxic anaemia
17. Toxic jaundice due to poisonous substances
18. Oil acne or dermatitis due to mineral oils and compounds containing mineral oil base.
19. Byssinosis
20. Asbestosis
21. Occupational or contact dermatitis caused by direct contract with chemicals and paints.  
These are of two types that is, primary irritants and allergic sensitizers.
22. Noise induced hearing loss (exposure to high noise levels)
23. Beryllium poisoning
24. Carbon monoxide
25. Coal miners pneumoconiosis
26. Phosgene poisoning
27. Occupational cancer
28. Isocyanates poisoning
29. Toxic nephritis

FORM No. 33

(See rule 135)

**ABSTRACT OF THE FACTORIES ACT, 1948 AND THE GOA FACTORIES  
RULES, 1985**

(To be displayed in a conspicuous and convenient place at or near the main entrance to the factory.)

1. “*Factory*” means any premises including the precincts thereof-
  - (i) whereon ten or more workers are working, on any day of the preceding twelve months, and in any part of which manufacturing process is being carried on with the aid of power, or is ordinarily so carried on, or
  - (ii) whereon twenty or more workers are working or were working on any day of the preceding twelve months and in any part of which a manufacturing process is being carried on without the aid of power, or is ordinarily so carried on.

But does not include a mine subject to the operation of the Mines Act 1952 (Central Act 35 of 1952) or a mobile unit belonging to the armed forces of the Union, a railway running shed or hotel, restaurant or eating place.

*Explanation:-* For computing the number of workers for the purpose of this clause all the workers in different groups and relays in a day shall be taken into account.

2. “*Worker*” means a person employed directly or through any agency (including a contractor) with or without the knowledge of the principal employer, whether for remuneration or not in any manufacturing process, or in cleaning any part of the machinery or premises, used for manufacturing process, or in any other kind of work incidental to, or connected with, the manufacturing process, or the subject of the manufacturing process; but does not include any member of the armed forces of the Union.

3. “*Manufacturing process*” means process of –
  - (i) making, altering, repairing, cleaning, ornamenting, finishing, pacing, oiling, washing, breaking up, demolishing or otherwise treating or adapting any article or substance with a view to its use, sake, transport, delivery or disposal; or
  - (ii) pumping oil, water, sewage, or any other substance ; or
  - (iii) generating, transforming or transmitting power; or
  - (iv) composing types or printing, printing by letters press, lithography, photogravure or other similar process or book-binding; or
  - (v) constructing, reconstructing, repairing, refitting finishing or breaking up ships or vessels; and
  - (vi) preserving or storing any article in cold storage.

4. *General duties of the Occupier (section 7-A)* (1) Every occupier shall ensure, so far as is reasonably practicable, the health, safety, and welfare of all workers while they are at work in the factory.

(2) Without prejudice to the generality of the provisions of sub-section (1), the matter to which such duty extends, include :-

- (a) the provisional and maintenance of plant and systems of work in the factory that are safe and without risks to health;
- (b) the arrangements in the factory for ensuring safety and absence or risks to health in connection with the use, handling, storage and transport of articles and substances;
- (c) the provision of such information, instruction, training and supervision as are necessary to ensure the health safety of all workers at work;
- (d) the maintenance of all places of work in the factory in a condition that is safe and without risks to health and the provision and maintenance of such means of access to, and egress from, such places as are safe and without such risks;
- (e) the provision, maintenance or morning of such working environment in the factory for the workers that is safe without risks to health and adequate as regards facilities and arrangements for their welfare at work.

(3) Except in such cases as may be prescribed, every occupier shall prepare, and as often as may be appropriate, revise, a written statement of his general policy with respect to the health and safety of the workers at work and the organisation and the arrangements for the time being in force for carrying out policy, and to bring the statement and any revision thereof to the notice of all the workers in such manner as may be prescribed.

#### **Working Hours, holidays, interval after rest, etc.**

5. *Hours of work for adults (Section 51 and 54).*- No adult worker shall be required or allowed to work in a factory for more than 48 hours in any week and for more than 9 hours in any day.

6. *Relaxation of hours of work for adults (section 64)* - The ordinary limits on working hours of adult may be relaxed in certain special cases, e.g. workers engaged on urgent repairs, in work in the nature of preparatory or complementary work which must necessarily be carried on outside the limits laid down for the general working of the factory: in the work which is necessarily so intermittent that the intervals during which they do not work while no duty ordinarily amount to more than the intervals for rest: in any work which for technical reasons must be carried on continuously; in making or supplying articles of prime necessity which must be made or supplied every day; in a manufacturing process which cannot be carried on except during seasons, or at times dependent on the irregular action of natural forces; in engine rooms or boiler houses or in attending to power plant or transmission machinery; in the printing of newspapers, who are held up on account of the breakdown of machinery; in the loading or unloading of railway wagons or lorries or trucks; and in any work which is notified by the State Government in the Official Gazette as a work of National importance.

Except in the case of urgent repairs, the relaxation shall not exceed the following limits of work inclusive of overtime-

- (i) the total number of hours of work in any day shall not exceed ten;
- (ii) the spreadover inclusive of intervals for rest, shall not exceed 12 hours in any one day;
- (iii) the total number of hours of work in a week, including overtime, shall not exceed sixty;
- (iv) the total number of hours of overtime work shall not exceed fifty for any one quarter.

7. *Payment for overtime (section 59).*-Where a worker work in a factory for more than 9 hours in any day or for more than 48 hours in any week, he shall, in respect of overtime work, be entitled to wages at the rate of twice his ordinary rate of wages.

8. *Exemption of supervisory staff (section 64).*- Chapter VI, of the Act other than the provisions of clause (b) of sub-section (1) of section 66 and of the proviso to that sub-section, of the Act, working hours for adults – does not apply to persons holding position of supervision or management or who are employed in the confidential position in a factory, provided that where the ordinary rate of wages of such person does not exceed rupees sixteen hundred per month, they are entitled to extra wages in respect of overtime worker under section 59.

9. *Weekly holidays (adults)(section 52.)* – No adult worker shall be required or allowed to work in factory on the first day of the week, unless.-

- a) he has, or will have a holiday for a whole day on one of the three days immediately before or after the said day; and
- b) the manager of the factory, has before the said day or the substituted day under clause (a) whichever is earlier.
  - (i) delivered a notice at the office of the Inspector of his mentioned to require the worker to work on the said day and of the day which is to be substituted and
  - (ii) displayed a notice to that effect in the factory.

Provided that no substitution shall be made which will result in any worker working for more than ten days consecutively without a holiday for a whole day.

10. *Compensatory holidays (section 53).*- Where a worker in a factory as a result of exemption from the ordinary provisions relating to weekly holidays, if deprived of any of the weekly holidays, he shall be allowed , within the month in which the holidays were due to him or within the two months immediately following that month, compensatory holidays of equal number of the holidays so lost.

11. *Intervals for rest for adults (section 55 and 56).*- The periods of work of adult workers in a factory each day shall be so fixed that no period shall exceed 5 hours and that no worker shall work for more than 5 hours before he has an interval for rest of at least half an hour and the inclusive of his intervals for rest they shall not spread over more than ten and a half hours in any day or, with the permission of the Chief Inspector in writing. 12 hours.

12. *Prohibition of double employment (section 60, 71 and 99).*- No child or, except in certain circumstances an adult worker, shall be required or allowed to work in any factory on nay day on which he has already been working in any other factory.

If a child works in a factory on any day on which he has already been working in another factory, the parent or guardian of the child or the person having custody of or control over him or obtaining any direct benefit from his wages, shall be punishable with fine which may extend to Rs. 1000/- unless it appears to the court that the child so worked without the consent or connivance of such parent, guardian or person.

13. *Prohibition of employment of children under 14 (section 67.)* – No child who has not completed his fourteenth year shall be required or allowed to work in any factory.

14. *Hours of work for children (section 7).*- No child shall be employed or permitted to work in any factory for more than four and a half hours on any day and during the period of at least twelve consecutive hours which shall include the interval between 10 p.m. and 6 p.m. The periods of work of all children employed in a factory shall be limited to two shifts which shall not overlap or spread over for more than 5 hours each and each child shall be employed in only one of the relays.

The provisions relating to weekly holidays shall also apply to child workers and no exemption from these provisions may be granted in respect of any child.

15. *Prohibition of employment of women (section 66).*- No women shall be required or allowed to work in any factory except between the hours of 7 a.m. and 7 P.m. The State Government may vary these limits or exempt this restriction in case of women working on fish-curing or fish-canning factories.

### **Leave With Wages**

16. *Leave with wages (section 79, 80, 83 and rules).*- Every worker who has worked for a period of 240 days or more in a factory during a calendar year shall be allowed during the subsequent calendar year leave with wages for a number of days calculated at the rate of –

- (i) If an adult, one day for every twenty days of work performed by him during the previous calendar year; and
- (ii) If a child, one day for every 15 days of work performed by him during the previous calendar year.

*Explanation :-* For the purpose of this sub-section

- (a) any days of lay off, by agreement or contract or a permissible under the standing order.
- (b) In the case of female workers, maternity leave for any number of days not exceeding twelve weeks; and
- (c) The leave carried in the year prior to that in which the leave is enjoyed.

Shall be deemed to be days on which the worker has worked in a factory for the purpose of computation of the period of 240 days or more, but he shall not leave of these days.

*Explanation 2: -* The leave admissible under this sub-section shall be exclusive of all holidays whether occurring during or at either end of the period of leave.

For the leave allowed to him, a worker shall be paid at a rate equal to the daily average of his total full-time earnings, for the days on which he actually worked during the month immediately preceding the leave exclusive of any overtime and bonus, but exclusive of dearness allowance and the cash equivalent of the advantage occurring through the concessional sale to the worker of food grains and other articles.

A worker whose service commences on a day other than the first day of January shall be entitled to leave with wages at the rate indicated above, if he has worked for two-thirds of the total number of days in the remainder of the calendar year.

If a worker is discharged or dismissed from the service or quits his employment or is superannuated or dies while in service during the course of the calendar year, he or his or her or nominee as the case may be, shall be entitled to wage in lieu of the quantum of the leave to

which he was entitled immediately before his discharge, dismissal, quitting of employment, superannuation or death, calculated at the rates specified above, even if he had not worked for the entire period specified above. Such payment shall be made:-

- (i) whether the worker is discharged or dismissed or quit employment, before the expiry of the second working days from the days of such discharge, dismissed or quitting and
- (ii) where the worker is superannuated or dies while in service, before the expiry of two months from the date such superannuation or death.

If the employment of a worker who is entitled to leave with wages is terminated by the occupier before he has taken the entire leave to which he is entitled, or if having applied for and having not been granted such leave, the worker quits his employment before he has taken the leave, the occupier of the factory shall pay him the amount payable in respect of the leave not taken and such payments shall be made before the expiry of the second working day after the day on which his employment is terminated and a worker, who quits his employment on or before the next pay day.

The manager shall maintain a register of leave with wages in Form No. 23 and shall provide each worker with a book called the "Leave Book" in Form No. 24. The leave book shall be the property of the worker and manager all his agent shall not demand it except to make an entries of days, holidays interruptions in service, and shall not keep it for more than a week at a time, if a worker losses his leave book, the manager shall provide with another copy on payment of paise 25 and shall complete it from his record.

### **Health**

17. *Cleanliness (section 11).*- Except in case specially exempted, all inside walls and partitions, all ceilings or tops of rooms and all walls, sides and tops of passages and staircases in a factory shall be kept white washes or colour washed. The washing or colourwashing shall be carried out at least once in every period of fourteen months. The floor of every workroom shall cleaned at least once in every week by washing, using disinfectant where necessary, or by some other effective method.

18. *Disposal of wastes and effluents (section 12).*- Effective arrangements shall be made in every factory for the treatment of wastes and effluents due to the manufacturing process carried on therein, so as to render them innocuous, and for their disposal.

19. *Ventilation and temperature (section 13).*- Effective and suitable provision shall be made in every factory for securing and maintaining in every workroom adequate ventilation by the circulation of fresh air and such a temperature as will secure to the workers therein reasonable conditions of comfort and prevent injury to health.

20. *Overcrowding (section 16).*- Unless exemption has been granted there shall be in every workroom of a factory in existence on the date of commencement of this Act, at least 9.9 cubic meters and of a factory built after the commencement of this Act at least 14.2 cubic meters of space for every worker employed therein, and for this purpose no account shall be taken of ant space which is more than 4.25 meters above the level of the floor of the room.

21. *Lighting (section 17).*- In every part of a factory where workers are working or passing, there shall be provided and maintained sufficient and suitable lighting, natural or artificial, or both.

22. *Drinking water (section 18 and rules).*- In every factory effective arrangements shall be made to provide and maintain at suitable points conveniently situated for all workers employed therein, a sufficient supply of wholesome drinking water.

In every factory wherein more than 250 workers are ordinarily employed the drinking water shall, during hot weather, be cooled by ice or other effective methods. The cooled drinking water shall be supplied in every canteen, lunchroom and restroom and also at conveniently accessible points throughout the factory.

23. *Latrines and urinals (section 19 and rules).*- In every factory sufficient latrines and urinals of the specified types (separate enclosed latrines and urinals for male and female workers) shall be provided and conveniently situated so as to be accessible to workers at all times while they are at the factory. Every latrine shall be under cover and so partitioned off as to secure privacy and shall have a proper door and fastening. Sweepers shall be employed whose primary duty will be to keep clean latrines, urinals and washing places.

24. *Spittoons (section 20).*- In every factory there shall be provided a sufficient number of spittoons of the specified type in convenient places and they shall be maintained in a clean and hygienic condition. No person shall spit within the premises of a factory except in the spittoons provided for the purpose. Whoever spits in contravention of this provision shall be punishable with fine not exceeding five rupees.

### **Safety**

25. *Fencing of machinery (section 21).*- In every factory dangerous parts of machinery e.g. every moving part of a prime mover and every flywheel connected to a prime mover, etc. shall be securely fenced by substantial construction which shall be constantly maintained and kept in position while the parts of machinery they are fencing are in motion or in use.

26. *Work on or near machinery in motion (section 22).*- No woman or young person shall be allowed in any factory to clean, lubricate or adjust any part of a prime mover or any transmission machinery is in motion or to clean, lubricate or adjust any part of any machine if the cleaning, lubrication or adjustment thereof would expose the woman or young person to risk of injury from any moving part either of that machine or of any adjacent machinery.

27. *Employment of young persons on dangerous machines (section 23).*- No young person shall be required or allowed to work at any machine declared to be dangerous unless he has been fully instructed as to the dangers arising in connection with the machine and the precautions to be observed and has received sufficient training in work at the machine or is under adequate supervision by a person who has a thorough knowledge and experience of the machine.

28. *Casing of new machinery (section 26).*- In all machinery driven by power and installed in any factory after the commencement of this Act, every set screw, bolt or key on any revolving shaft, sprindle, wheel or pinion shall be so sunk, encased or otherwise effectively guarded as to prevent danger, all spur, worm and other toothed or friction gearing which does not require frequent adjustment while in motion shall be completely encased, unless it is so situated as to be as safe as it would be if it were completely encased.

Whoever sells or lets on hire or, as agent of a seller or hirer, causes or procures to be sold or let on hire, for use in a factory any machinery driven by power which does not comply with these provisions shall be punishable with imprisonment for a term which may extend to three months

or with fine which may extend to five hundred rupees or with both.

29. *Prohibition of employment of women and children near cotton openers (section 27).*- No women or young person shall, unaided by another person, lift, carry, or move by hand or on head, any material, article, tool or appliances exceeding the maximum limit in weight set out in the following schedule :-

30. *Excessive weights (section 34 and rules).* - No women or young person shall, unaided by another person, lift, carry, or move by hand or on head, any material, article, tool or appliance exceeding the maximum limit in weight set out in the following schedule:-

#### SCHEDULE

Person	Maximum weight of material article tools or appliance	
a) Adult male	55	kilograms
b) Adult female	30	”
c) Adolescent male	30	”
d) Adolescent female	20	”
e) Male child	16	”
f) Female child	14	”

31. *Protection of eyes (section 35 and rules ).*- Effective screens or suitable goggles shall be provided for the protection of eyes of persons employed in or in immediate vicinity of processes which involve risk of injury to eyes from particles or fragment thrown off in the course of the processes or which involve risk of injury to eyes by reason of exposure to excessive light or infra-red or ultra-violet radiations.

32. *Precautions in case of fire (section 38 and rules).*- Every factory shall be provided with adequate means of escape in case of fire for the persons employed therein. The doors affording exit from any room shall, unless they are of the sliding type, be constructed to open outwards. Every window, door or other exit affording a means of escape in case of fire, other than the means of exit in ordinary use, shall be distinctively marked. Effective and clearly audible means of giving warning in case of every person employed in the factory shall be provided. Effective measure shall be taken to ensure that wherein more than twenty workers are ordinarily employed in any place above the ground floor, or wherein explosive or highly inflammable materials are used or stored, all the workers are familiar with the means of escape in case of fire and have been adequately trained in the routine to be followed in such case.

#### **Provision relating to hazardous processes**

33. *Compulsory disclosure of information by the occupier (section 41-B)* - The occupier of every factory involving hazardous process shall disclose in the manner prescribed all information regarding dangers, including health hazards and the measures to overcome such hazard arising from the exposure to or handling of the materials or substances in the manufacture of transportation, storage and other process, to be workers employed in the factory, the Chief Inspector, the local authority within whose jurisdiction the factory is situated and the general public in the vicinity.

The occupier shall, at the time of registering the factory involving a hazardous process lay down a detailed policy with respect to the health and safety of the workers employed therein and intimate such policy to the Chief Inspector and the local authority and thereafter, at such intervals as may be prescribed inform the Chief Inspector, and shall the local authority of any change made in the said policy.

The information furnished under sub-section (1) shall include accurate information as to the quantity, specifications and other characteristics of wastes and the manner of their disposal.

Every occupier shall, with the approval of the Chief Inspector, draw up an on-side emergency plan and details disaster control measure for his factory and make known to the workers employed therein and to the general public living in the vicinity of the factory the safety measures required to be taken in the event of an accident taking place.

Every occupier of a factory shall :-

- (a) if such factory engaged in hazardous process on the commencement of the Factories (Amendment) Act, 1987, within a period of thirty days of such commencement; and
- (b) if such factory proposes to engage in a hazardous process at any time after such commencement, within a period of thirty days before the commencement of such process.

Inform the Chief Inspector of the nature and details of the process in such form and in such manner as may be specified.

Where any occupier of a factory contravenes the provisions of sub-section (5), the licence issued under section 6 to such factory shall, notwithstanding any penalty to which the occupier or factory shall be subjected to under the provisions of this Act, be liable for cancellation.

The occupier of a factory involving a hazardous process shall with the previous approval of the Chief Inspector, lay down measures for the handling, usage, transportation and storage of hazardous substances inside the factory premises and the disposal of such substances outside the factory premises and publicise them in the manner prescribed among the workers and the general public in the vicinity.

#### **Section 41 – C:**

34. *Specific responsibility of the occupier in relation to hazardous processes* :- Every occupier of a factory involving any hazardous processes shall –

- a) maintain accurate and up-to-date health records or, the case may be, medical records, of the workers in the factory who are exposed to any chemical, toxic or any other harmful substances which are manufactured, stored, handled or transported and such records shall be accessible to the workers subject to such conditions as may be specified;
- b) appoint persons who possess qualifications and experience in handling hazardous substances and competent to supervise such handling within the factory and to provide at the working place all the necessary facilities for protecting the workers in the manner prescribed:

Provided that where any question arises as to the qualifications and experience of a person so appointed the decision of the Chief Inspector shall be final;

- c) Provide for medical examination of every worker:

- i) before such worker is assigned a job involving the handling of, or working with a hazardous substance; and
- ii) while continuing in such job, and after he has ceased to work in such job, at intervals not exceeding twelve months, in such manner as may specified.

35. *Permissible limits of exposure of chemical and toxic substance (section 41-F)* – The maximum permissible threshold limits of exposures of chemical and toxic substances in manufacturing processes (where hazardous or otherwise) in any factory shall be of the value indicated in Second Schedule to the Act.

36. *Workers' participation in safety management (section-41 G)*.- The occupier shall, in every factory where a hazardous process takes place, or where hazardous substances are used or handled, set up a Safety Committee consisting of equal number representatives of workers and management to promote co-operation between the workers and management in maintaining proper safety and health at work and to review periodically the measures taken in that behalf.

Provided that the State Government may, by order in writing and for reasons to be recorded, exempt the occupier of any factory or class of factories from setting up some committee.

The composition of the Safety Committee, the tenure of office of its members and their rights and duties shall be such as may be specified.

37. *Right of workers to warn about imminent danger (section 41-H)*.- Where the workers employed in any factory engaged in a hazardous process have reasonable apprehension that there is a likelihood of imminent danger to their lives or health due to any accident, they may bring the same to the notice of the occupier, agent, manager or any other person who is in charge of the factory or the process concerned directly or through their representatives in the Safety Committee and simultaneously bring the same to the notice of the Inspector.

It shall be the duty of such occupier, agent, manager or the person in charge of the factory or process to take immediate remedial action if he is satisfied about the existence of such imminent danger and send a report forthwith of the action taken to the nearest Inspector.

If the occupier, agent, manager or the person in charge referred to in sub-section(2) is not satisfied about the existence of any imminent danger as apprehended by the workers, he shall, nevertheless, refer the matter forthwith to the nearest Inspector whose decision on the question of the existence of such imminent danger shall be final.

### **Welfare**

38. *Washing facilities (section 42 and rules)*.- In every factory adequate and suitable facilities for washing shall be provided and maintained for the use of the workers therein. Such facilities shall include soap and nail brushed or other, suitable means of cleaning and the facilities shall be conveniently accessible and shall be kept in a clean and orderly condition.

If female workers are employed separate washing facilities shall be provided and so enclosed or screened that the interior are not visible from any place where persons of the other sex work or pass.

39. *Facilities for storing and drying clothing (section 43 and rules)*.- In the case of certain dangerous operations e.g. lead processes, liming and tanning of raw hides and skins, etc. suitable places for keeping clothing not worn during working hours and the drying of wet clothing shall be provided and maintained.

40. *Facilities for sitting (section 44).*- In every factory suitable arrangements for sitting shall be provided and maintained for all workers obliged to work in a standing position order that they may take advantage of any opportunities for rest, which may occur in the course of their work.

41. *First-aid and ambulance room (section 45).*- In every factory there will be provided and maintained so as to be readily accessible during all working hours first-aid boxed or cupboards equipped with the prescribed contents. Each first-aid box or cupboard shall be kept in the charge of a separate responsible person who holds a certificate in first-aid treatment recognised by the State Government who shall always be available during the working hours of the factory.

In every factory wherein more than 500 workers are ordinarily employed there shall be provided and maintained an ambulance room of the prescribed size, containing the specified equipment, and in the charge of such medical and nursing staff as may be specified and those facilities shall always be made readily available during the working hours of the factory.

42. *Canteen (section 46 and rules).*- In specified factories wherein more than 250 workers are ordinarily employed, a canteen or canteens shall be provided and maintained by the occupier for the use of the workers. Food, drinks and other items served in the canteen shall be sold on a non-profit basis and the prices charged shall be subject to the approval of a canteen Managing Committee which shall be appointed by the manager and shall consist of an equal number of persons nominated by the occupier and elected by the workers. The number of elected workers shall be in the proportion of 1 for every 1,000 workers employed in the factory provided that in no case shall there be more than 5 or less than 2 workers on the committee. The committee shall be consulted from time to time as to the quality and quantity of food stuffs to be served in the canteen, the arrangement of the menus, etc. Where the canteen is managed by co-operative society, it is not necessary to appoint a canteen Managing Committee and the prices to be charged may include a margin of profit upto a maximum of 5 per cent of its working capital.

43. *Shelter, restrooms and lunchroom (Section 47).*- In every factory wherein more than 150 workers are ordinarily employed, adequate and a suitable lunchroom, with provision for drinking water, where workers can eat meals brought by them, shall be provided and maintained for the use of the workers.

44. *Creches (section 48 and rules).*- In every factory wherein more than 30 women workers are ordinarily employed there shall be provided and maintained a suitable room or rooms for the use of children under the age of such women. The creche shall be adequately furnished and equipped and in necessary bedding for each child, at least one chair or equivalent seating accommodation for the use of each mother while she is feeding or attending to her child and a sufficient supply of suitable toys for older children.

There shall be in or adjoining the creche a suitable washroom for the washing of the children and their clothing. An adequate supply of clean clothes, soap and clean towels shall be made available for each child while it is in the creche. At least a quarter litre of pure milk shall be available for each child on every day it is accommodated in the creche and the mother of such a child shall be allowed in the course of her daily work suitable intervals to feed the child. For children above two years of age, there shall be provided, in addition, an adequate supply of wholesome refreshment. A suitably fenced and shady open air playground shall also be provided for the older children.

45. *Welfare Officer (section 49).*- In every factory wherein 500 or more workers are ordinarily

employed the occupier shall employ in the factory such number of Welfare Officers as may be specified by the Government from time to time.

### Special Provisions

46. *Dangerous operations (section 87 and rules).*- Employment of women adolescents and children is prohibited or restricted in certain operations declared to be dangerous, e.g. electroplating, manufacturing and repair of electric accumulators, glass manufacture, grinding or glazing of metals, manufacture and treatment of lead and certain compounds of lead, sandblasting etc.

47. *Notice of accidents (section 88 and rules).*- When an accident occurs which results in the death of any person or which results in such bodily injury to any person as is likely to cause his death, or any dangerous occurrence specified in the Schedule annexed hereto, takes place in a factory, the manager of the factory shall forthwith send a notice thereof by telephone, special messenger or telegram to the Inspector and the Chief Inspector. When any accident or any dangerous occurrence specified in the Schedule annexed hereto, which results in such bodily injury to any person as is likely to cause his death, takes place in a factory, a notice thereof shall be sent also to the District Magistrate or Sub-divisional Officer or the Office-in-charge of the nearest police station and to the relatives of the injured or deceased person.

### SCHEDULE

1. Bursting of a plant used for containing or supplying steam under pressure greater than atmospheric pressure.
2. Collapse or failure of a crane, derrick, winch. Hoist or other appliances used in raising or lowering persons or goods, or any part thereof, or the overturning of a crane.
3. Explosion, fire bursting out, leakage or escape or any molten metal, or hot liquid or gas causing bodily injury to any person or damage to any room or place in which persons are employed, or fire in rooms of cotton pressing factories when a cotton opener is in use.
4. Explosion of a receiver or container used for the storage at a pressure greater than atmospheric pressure of any gas or gases (including air) or solid resulting from the compression of gas.
5. Collapse or subsidence of any floor, gallery, roof, bridge, tunnel, chimney, wall, building or any other structure.

48. *Notice of certain disease (section 89 and rules).*- Where any worker in a factory contracts any of the following disease, the manager of the factory shall send forthwith notice in Form No. 32 thereof both to the Chief Inspector and Certifying Surgeon:

Lead, phosphorous, mercury, manganese, arsenic, carbon bisulphide or benzene poisoning; or poisoning by nitrous fumes or by halogens or halogen derivatives of the hydrocarbons of the aliphatic series; or of chrome ulceration, anthrax, silicosis, toxic anaemia, toxic jaundic, primary epitheliomatous cancer of the skin, or pathological manifestations due to radium or other radio active substances or X-rays.

49. *No charge for facilities and convenience (section 114)* - No fee or charge shall be realised from any worker in respect of any arrangements or facilities to be provided, or any

equipments or facilities to be provided, or any equipments or appliances to be supplied by the occupier under the provisions of this Act.

50. *Power of Inspectors (section 9 and 82).*- Inspector have powers to inspect factories any time and may require the production of registers, certificates, etc., prescribed under the Act and the rules.

Any inspector may institute proceedings on behalf of any workers to recover any sum required to be paid by an employer under the provisions relating to leave with wages, which the employer has not paid.

51. *Obligations of workers (section 97 and 111).*- No worker in the factory-

- (i) shall willfully interfere with or misuse any appliance, convenience or other thing provided in a factory for the purpose of securing the health, safety or welfare of the workers therein;
- (ii) shall willfully and without any reasonable cause do anything likely to endanger himself or others; and
- (iii) shall willfully neglect to make use of any appliance or other thing provided in the factory for the purpose of securing the health or safety of the workers therein.

If any worker employed in a factory contravenes any of these provisions he shall be punishable with imprisonment for term which may extend to three months or with fine which may extend to Rs. 100/- or with both.

If any worker employed in a factory contravenes any provision of the Act or any rules or orders made thereunder, imposing any duty or liability on workers, he shall be punishable with fine which may extend to Rs. 500/-

52. *Right of workers, etc.(section 111-A)*- every worker shall have the right to –

- (i) obtain from the occupier, information relating to workers health and safety at work;
- (ii) get trained within the factory wherever possible, or to get himself sponsored by the occupier for getting trained at a training centre or institute, duly approved by the Chief Inspector, where training is imparted for workers' health and safety at work;
- (iii) represent to the Inspector directly or through his representative in the matter of inadequate provision for protection of his health or safety in the factory.

53. *Certificates of fitness (section 69, 70 and 98)* – No child that is a person who has not completed his fourteen year or an adolescent shall be required or allowed to work in any factory unless a certificate of fitness granted with reference to him is in the custody of the manager of the factory and such child or adolescent carries, while he is at work, a token giving a reference to such certificate. Any fee payable for such a certificate shall be paid by the occupier and shall not be recoverable from the young person, his parents or guardian.

An adolescent who has been granted a certificate of fitness to work in a factory as an adult and who while at work in a factory carries a token giving reference to the certificate shall be deemed to be an adult for all the purposes of the provisions of the Act relating to the working hours of adults and the employment of young persons. An adolescent who has not been granted a certificate of fitness to work in a factory as an adult shall, notwithstanding his age, be deemed to be a child for all the purpose of the Act.

Whoever knowingly uses or attempts to use, as a certificate of fitness granted to himself, a certificate granted to another adolescent to work in a factory as an adult or who having produced such a certification knowingly allows it to be used, or an attempt to use to be made, by another person shall be punishable with imprisonment for a term which may extend to two months or with fine which may extend to Rs. 1000/- or with both.

*54. Registers, notices and returns (section 61,62,63,72,73,74 and 110 and rules).-* A register of adult workers in the Form No. 20 and a register of child workers in the Form No. 22 shall be maintained by the manager of every factory.

A notice of periods of works for adults and notice of period of work for children in the Form Nos. 19 and 21 shall be correctly maintained and displayed in every factory. No adult worker or child shall be required or allowed to work in any factory otherwise than in accordance with their respective notices of periods of work displayed in the factory.

The owners, occupiers or manager of factories shall submit the prescribed periodical returns to the Inspector regularly.



- 8 (a) Number of days the factory worked in the year (see explanatory note 'B') :
- (b) Number of weeks the factory worked in the year :

**Number of workers and particulars of employment**

9. Number of mandays worked (i.e. aggregate number of attendance) during year (see explanatory note 'C')

- |                 |             |   |
|-----------------|-------------|---|
| (a) Adults      | (i) Male    | : |
|                 | (ii) Female | : |
| (b) Adolescents | (i) Male    | : |
|                 | (ii) Female | : |
| (c) Children    | (i) Male    | : |
|                 | (ii) Female | : |

10. Average number of workers employed daily i.e. Mandays worked divided by number of days worked (See Explanatory note 'D')

- |                 |             |   |
|-----------------|-------------|---|
| (a) Adult       | (i) Male    | : |
|                 | (ii) Female | : |
| (b) Adolescents | (i) Male    | : |
|                 | (ii) Female | : |
| (c) Children    | (i) Male    | : |
|                 | (ii) Female | : |
| Total           |             | : |

11. Total number of man-hours worked including overtime at excluding rest intervals (see Explanatory note 'E')

- |                  |             |   |
|------------------|-------------|---|
| (a) Adults       | (i) Male    | : |
|                  | (ii) Female | : |
| (b) Young person | (i) Male    | : |
|                  | (ii) Female | : |

12. Average number of hours worked per week

$$\frac{\text{i.e Total manhours worked}}{\text{(Average daily employment) X (Number of weeks of the factory worked)}}$$

(See Explanatory note 'F')

- |                  |             |   |
|------------------|-------------|---|
| (a) Adults       | (i) Male    | : |
|                  | (ii) Female | : |
| (b) Young person | (i) Male    | : |
|                  | (ii) Female | : |

13. In respect of factories carrying on processes or operations declared dangerous under section 87, furnish the following information (see Explanatory note 'G')

Name of dangerous process or operation carried on (See Explanatory note 'G')	Average number of persons employed daily in each of the process or operation given (See Explanatory note 'D')	Number of persons			
		Medically examined		Declared unfit	
		Male	Female	Male	Female
1	2	3	4	5	6
i)					
ii)					
iii) etc.					

14. In respect of factories carrying on 'hazardous process' as defined in section 2 (cb), furnish the following information (see Explanatory note 'H')

Name of the industry as per First Schedule:

Name of hazardous process (See Explanatory note 'I')	Average number of persons employed daily in each of the process or operation given (See Explanatory note 'D')	Number of persons			
		Medically examined		Declared unfit	
		Male	Female	Male	Female
1	2	3	4	5	6
i)					
ii)					
iii) etc.					

**Leave with wages**

15. Total number of workers employed during the year (see Explanatory note 'J')

(a) Adult (i) Male :

(ii) Female :

(b) Young person (i) Male :

(ii) Female :

16. Number of workers who were entitled to annual leave with wages during the year

(a) Adult (i) Male :

(ii) Female :

- (b) Young person (i) Male :  
(ii) Female :

17. Number of workers who were granted 'Leave' during the year (see Explanatory note 'K')

- (a) Adults (i) Male :  
(ii) Female :  
(b) Young person (i) Male :  
(ii) Female :

18. (a) Total number of workers discharged/dismissed from the service/quit employment/superannuation/died while in service during the year :  
(b) Number of workers in respect of whom wages in lieu of leave were paid :

**Safety Officers**

(See Explanatory note 'L')

19. (a) Is the factory notified for appointment of Safety Officers under section 40-B(1) (i) : Yes  No   
(b) Is the factory notified for appointment of Safety Officers under section 40-B(1) (ii) (for factories other than those in (a) above) : Yes  No   
(c) Number of Safety Officers appointed :

**Health and Safety Policy**

Information to be furnished only by -

- (a) Factories covered under section 2(cb) or section 87 of the Act, and  
(b) Factories other than (a) but employ ordinarily, in case of factories registered under-  
(i) section 2m (i), 50 or more workers; and  
(ii) section 2m (ii); 100 or more workers.

20. Has the factory formulated health and safety policy? : Yes  No   
If yes, enclose a copy thereof :

**Safety Committee**

(Information to be furnished only by (i) factories carrying on hazardous process or dangerous operations, and (ii) other factories employing 100 or more workers)

21. Is safety committee appointed? If more than one committee, give numbers: : Yes  No

**Emergency Plan**

Information to be furnished by factories covered under section 2(cb) (see Explanatory note 'M')

22. (a) Has the factory got on-site emergency plan approved by the factory Inspectorate :
- (b) If the factory is required to prepare an off-site emergency plan, has it been prepared? :

**Medical Facilities**

23. Information to be furnished only by -

- (a) Factories employing 200 or less persons covered under sections 2(cb) or 87:-

- (i) Number of Factory Medical Officers (appointed on retainership basis or part-time basis) :
- (ii) Number of ambulance vans available with the factory directly or factory arrangement :

(b) Factory employing above 200 workers covered under section 2(cb) or 87:-

- (i) Number of full time Factory Medical Officers :
- (ii) Number of ambulance vans available :

(c) All factories employing 500 or more workers:-

- (i) Number of full time Factory Medical Officers :
- (ii) Number of ambulance vans :
- (iii) Number of ambulance rooms provided :

**Competent Supervisor**

(See Explanatory note 'N')

[Information to be furnished only by factories covered under section 2(cb)]

24. (a) Number of competent Supervisors appointed :
- (b) Number of competent supervisors who have received safety training as required under rule 90-S :

### Industrial Hygienists

(See Explanatory note 'O')

25. Number of Industrial hygienists employed to monitor work environment as required under section 7-A and rules framed under section 112 :
- 26 (a) Is there is a canteen provided in the factory as required under section 46 i.e only those factories will furnish information wherein more than 250 workers are ordinarily employed? : Yes  No
- (b) Is the canteen provided manager run :
- (i) Departmentally or : Yes  No
- (ii) Through a contractor : Yes  No

### Shelter or Rest Rooms and Lunch Rooms

(Only those factories will furnish information wherein 150 or more workers are ordinarily employed)

27. As required under section 47-
- (a) Are there adequate and suitable shelters or rest rooms provided in the factory? :
- (b) Are there adequate and suitable lunch rooms provided in the factory (any canteen maintained in compliance with section 46 will be accepted here also) :

### Creches

28. Is there a creche provided in the factory as required under section 48 (i.e. only those factories will furnish information wherein more than 30 women workers are ordinarily employed)? :

### Welfare Officers

- 29 (a) Number of Welfare Officers required under section 49 (i.e only those factories will furnish information wherein 500 or more workers are ordinarily employed?) :
- (b) Number of Welfare Officers actually appointed :

30. [Accident and dangerous occurrences (see Explanatory note 'P'(1)]

(a) Total number :

Categories	Accident involving							
	Only non-fatal injuries See Explanatory note 'P'(2)			Fatal injuries as well as non-fatal injuries See Explanatory note 'P'(2)				
	Number of			Number of				
	Accidents/ Occurrences	Persons injured		Accidents/ Occurrences	Persons injure		Persons injured	
		Inside the Factory	Outside the Factory		Inside the Factory	Outside the Factory	Inside the Factory	Outside the Factory
1	2	3	4	5	6	7	8	9
1. Accidents including dangerous occurrences and major accidents involving injuries/death.								
2. Dangerous occurrences not involving injuries/death								
3. Dangerous occurrence involving injuries/death								
*4 Major accidents involving injuries/deaths								
*5 Major accidents not involving injury/death								

\*See Explanatory note 'P'(3)

(b) For injuries occurring inside the factory:

Number of injuries occurring in								
Hazardous process under section 2(cb)			Dangerous operations under section of			Others		
Number of			Number of			Number of		
Accidents	Persons injured		Accidents	Persons injured		Accidents	Persons injured	
	Fatal	Non-fatal		Fatal	Non-fatal		Fatal	Non-fatal
1	2	3	4	5	6	7	8	9

- (c) (i) Non-fatal injuries (workers injured) during the year in which injured workers returned to work during the same year.
- (aa) Number of injuries :
- (bb) Mandays lost due to injuries :
- (ii) Non-fatal injuries (workers injured) occurring in the previous year in which injured workers returned to work during the year to which this return relates :
- (aa) Number of injuries :
- (bb) Mandays lost due to injuries (this should be the total mandays lost during the previous year as well as in the current year) :
- (d) Non-fatal injuries occurring in the year in which injured workers did not return to work during the year to which this return relates. :
- (aa) Number of injuries :
- (bb) Mandays lost due to injuries :

## **PART - B**

(Under the Payment of Wages Act, 1936)

31. (I) Number of Mandays worked (i.e. aggregate number of attendance) during the year for persons earning less than Rs. 1600/- per month (see Explanatory note 'C')
- (a) Adult :
- (b) Young person :
- Total :
- (ii) Average number of workers employed daily (i.e. mandays worked divided by number of days worked) for persons earning less than Rs. 1600/- per month (See Explanatory note 'D')
- (a) Adult :
- (b) Young person :
- Total :

32. 'Total wages paid' including 'Deductions' under section 7 (2) of the Payment of Wages Act, 1936 for persons getting less than Rs. 1600/-per month on the following accounts.

- a) Basic wages only Rs.
- b) Dearness allowances Rs.
- c) Composite wages (i.e. if combined Basic wage and dearness allowance paid) Rs.
- d) Overtime wages Rs.
- e) Non-profit sharing bonus Rs.
- f) Any other bonus (other than profit sharing bonus) Forming part of wages as defined under the Act. Rs.
- g) Any other amount paid in cash which may form Part of wages as defined under the Act (pleased Specify) Rs.
- h) Arrears of pay in respect of previous year paid During the year Rs.
- i) Total wages paid (total) of (a+b) or (c+d+e+f+g+h) Rs.

33. 'Gross amount paid' as remuneration to persons getting less than Rs. 1600/- per month including 'deductions' under section 7(2) of the Act on the following accounts ;

- a) 'Total wages paid' (item 32) during the year Rs.
- b) 'Bonus paid' during the year (include arrears also, if paid during the year. This is statutory bonus as well as Profit Sharing Bonus) Rs.
- c) 'Amount' of Money Value of Concession' [see Explanatory note Q] given during the year Rs.

### PART – C

(Under the Minimum Wages Act, 1948)

34. (i) Number of mandays worked (i.e aggregate number of attendance during the year by the persons covered under the Minimum Wages Act, 1948 (See Explanatory note 'C')

- a) Adult :
- b) Young persons :
- Total :

(ii) Average number of persons employed under the Minimum Wages Act, 1948) daily (i.e. mandays worked divided by number of days worked) during the year (see Explanatory note 'D')

- |                  |   |  |
|------------------|---|--|
| a) Adult         | : |  |
| b) Young persons | : |  |
| Total            | : |  |
35. 'Total wages paid' to workers covered under the Minimum Wages Act, 1948.
- |  |  |   |     |
|--|--|---|-----|
| (i) Wages paid in cash   | (a) Basic wages                                | : | Rs  |
|  | (b) Dearness Allowance                         | : | Rs. |
|  | (c) Composite wage if paid                     | : | Rs. |
| (ii) Cash value of wages paid in kind (See Explanatory note 'R') |  | : | Rs  |
| (iii) Overtime wage  |  | : | Rs. |
| (iv)   | Any other amount paid in cash (please specify) | : | Rs. |
|  | Total  | : | Rs. |

#### **PART – D**

(Under the Maternity Benefit Act, 1961 the ESIC Act, 1948)

36. Aggregate number of women permanently or temporarily employed during the year (a particular worker is to be counted once only) : Rs.
37. Number of women who claimed maternity benefit during the year : Rs.
38. Number of maternity benefit claims accepted and paid either fully or partially : Rs.
- |                              |   |     |
|------------------------------|---|-----|
| a) Total                     | : | Rs. |
| b) From current year's claim | : | Rs. |
39. (a) Number of maternity benefit cases in which bonus was paid : Rs.
- |                                  |   |     |
|----------------------------------|---|-----|
| (b) Amount of medical bonus paid | : | Rs. |
|----------------------------------|---|-----|
40. Amount of maternity benefit paid including medical bonus : Rs.
41. Number of cases in which women enjoyed full maternity leave prior to confinement : Rs.

(Under the Worker's Compensation Act, 1923/ESIC Act, 1948)

42. Average number of workers (covered under the Act) employed daily i.e. manadays worked divided by number of days worked (see Explanatory notes 'S' and 'D')

(i) Adults	: Rs.
(ii) Young persons	: Rs.
(iii) Total	: Rs.



43. Injuries compensated (occupation wise)

Name of occupation	Number of injuries in respect of which final compensation has been paid during the year (See Explanatory note 'T')									Amount of compensation paid Rs. (See Explanatory note 'U')								
	Death			Permanent disablement			Temporary disablement (See Explanatory note 'V')			Death			Permanent disablement			Temporary disablement (See Explanatory note 'V')		
	Adults	Young persons	Total	Adults	Young persons	Total	Adults	Young persons	Total	Adults	Young persons	Total	Adults	Young persons	Total	Adults	Young persons	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

44. Occupational diseases (occupation wise)  
See Explanatory note 'W'

Name of occupation	Nature of disease (See Explanatory note 'X')	Number of cases of diseases (See Explanatory note 'T') in respect of which fina; compensation has been paid during the year									Amount of compensation paid Rs. (see Explanatory note 'U')								
		Death			Permanent disablement (See Explanatory note 'V')			Temporary disablement			Death			Permanent disablement			Temporary disablement (See Explanatory note 'V')		
		Adults	Young persons	Total	Adults	Young persons	Total	Adults	Young persons	Total	Adults	Young persons	Total	Adults	Young persons	Total	Adults	Young persons	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Total																			

**PART – F**

(Under the Industrial Employment (Standing Orders) Act, 1946)

45. Is the establishment covered under the Industrial Employment (Standing Orders) Act, 1946 (See Explanatory note ‘Y’) :
46. If yes, whether the establishment has the ‘Certified Standing Orders’ of all or a group of employees ? :
- a) (i) If for all, the number of worker (see explanatory note ‘Z’) covered by the Certified Standing Orders’ :
- (ii) Date of certification :
- b) (i) If for a group of employees, the number of only such workmen covered by the ‘Certified Standing Orders’ :
- (ii) Date of certification :

Certified that the information furnished above is, to the best of my knowledge and belief, correct.

Signature of the manager

Name (in block letters)

Date :

Address & telephone No.

**EXPLANATORY NOTES**

A. “*Establishment*” in “Public Sector” means an establishment owned, controlled or managed by 9I) The Government or the Department of the Government, or (ii) a Government Company as defined in Section in Section 617 of the Companies Act, 1956, or (iii) a Corporation established or under Central Provincial or State Act, which is owned, controlled or managed by the Government or (iv) a Local Authority.

“Establishment” in “Joint Sector” means an establishment managed jointly by the Government and Private Entrepreneur.

“Establishment” in “Cooperative Sector” means an establishment which is not an establishment in Public Sector or Joint Sector or Cooperative Sector.

AA. “*Major Accident Hazard Factory*” is one having an industrial activity using, producing or storing hazardous substance in such a quantity that possess the potential to causes substantial damage and to kill or injure a person within or outside the factory boundary.

B. (1) “*Working day*” should be taken to be a day on which although no manufacturing process was carried on bur more than 50% of the workers (preceding the date under consideration) were deployed on maintenance and repair work, etc. on closed days. Days on which the factory was closed for whatever cause and days on which no

manufacturing process was carried on should not be treated as working days.

- (2) For seasonal factories\* information about working season and off-season should be given separately.

\*Section 2(12) of E.S.I. Act, 1948 defines “Seasonal Factory” as follows :-

“*Seasonal Factory*” means a factory which is exclusively engaged in one or more of the following manufacturing processes, namely cotton ginning, jute or cotton pressing, decortication of groundnuts, the manufacturing of coffee, indigo, lac, rubber, sugar (including gur) or tea or any manufacturing process which is incidental to or connected with any of the aforesaid processes and includes a factory which is engaged for a period not exceeding seven months in a year-

- a) in any process of blending, packing or packing of repacking of tea or coffee; or
- b) in such other manufacturing process as the Central Government may, by notification in the Official Gazette, specify.

The expression “manufacturing process” and “power” shall have the meanings respectively assigned to them in the Factories Act, 1948 (Central Act, 63 of 1948).

BB. “*Major Accident Hazard substance*” means a substance presenting major accident hazard and included in the list already notified and which have been classified into five groups.

- C. Mandays working should be the aggregate number of attendance of all the workers, covered under the Act, in all the working days. In reckoning attendance, attendance by the temporary as well as permanent employees should be counted, and all employees should be counted, and all employees should be included, whether they are employed directly or under contractors (Apprentices, who are not covered under Apprentices Act, 1961, are also to be included). Attendance on separate shifts (e.g. night attendance and day shifts) should be counted separately. Partial attendance for less than half a shift on a working day should be ignored while attendance for half a shift or more on such day should be treated as full attendance.
- D. The average number of workers employed daily should be calculated by dividing the figures of “mandays worked” by number of days worked in the year. For seasonal factories\*, the Average number of workers Employed Daily during the working season and off-season should be given separately (\*Refer note B.2)
- E. The “Total number of Manhours worked” should be the TOTAL ACTUAL HOURS WORKED BY ALL the workers during the year excluding Rest Intervals but including overtime worked. The term “Young person” shall include “Adolescents” also who have not been certified to work as adults.
- F. The “Average Number of Hours worked per week” should be calculated by dividing the “Total number of Manhours worked” by the product of “Average number of workers employed daily” in the factory during the year (item 10) and 52 (i.e. number of weeks during the year). In other words, item 11..... (item 10x52)= item 12. In case the factory has not worked for the whole year, the number of weeks during which the factory worked should be used in the place of figure 52. For seasonal factories, the “Average Number of Hours Worked per week” during the working season and off-season should be given separately.
- G. All such “Dangerous Processes or Operations” as specified and declared in the Rules

framed under section 87 of the Factories Act, 1948 should be checked. If the factory or even a part of the factory submitting returns falls under this section, the fact should be mentioned against this item and requisite information furnished accordingly.

- H. All such 'Hazardous Process' in relation to the industries specified in the First Schedule to the Factories Act and defined under section 2 (cb) of the Act should be checked. If a factory or even a part of the factory submitting returns, fails under this section, the fact should be mentioned against this item and requisite information furnished accordingly.
  - I. There may be number of 'hazardous processes' being carried on in any one industry specified in the First Schedule to the Act. All such Processes should be given individually in this table.
  - J. All persons, who have been on roll even for a single day during the year should be taken that a particular worker is counted once only.
  - K. A particular worker is to be counted once only even if the same worker has been granted leave more than once during the year.
  - L. In every factory, wherein 1000 or more workers are ordinarily employed and the factory has been notified under section 40 B (1) (i), or wherein the factory is carrying on any hazardous process defined in section 2 (cb) or dangerous operations as defined in section 87 and the factory has been notified under section 40-B (1) (ii), the occupier shall employ the required number of Safety Officers with prescribed qualifications. The term 'Ordinarily Employed' would mean the total number of workers working in all the shifts and the employment should be for over 50% of the working days of the establishment in the year.
  - M. The occupier of every factory where a 'hazardous process' takes place or where hazardous substances are used or handled shall, with the approval of Chief Inspector of Factories, draw up an on-site emergency plan for this factory and make known to the workers employed therein the safety measures required to be taken in the event of an accident taking the place. The occupier shall prepare off-site emergency plan based on events which could affect people and the environment outside the work premises. The District/ local authority shall prepare disaster plan for area based in off-site plans of individual units.
  - N. All persons who are required to supervise the handling of 'hazardous substance' shall process:-
    - (a) Degree in Chemistry or Diploma in Chemical Engineering or Technology with five years experience; or
    - (b) Master's Degree in Chemistry or a Degree in Chemical Engineering or Technology with 2 years experience.
- NOTE* : The experience stipulated above shall be in process operation and maintenance in Chemical Industry.
- O. The occupier shall appoint Industrial Hygienist possessing-
    - (a) M. Sc. Degree in Chemistry with 2 years analytical experience in a chemical laboratory of repute; or
    - (b) M. Sc. Degree in Chemistry with 2 years experience in conducting survey in industrial hygiene.
  - P. (1) Dangerous Occurrence – The following classes of occurrences are dangerous

occurrences –

- (1) Bursting of plant used for containing or supplying steam under pressure greater than atmospheric pressure.
  - (2) Collapse or failure of a crane, derrick, winch, hoist or other appliances used in raising or lowering persons or goods, or any part thereof, or the overturning of a crane.
  - (3) Explosion, fire bursting out, leakage or escape of any molten metal, or hot liquor or gas causing bodily injury to any person or damage to any room or place in which persons are employed, or in fire in rooms of cotton pressing factories when a cotton opener is in use.
  - (4) Explosion of a receiver or container used for the storage at a pressure greater than atmospheric pressure of any gas or gases ( including air ) or any liquid solid resulting from the compression of gas.
  - (5) Collapse or substance of any floor, gallery, roof, bridge, tunnel, chimney, wall, building, or any other structure.
- (2) Only such injuries which prevented workers from working of 48 hours or more immediately following the accident should be reported as non-fatal injuries.
- (3) A major accident is a sudden, unexpected, unplanned event, resulting from uncontrolled developments during an industrial activity, which causes, or has the potential to cause, serious adverse effects immediate or delayed (death, injuries, poisoning or hospitalisation) to a number of people inside the installation and / or to persons outside the establishment.
- Q. The money value of concession is the cost of value of the next cost of the concession, as the case may be, in respect of all supplies made and all services rendered individually, free of cost. In case of concessional sale of essential commodities to the employees, the difference between the purchase price paid by the employer and the actual price paid by the employees is to be taken as the basis for computing the ‘Money Value of Concession.’
- R. ‘Cash Value of Wages paid in kind’ and of ‘Concession’ in respect of essential commodities at concessional rates authorised under sub-sections (2) and (3) of section 11 of the Minimum Wages Act, 1948, shall be estimated in the manner prescribed by the Appropriate Government. In so far as the Central Government is concerned as laid down under Rule 20 of the Minimum Wages (Central) Rules, 1950, the retail price at the nearest market shall be taken into account in computing the Cash Value of Wages paid in kind. This computation shall be made in accordance with directions as may be issued by the Central Government from time to time. The cash value of the concession should be obtained by taking the differences between the cost price paid for supplies of essential commodities given at the concessional rates.
- S. Include all employees (covered under the Workmen’s Compensation Act, 1923) whether permanent or temporary, who would, in the case of accidents be eligible for compensation under the Act and for whom a return is required to be furnished. Number employed should be shown even if there are no payments of compensation to report.
- T. Include for each occupation only those cases in which the final payment of compensation was made during the year. A deposit with the commissioner shall be treated as a payment

by the employer.

- U. (1) Include all compensation paid in respect of the cases mentioned in Explanatory note "T" whether such compensation was paid during the year or previous to its commencement. Exclude all payments in cases in which the final payment has not been made by the end of the year to which the return relates.
- (2) Where the benefit actually showed (e.g. hospital leave on full days) is in excess of the compensation admissible under the Workmen's Compensation Act, 1923, only the amount of the compensation so admissible should be entered in the return.
- V. Only such disablements as last for more than three days should be shown (section 4 (1) of the Workmen's Compensation Act, 1923)
- W. Check up with the 'List of Occupational Disease' as laid down in Schedule III appended to the Workmen's Compensation Act, 1923. In case of those 'Occupational Diseases' only which resulted in cases in respect of which compensation was paid, the information was paid, the information is to be furnished.
- X. Enter for, each occupation separately each of the 'Disease' referred to in Explanatory note 'W', which resulted in case in respect of which compensation was paid.
- Y. As laid down under section 1 (3) of the Industrial Employment (Standing Orders) Act, 1964, the Act applies to every industrial establishment wherein one hundred or more workmen are employed or were employed on any day of the preceding twelve months provided that the 'Appropriate Government' may, after giving not less than two months notice of its intention so to do, notification in the Official Gazette, apply the provision of that Act to any industrial establishment employing such number of persons less than one hundred as may be specified in the notification. The 'industrial establishment' means the establishment as defined under section 2 © of the Act, 1964.
- Z. Only such 'Workmen; as define under section 2(I) of the Industrial Employment (Standing Orders) Act, 1946, are to be taken into account.

FORM No. 35

[See rule 136 (b)]

**HALF YEARLY RETURNS**

For the half year ending June 20.....

(This return should be sent to the prescribed authority latest by 15<sup>th</sup> July of current year)

Registration No. \_\_\_\_\_

Licence No. \_\_\_\_\_

NIC Code No. \_\_\_\_\_  
(as given in the licence)

1. Name of factory :
2. Name of occupier :
3. Name of manager :
4. District :
5. Full postal address of the factory  
(including PIN CODE) :
6. Industry :
  - a) Nature of industry  
(See Explanatory note – 1) :
  - b) Section of the Act under  
which the factory is  
covered (please tick (ii)  
the appropriate box) : 2m(i)   
2m(ii)   
Section 85
  - c) Sector of industry  
(Please tick (ii)  
appropriate box)  
(See Explanatory  
note 2) :  Public sector  
 Cooperative sector  
 Joint sector  
 Private sector
7. Number of days factory worked during the  
half year ending 30<sup>th</sup> June, 19.... (See  
explanatory note 3) :
8. Number of mandays worked (i.e aggregated  
attendance) during the half year ending 30<sup>th</sup>

June, 20 .....	(See Explanatory note 4)	:
a) Adults	(i) Male	:
	(ii) Female	:
b) Adolescents	(i) Male	:
	(ii) Female	:
c) Children	(I) Male	:
	(ii) Female	:
	Total	:

9. Average number of workers employed (daily) i.e. item 8 divided by item 7 (See explanatory note 5) :

(a) Adults	(i) Male	:
	(ii) Female	:
(b) Adolescent	(i) Male	:
	(ii) Female	:
(c) Children	(i) Male	:
	(ii) Female	:
	Total	:

10. Medical information

(a) Total number of workers employed in hazardous process	:
(b) Name of hazardous process	:
(c) Number of Medical Officer employed	:
(i) Full time	:
(ii) Part-time	:
(d) Number of workers examined by factory Medical Officer	:
(i) Worker working in hazardous process	:
(ii) Others	:

Signature of Manager  
Name (in block letters)

Date :-

### EXPLANATORY NOTES :-

1. Mention what is actually manufactured, including repairs of all types, following the NIC code at the four digit level.
2. “Establishment” in ‘Public Sector’ means an establishment owned, controlled or managed by (I) the Government or the Department of the Government or (ii) a Government company as defined in section 617 of the Companies Act, 1956, or (iii) a corporation established by or under Central, Provincial or State Act, which is owned, controlled or managed by the Government or (iv) a Local Authority.  
“Establishment” in ‘Joint Sector’ means an establishment managed by the Government and Private Entrepreneur.  
‘Establishment’ in ‘Private Sector’ means an establishment which is not an establishment in Public Sector or Joint Sector or Cooperative Sector.
3. (i) ‘Working day’ should be taken to be a day on which the establishment actually worked and manufacturing process was carried on but more than 50% of the workers (preceding the date under consideration) were deployed on maintenance and repair work, etc. on closed days. Days on which the factory was closed for whatever cause and days on which no manufacturing process was carried on should not be treated as working days.  
(ii) For seasonal factories\* information about working season and off-season should be given separately.
4. Mandays worked should be the aggregate number of attendance of all the workers, covered under the Act, in all shifts on all the working days. In reckoning attendance, attendance by the temporary as well as permanent employed should be counted and all employees should be included, whether they are employed directly or under contractor (Apprentices, who are not covered under the Apprentices Act, 1961, are also to be include) Attendance in separate shifts (e.g. night and day shifts) should be counted separately. Partial attendance for less than half a shift on a working day should be ignored while attendance for half a shift or more on such days should be treated as full attendance.
5. The average daily number should be calculated by dividing the aggregate number of attendance (mandays worked) on working days by the number of working days during the half year.

\*Section 2(12) of E.S.I. Act, 1948 defines “Seasonal Factory” as follows :-

‘Seasonal Factory’ means a factory which is exclusively engaged in one or more of the following manufacturing process, namely cotton ginning, cotton or jute pressing, decoration of ground-nuts, the manufacturing process which is incidental to or connected with any of the aforesaid processes and includes a factory which is engaged for a period of not exceeding seven months in a year :-

- a) in any process of blending, packing or prepackaging of tea or coffee; or
- b) in such manufacturing process as the Central Government may, by notification in the Official Gazette, specify :

The expression ‘manufacturing process’ and ‘power’ shall have the meanings respectively assigned to them in the Factories Act, 1948 (63 of 1948)

FORM 36  
(See rule 140)

**MUSTER ROLL**

Sr. No.	Serial number in the register of Adult/Child worker	Name of worker	Father's/husband's name	Date of birth	Date of appointment	Groip to which the worker belongs		Number of relay if working in shifts	Adolescent if certified as adult	
						Occupation	Alphabet assigned		Number and date of certificate	Token number under section 68
1	2	3	4	5	6	7	8	9	10	11

Period of work	Daily attendance for the month of	Total number of mandays worked	Mandays lost due to				
			Strikes	Lay off	Lock out	Leave with pay	Leave without pay
12	13	14	15	16	17	18	19

Any other reason	Total of col.15 to col. 20	Number of festival and national holidays	Number of weekly holidays (off) paid for	Total mandays paid for*	Remarks
20	21	22	23	24	25

\*Sum of col. 14 + col. 18 + col. 22 + col. 23 + col. 15 to 17, if paid for:

F O R M NO. 37

[See rule 136(d) and 141]

**Register of accidents and dangerous occurrences**

Injury/dangerous occurrences														
Serial number	Date and time of notice	Name and serial number of the person involved in the register of adult/child register	ESIC insurance number	Date	Time	Place	Cause of accident/major accident/dangerous occurrences	Name of injury/dangerous occurrences	What exactly was the injured person, if any, doing at that time?	Name of the person giving the notice	Name, address and occupation of two witnesses	Date of return of injured person to work	Number of days the injured person was absent from the work including holidays and off-days	Signature and designation of the person who make the entry with date
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

FORM No. 38

(See rule 142)

**INSPECTION BOOK**

Page	:	Heading
Covering page	:	Inspection book for Inspectors of Factories and Certifying Surgeon only
Back of the covering page	:	Manager's remarks regarding action taken, if any.
Every numbered page	:	Inspector's or Certifying Surgeon's remarks.
Back of every numbered page	:	Manager's remarks regarding action taken, if any.

**1. Short title and commencement.**- (1) These rules may be called “The Goa Control of Industrial Major Accident Hazards Rules, 1993”.

(2) They shall come into force at once.

**2. Definitions.**- In these rules, unless the context otherwise requires,-

(a) “hazardous chemical” means,-

(i) any chemical which satisfies any of the criteria laid down in Part I of Schedule 1 and is listed in Column 2 of Part II of that Schedule;

(ii) any chemical listed in Column 2 of Schedule 2; or

(iii) any chemical listed in Column 2 of Schedule 3.

(b) “industrial activity” means- an operation or process carried out in a factory referred to in Schedule 4 involving or likely to involve one or more hazardous chemicals and includes on-site storage or on-site transport which is associated with that operation or process, as the case may be;

(c) “isolated storage” means storage where no other manufacturing process other than pumping of hazardous chemical is carried out and that storage involves at least a quantity of that chemical set out in Schedule 2 but does not include storage associated with a “factory “specified in Schedule 4 on the same site.

(d) “major accident” means an incident involving loss of life inside or outside the site or 10 or more injuries inside and/or one or more injuries outside or release of toxic chemical or explosion or fire or spillage of hazardous chemical resulting in “on-site” or “off-site” emergencies or damage to equipments leading to stoppage of process or adverse effects to the environment

(e) “pipeline” means a pipe (together with any apparatus and works associated therewith) or system of pipes (together with any apparatus and works associated therewith), for the conveyance of a hazardous chemical, other than a flammable gas as set out in Column 2 of Part II of Schedule 3 at a pressure of less than 8 bars absolute;

(f) “Schedule” means Schedule appended to these rules;

(g) Words and expression not defined in these rules but defined or used in the Factories Act, 1948 and the rules made thereunder shall have the same meaning as assigned therein.

**3. Collection, development and dissemination of information .-**(1) This rule shall apply to an industrial activity or isolated storage in which a hazardous chemical which satisfies any of the criteria laid down in Part I of Schedule 1 or is listed in Column 2 of Part II of that Schedule is or may be involved.

(2) An occupier, of an industrial activity or isolated storage in terms of sub rule (1) of this rule, shall arrange to obtain or develop information on hazardous chemicals in the form of a material safety data sheet as specified.

(3) The occupier while obtaining or developing a safety data sheet as specified in Schedule 5 in respect of hazardous chemical handled by him shall ensure that the information is recorded accurately and reflects the scientific evidence used in making the hazard determination. In case, any significant information regarding hazard of a chemical is available, it shall be added to the safety data sheet as specified in Schedule 5 as soon as practicable.

(4) Every container of a hazardous chemical shall be clearly labelled or marked to identify-

- (a) the contents of the container;
- (b) the name and address of the manufacturer or importer of the hazardous chemical; and
- (c) the physical, chemical and toxicological data of the hazardous chemical.

(5) In terms of sub-rule (4) of this rule where it is impractical to label a chemical in view of the size of the container or the nature of the package, provision shall be made for other effective means like tagging or accompanying documents.

**3(A) Duties of Inspector.-** The inspector shall –

- (a) inspect the industrial activity or isolated storage at least once in a calendar year.
- (b) Send annually status report on the compliance with the Rules by occupiers to the Ministry of Environment and Forests through the Directorate General Factory Advice Service and Labour Institutes and Ministry of Labour Government of India, and
- (c) Enforce directions and procedures in respect of industrial activities or isolated storages covered under the Factories Act 1948 (Central Act 63 of 1948), and in respect of pipelines upto a distance of 500m from the outside of the perimeter of a factory regarding-
  - (i) Notification of major accidents as per rule 5
  - (ii) Notification of sites as per rules 7 and 8
  - (iii) Safety reports and further information in terms of rules 10 to 12
  - (iv) Preparation of on-site emergency plans as per rule 13 and involvement in the preparation of off-site emergency plans in consultation with District Collector or District Emergency Authority” in terms of rule 14.

**4. General responsibility of the occupier.-** (1) This rule shall apply to –

- (a) an industrial activity, in which a hazardous chemical which satisfies any of the criteria laid in Part I of Schedule I or is listed in Column 2 of Part II of that Schedule is or may be involved; and
- (b) isolated storage in which there is involved a threshold quantity of a hazardous chemical listed in Column 2 of Schedule 2 which is equal to or more than the threshold quantity specified in the Schedule for that chemical in Column 3 thereof.

(2) An occupier in terms of schedule of sub rule (1) shall provide information on demand to show that he has-

- (a) identified the major accident hazards; and
- (b) taken adequate steps to-
  - (i) prevent such major accidents and to limit their consequences to persons and to environment; and

- (ii) provide the persons working on the site with the information, training and equipment including antidotes necessary to ensure their safety and health.

**5. Notification of major accidents.-** (1) Where a major accident occurs on a site, or in a pipe line, the occupier shall, within 48 hours, notify the inspector and Chief Inspector of that accident and furnish thereafter to the inspector and the Chief Inspector a report relating to the accident in installments, if necessary, in Schedule 6.

(2) The Inspector and Chief Inspector shall, on receipt of the report in accordance with sub rule (i) of this rule undertake a full analysis of the major accident and send the requisite information to the Ministry of Environment Forest through the Directorate General Factory Advice Service & Labour Institutes and Ministry of Labour, Government of India

(3) An occupier shall notify to the Inspector steps taken to avoid any repetition of such occurrence on a site.

(4) The Inspector and the Chief Inspector shall compile information regarding major accidents and make available a copy of the same to the Ministry of Environment and Forests through the Directorate General Factory Advice and Labour Institutes and Ministry of Labour, Government of India.

(5) The Inspector and the Chief Inspector shall inform the occupier in writing of any lacunae which in their opinion needs to be rectified to avoid major accidents”

**6. Industrial activities or isolated storages to which rules 7 to15 apply.-** (1) Rules 7, 8, 13 & 15 shall apply to an industrial activity, other than isolated storage, in which there is involved a threshold quantity of a hazardous chemical listed in Column 2 of Schedule 3 which is equal to or more than the threshold quantity specified In the entry for that chemical in Column 3;

(2) Rules 10 to 12 shall apply to an industrial activity, other than isolated storage, in which there is involved a quantity of a hazardous chemical listed in Column 2 of Schedule 3 which is equal to or more than the threshold quantity specified in the entry for that chemical in Column 4;

(3) Rules 7 and 8 shall apply to an isolated storage, in which there is involved a quantity of a hazardous chemical listed in Column 2 of Schedule 2 which is equal to or more than the threshold quantity specified in the entry for that chemical in Column 3; and

(4) Rules 10 to 13 and 15 shall apply to an isolated storage, in which there is involved a quantity of a hazardous chemical listed in Column 2 of Schedule 2 which is equal to or more than the threshold quantity specified in the entry for that chemical in Column 4.

**7. Notification of site.-** (1) An occupier shall not undertake any industrial activity or isolated storage unless he has submitted a written report to the Chief Inspector containing the particulars specified in Schedule 7 at least 90 days before commencing that activity or before such shorter time as the Chief Inspector may agree and for the purpose of this sub-rule, an activity in which subsequently there is or is liable to be a threshold quantity given in Column 3 of Schedules 2 and 3 or more of an additional hazardous chemicals shall be deemed to be a different activity and shall be notified accordingly.

(2) The Chief Inspector shall, within 60 days from the date of receipt of the report in accordance with sub rule (1) of this rule, examine the report and if on such examination, he is of the opinion that the contravention of the provisions of the act or the rules made thereunder has taken place, he may issue notice for obtaining

compliance

**8. Updating of the site Notification.-** Where an activity has been reported in accordance with rule 7(1) and the occupier makes a change in it (including an increase or decrease in the maximum quantity of a hazardous chemical to which this rule applies which is or is liable to be at the site or at the cessation of the activity) which affects the particulars specified in that report or any subsequent report made under this rule, the occupier shall forthwith furnish a further report to the Inspector and the Chief Inspector.

**9. Transitional provision: Omitted**

**10. Safety Reports and Safety Audit Reports.-** (1) Subject to the following sub-rules of this rule, an occupier shall not undertake any industrial activity or isolated storage to which these rules apply, unless he has prepared a safety report on that industrial activity containing the information specified in Schedule 8 has sent a copy of that report to the Chief Inspector at least 90 days before commencing that activity.

“(2) After the commencement of these rules, the occupiers of both the new, and the existing industrial activities or isolated storages shall arrange to carry out safety audit by a competent agency to be accredited by an Accreditation Board to be constituted by the Ministry of Labour, Government of India in this behalf.

Further, such auditing shall be carried out as under:-

- (a) Internally once in a year by a team of suitable plant personnel;
- (b) Externally once in two years by a competent agency accredited in this behalf
- (c) In the year; when an external audit is carried out, internal audit need not be carried out.

(3) The Occupier shall within 30 days of the completion of the audit, send a report to the Chief Inspector with respect to the implementation of the audit recommendations”.

**11. Updating of safety reports under rule 10.-** (1) Where an occupier has made a safety report in accordance with sub-rule (1) of rule 10, he shall not make any modification to the industrial activity or isolated storage to which that safety report relates which could materially affect the particulars in that report, unless he has made a further report to take account of these modifications and has sent copy of that report to the Inspector and the Chief Inspector at least 90 days before making those modification.

(2) Where an occupier has made a report in accordance with rule 10 and sub-rule (1) of this rule and that industrial activity or isolated storage is continuing, the occupier shall within three years of the date of last such report, make a further report which shall have regard in particular to new technical knowledge which has affected the particulars in the previous report relating to safety and hazard assessment, and shall within 30 days or in such longer time, as the Inspector and the Chief Inspector may agree in writing, send a copy of the report to the Chief Inspector.

**12. Requirement for further information to be sent to the Inspector and the Chief Inspector.-** Where in accordance with rules 10 and 11, an occupier has sent a

safety report and safety audit report relating to an industrial activity or isolated storage to the Inspector and the Chief Inspector, the Inspector and the Chief Inspector may, by a notice served on the occupier require him to provide such additional information as may be specified in the notice and the occupier shall send that information to the Inspector and the Chief Inspector within 90 days.

**13. Preparation of on-site emergency plan by the occupier.-** (1) The occupier shall prepare, keep up-to-date and furnish to the Inspector and the Chief Inspector an on-site emergency plan containing details specified in schedule 8A and detailing how major accidents will be dealt with on the site on which the industrial activity or isolated storage is carried on and that plans shall include the name of person who is responsible for safety on the site and the names of those who are authorised to take the action in accordance with the plan in case of an emergency

(2) The occupier shall ensure that the emergency plan prepared in accordance with sub-rule (1) of this rule, takes into account any modification made in the industrial activity or isolated storage and that every person on the site who is concerned with the plan is informed of its relevant provisions.

(3) The occupier shall prepare the emergency plan required under sub-rule (1) of this rule.-

(a) Before the commencement of industrial activity or isolated storage;

(b) Within 90 days of coming into operation of these rules, in case of an existing industrial activity or isolated storage.

(4) The occupier shall ensure that a mock drill of the on-site emergency is conducted at least once in every six months.

(5) A detailed report of the mock drill conducted under sub rule (4 ) shall be immediately made available to the Inspector and the Chief Inspector.

#### **14. Preparation of off-site emergency plans - Omitted**

#### **15. Information to be given to persons liable to be affected by major accidents.-**

(1) The occupier shall take appropriate steps to inform persons outside the site who are likely to be in an area which may be affected by a major accident about –

(a) the nature of the major accident hazard; and

(b) the safety measures and the Dos' and Don'ts which should be adopted in the event of a major accident

(2) The occupier shall take appropriate steps specified in sub rule (1) of this rule to inform persons about, an industrial activity or isolated storage before that activity is commenced, except that in respect of an existing industrial activity or isolated storage, the occupier shall comply with the requirements of sub rule (1) of this rule within 90 days of coming into operation of these rules.

**16. Disclosure of Information.-** Where for the purpose of evaluating information notified under rule 5 or rules 7 to 15, the Inspector or the Chief Inspector discloses that information to some other person, that other person shall not use that information for any purpose except for the purpose of the Inspector or the Chief Inspector disclosing it as the case may be and before disclosing that information the Inspector or the Chief Inspector as the case may be, shall inform that other person of his obligations under this rule.

#### **17. Improvement notice; Omitted**

**18. Power of the State Government to modify the Schedules.-** The state government may, at any time, by notification in the Official Gazette make suitable changes in the Schedules.

**“SCHEDULE – 1”**

[(See rules 2(a)(i), 3(1) and 4(1)(a)]

**Part I**

**(a) Toxic Chemicals:**

Chemicals having the following values of acute toxicity and which, owing to their physical and chemical properties are capable of producing major accident hazards:

Sl. No. by route test	Degree Toxicity	Medium lethal dose by the oral route toxicity LD 50(mg/kg body weight of test animals	Medium lethal dose by the dermal route (dermal LD 50 body weight of test animals)animals)	Medium lethal concentration inhalation (Four hours) LC50 (mg/L/ Inhalation in
(1)	Extremely toxic	1-50	1-200	0.1-0.5
(2)	Highly toxic	51-500	201-2000	0.5-2.0

**(b) Flammable Chemicals:**

**(i) Flammable gases:** Chemicals which in the gaseous state at normal pressure and mixed with air become flammable and the boiling point of which at normal pressure is 20°C or below;

**(ii) Highly flammable liquids:** Chemicals which have a flash point lower than 23°C and the boiling point of which at normal pressure is above 20°C

**(iii) Flammable liquids:** Chemicals which have a flash point lower than 65°C and which remain liquids under pressure, where particular processing condition, such as high pressure and high temperature, may create major accident hazards

**(c) Explosives:** Chemicals which may explode under the effect of flame , heat or photo-chemical conditions or which are more sensitive to shocks or friction than dinitrobenzene

**PART II**

**LIST OF HAZARDOUS AND TOXIC CHEMICALS**

<b>Sr. No.</b>	<b>Name of the Chemical</b>	<b>Sr. No.</b>	<b>Name of the Chemical</b>
1	Acetone	42	Bis (2-Chloromethyl )Ketone
2	Acetone Cyanohydrine	43	Bis (2,4,6- Trinitrophenyl)Amine
3	Acetyl Chloride	44	Bis (2-Chloroethyl) Sulphide
4	Acetylene (Ethyne)	45	Bis (Chloromethyl) Ketone
5	Acrolein (2 –Propenal)	46	Bis (tert-Butylperoxy) Butane, -2,2
6	Acrylonitrile	47	Bis(tert-Butylperoxy) Cyclohexane, 11
7	Aldicarb	48	Bis. 1,2 Tribromophenoxy-Ethane
8	Aldrin	49	Bisphenol
9	Alkyl Phthalate	50	Boron and Compounds
10	Allyl Alcohol	51	Bromine
11	Allylamine	52	Bromine Pentafluoride
12	Alpha Naphthyl Thiourea (Autu)	53	Bromoform
13	Aminodiphenyl,-4	54	-1,3 Butadiene
14	Aminophenol-2	55	Butane
15	Amiton	56	N-Butanethiol
16	Ammonia	57	2-Butanone
17	Ammonium Nitrate	58	Butoxy Ethanol
18	Ammonium Nitrates in fertilizers	59	Butyl Glycidal Ether
19	Ammonium Sulfamate	60	tert Butyl peroxy acetate
20	Anabasine	61	tert Butyl peroxyisobutyrate
21	Aniline	62	tert Butyl Butyl peroxyisopropyl
22	Aniridine-p	63	tert Butyl peroxy maleate,
23	Antimony and Compounds	64	tert-Butyl, Peroxypivalate
24	Antimony Hydride (stibine)	65	Butyl vinyl Ether
25	Arsenic hydride (Arsine)	66	Butyl-n-Mercaptan
26	Arsenic Pentoxide,(Arsenic)(v), Acid and salts	67	Butylamine
27	Arsenic Trioxide, Arsenious(iii) Acids and salts	68	C 9-Aromatic Hydrocarbon Fraction
28	Asbestos	69	Cadmium and Compounds
29	Azinphos –Ethyl	70	Cadmium Oxide (fumes)
30	Azinphos – Methyl	71	Calcium Cyanide
31	Barium Azide	72	Captan
32	Benzene	73	Captfol
33	Benzidine	74	Carbaryl (Sovin)
34	Benzidine Salts	75	Carbofuran
35	Benzoquinone	76	Carbon Disulphide
36	Benzoyl chloride	77	Carbon Monoxide
37	Benzoyl Peroxide	78	Carbon Tetrachloride
38	Benzyl Chloride	79	Carbophenothion
39	Benzyl Cyanide	80	Cellulose Nitrate
40	Beryllium (Powders, Compounds)	81	Chlorates (used in explosives)
41	Biphenyl	82	Chlordane
83	Chlorfenvinphos	132	Demeton
84	Chlorinated Benzenes	133	Di-Isobutyl Peroxide
85	Chlorine	134	Di-n-propyl Peroxydicarbonate
86	Chlorine Dioxide	135	Di-sec-Butyl Peroxydicarbonate

87	Chlorine Oxide	136	Dialifos
88	Chlorine Trifluoride	137	Diazodinitrophenol
89	Chlormequat Chloride	138	Diazomethane
90	Chloroacetal Chloride	139	Dibenzyl Peroxydicarbonate
91	Chloroacetaldehyde	140	Dichloroacetylene -O
92	Chloroaniline,-2	141	Dichlorobenzene -O
93	Chloroaniline.-4	142	Dichlorobenezene - P
94	Chlorobenzene	143	Dichloroethane
95	Chlorodiphenyl	144	Dichloroethyl Ether
96	Chloroepoxypropane	145	Dichlorophenol,-2,4
97	Chloroethanol	146	Dichlorophenol, -2, 6
98	Chloroethyl Chloroformate	147	Dichlorophenoxy Acetic Acid -2,4 (2,4-D)
99	Chlorofluorocarbons	148	Dichloropropane - 1,2
100	Chloroform	149	Dichlorosalicylic Acid. -3,5
101	Chloroformyl,-4, Morpholine	150	Dichlorvon (DDVP)
102	Chloromethane	151	Dicrotophon
103	Chloromethyl Ether	152	Dieldrin
104	Chloromethyl Methy Ether	153	Diepoxybutane
105	Chloronitrobenzene	154	Diethyl Peroxydicarbonate
106	Chloroprene	155	Diethylene Glycol Dinitrate
107	Chlorosulphonic Acid	156	Diethylene Triamine
108	Chlorotrinitrobenzene	157	Diethyleneglycol Butyl Ether/ Diethyleneglycol Butyl Acetate
109	Chloroxuron	158	Diethylenetriamine (DETA)
110	Chromium and Compounds	159	Diglycidyl Ether
111	Cobalt and Compounds	160	Dihydroperoxypropane, -2,2
112	Copper and Compounds	161	Di-isobutyryl Peroxide
113	Coumafuryl	162	Dimefox
114	Comaphos	163	Dimethoate
115	Coumatetralyl	164	Dimethyl Phosphoramidocyanidic Acid
116	Crenola	165	Dimethyl Phthalate
117	Crimidine	166	Dimethyl Carbomyl
118	Cumene	167	Dimethylnitrosamine
119	Cyanophos	168	Dinitriophenol, Salts
120	Cyanothoate	169	Dinitrotoluene
121	Cyanuric Fluoride	170	Dinitro-o-Cresol
122	Cyclohexane	171	Dioxane
123	Cyclohexanol	172	Dioxathion
124	Cyclohexanone	173	Dioxolane
125	Cyclohexamide	174	Diphacinone
126	Cyclopentadiene	175	Diphonsoramide Octamethyl
127	Cyclopentane	176	Dipropylene Glycolmethylether
128	Cyclotetramethylen tetranitramine	177	Disulfoton
129	Cyclotrimethylene trinitramine	220	Hexavalent Chromium
130	DDT	221	Hydrazine
131	Decabromodiphenyl Oxide	222	Hydrazine Nitrate
178	endosulfan	223	Hydrochloric Acid
179	Endrin	224	Hydrogen
180	Epichlorohydrin	225	Hydrogen Bromide (Hydrobromic Acid)
181	EPN	226	Hydrogen Chloride (liquefied Gas)
182	Epoxypropane,1,2		
183	Ethion		
184	Ethy Carbamate		
185	Ethyl Ether		

186	Ethyl Hexanol, -2	227	Hydrogen Cyanide
187	Ethyl Mercaptan	228	Hydrogen Fluoride
188	Ethyl Methacrylate	229	Hydrogen Selenide
189	Ethyl Nitrate	230	Hydrogen Sulphide
190	Ethylamine	231	Hydroquinone
191	Ethylene	232	Iodine
192	Ethylene Chlorohydrine	233	Isobenzan
193	Ethylene Diamine	234	Isodrin
194	Ethylene Dibromide	235	Isophorone Di-isocyanate
195	Ethylene Dichloride	236	Isopropyl Ether
196	Ethylene Glycol Dinitrate	237	Juglone (5-hydroxynaphthalene-1, 4-Dione)
197	Ethylene Oxide	238	Lead (inorganic fumes & dusts)
198	Ethyleneimine	239	Lead 2, 4, 6-Trinitroresorcinoxide (Lead Styphnate)
199	Ethylthiocyanate	240	Lead Azide
200	Fensulphothion	241	Leptophos
201	Fluenetil	242	Lindane
202	Fluoro-4, -2-Hydroxybutyrix Acid and Salts, Esters, Amides.	243	Liquified Petroleum Gas(LPG)
203	Fluoroacetic Acid and Salts, Esters, Amides	244	Maleic Anhydride
204	4,Fluorobutyric Acid, , Salts, Esters, Amides	245	Manganese & Compounds
205	4-Fluorocortonic Acid, Salts, Esters, Amides.	246	Mercapte Benzothiazole
206	Formaldehyde	247	Mercury Alkyl
207	Glyconitrite (hydroxyacetonitrile)	248	Mercury Fulminate
208	Guanyl -1, -4Nitrosaminoguanyl-1-Tetrazene	249	Mercury Methyl
209	Heptachlor	250	Methacrylic Anhydride
210	Hexachloro Cyclopentadiene	251	Methacrylonitrite
211	Hexachlorocyclohexane	252	Methyacyloyl Chloride
212	Hexachlorocyclomethane	253	Methamidophos
213	Hexachlorodibenzo-p-Dioxin 1, 2, 3, 7, 8, 9	254	Methanesuphonyl Fluoride
214	Hexafluoropropene	255	Methanthiol
215	Hexamethyl Phosphoramide	256	Methoxy Ethanol (2-Methyl Cellosolve)
216	Hexamethyl 3, 3, 6, 9, 9-1, 2, 4, 5-Tetraoxacylononane	257	Methoxyethylmercuric Acetate
217	Hexamethylendiamine	258	Methyl Acrylate
218	Hexane -	259	Methyl Alcohol
219	Hexanitrostibene 2, 2, 4, 4, 6, 6	260	Methyl Amylketone
265	Methyl ethyl Ketone Peroxide	261	Methyl Bromide (Bromomethane)
266	Methyl Hydrazine	262	Methyl Chloride
267	Methyl Isobutyl Ketone	263	Methyl Chloroform
268	Methyl Isocyanate Ketone Peroxide	264	Methyl Cyclohexane
269	Methyl Isocyanate	310	Oxydisulfoton
270	Methyl isothiocyanate	311	Oxygen (liquid)
271	Methyl Mercaptan	312	Oxygen Difluoride
272	Methyl Methacrylate	313	Ozone
273	Methyl Parathion	314	Paraxon (diethyl 4-Nitrophenyl Phosphate)
274	Methyl Phosphonic Dichloride	315	Paraquat
275	-N,Methyl,2,4,6-Tetranitroaniline	316	Parathion
276	Methylene Chloride	317	Parathion Methyl
		318	Paris green (bis Aceto Hexametarsen ito Tetracopper)
		319	Pentaborane

277	-4,4, Methylenebis (2,-Chloroaniline)	320	Pentabromodiphenyl Oxide
278	Methyltrichlorosilane	321	Pentabromophenol
279	Mevinphos	322	Pentachloro Napthalene
280	Molybdenum & compounds	323	Pentachloroethane
281	N-Methyl-N, 2, 4, 6-tetranitroanilline	324	Pentachlorophenol
282	Naphtha (Coal Tar)	325	Pentaerythritol Tetranitrate
283	Nephtylamine, 2	326	Pentane
284	Nickel & Compounds	327	Peracetic Acid
285	Nickel Tetracarbonyl	328	Perchloroethylene
286	Nitroaniline - 0	329	Perchloroethylene Mercaptan
287	Nitroaniline -P	330	2 Petanone,4-Methyl
288	Nitrobenzene	331	Phenol
289	Nitrochlorobenzene - P	332	Phenyl Glycidal Ether
290	Nitrocyclohexane	333	Phenylene P-Diamine
291	Nitroethane	334	Phenylmercury Acetate
292	Nitrogen Dioxide	335	Phorate
293	Nitrogen Oxides,	336	Phosacetim
294	Nitrogen Trifluoride	337	Phosalone
295	Nitroglycerine	338	Phosfolan
296	Nitrophenol-P	339	Phosgene (carbonyl chloride)
297	Nitropropane -1	340	Phosmet
298	Nitropropane -2	341	Phosphamidon
299	Nitrosodimethylamine	342	Phosphine (Hydrogen Phosphide)
300	Nitrotoluene	343	Phosphoric Acid and Esters
301	Octabromophenyl Oxide	344	Phosphoric Acid, bromoethyl Bromo (2,2-Dimethylpropyl) Bromoethyl Ester
302	Oleum	345	Phosphoric Acid, Bromoethyl Bromo (2,2-Dimethylpropyl ) Chloroethyl Ester
303	Oleylamine	346	Phosphoric Acid Chloroethyl Bromo (2, 2-Dimethylpropyl Chloroethyl Ester
304	00-Diethyl S-Ethylsulphonylmethyl	347	Phosphorous & Compounds
305	00-Diethyl- S-Ethylsulphonylmethyl Phosphorothioate	348	Phostalan
306	00-Diethyl-S-Ethylthiomethyl Phosphorothioate	349	Picric Acid (2,4,6-Trinitrophenol)
307	00-Diethyl-S-Isoprophylthiomethyl Phosphorodithioate	350	Polybrominated Biphenyls
308	00-Diethyl-S-propylthiomethyl Phosphorodithioate	393	Toluene 2, 6- Diisocyanate
309	Oxyamyl	394	Trans-1 4-Chlorobutene
351	Potassium Arsenite	395	1-Tri (cyclohexyl) Stannyl-1, H-1 2,4- Triazole
352	Potassium Chlorate	396	Triamino 1,3,5, -2,4,6- Trintrobenzene
353	Promurit (-1(3, 4- Dichlorophenyl)- trizenethiocarboxamide)	397	2,4,6Tribromophenol,
354	Propannensultone 1, 3	398	Trichloro Acetyl Chloride
355	1-Propen,-2Chloro-1, 3-Diol Diacetate	399	Trichloro Ethane
356	Propylene Oxide	400	Trichloro Napthalene
357	Proyleneimine	401	Trichloro(Chloromethyl) silane
358	Pryazoxon	402	Trichlorodichlorophenylnilane
359	Selenium Hexafluoride	403	Trichloroethane 1,1,1
360	Semicarbazide Hydrochloride	404	Trichlorethyl Silane
361	Sodium Arsenite	405	Trichloroethylene
362	Sodium Azide	406	Trichloromethanesulphenyl7Chloride
363	Sodium Chlorate		
364	Sodium Cyanide		
365	Sodium Picramate		

366	Sodium Selenite	407	Trichlorophenol 2,2 6
367	Styrene, 1,1,3, 2-Tetrachloroethane	408	Trichlorophenol, -2,4,5
368	Sulfotep	409	Triethylamine
369	Sulphur dichloride	410	Triethylenemelamine
370	Sulphur Dioxide	411	Trimethyl Chlorosilane
371	Sulphur Trioxide	412	Trimethylopropane Phosphite
372	Sulphuric Acid	413	Trinitroaniline
373	Sulphoxide, 3 Chloropropyloctyl	414	Trinitroanisole 2,2,4,6
374	Tellurium	415	Trinitrobenzene
375	Tellurium Hexafluoride	416	Trinitrobenzoic Acid
376	Tepp	417	Trinitrocresol
377	Terbufon	418	Trinitrophenetole 2,5,6
378	Tetrabromo Bisphenol-A	419	Trinitroresorcinol, 2,4,6 (Styphnic Acid)
379	Tetrachloro, 2,2,5,6, ,2, 5-Cyclohexadiene-1,4-Dione	420	Trinitrotoluene
380	Tetrachlorodibenzo-p 2,3,7,8 Dioxin, (TCDD)	421	Trinitrocresyl Phosphate
381	Tetracthyl Lead	422	Triphenyltin Chloride
382	Tetrafluoroethane	423	Turpentine
383	Tetramethylenedisulphotetramine	424	Uranium & Compounds
384	Tetramethyl Lead	425	Vanadium & Compounds
385	Tetranitromethane	426	Vinyl Chloride
386	Thallium & Compounds	427	Vinyl Fluoride
387	Thionazin	428	Vinyl Toluene
388	Thinoyl Chloride	429	Warfarin
389	Tirpate	430	Xylene
390	Toluene	431	Xylidine
391	Toluene-2-4 Disocyanate	432	Zinc & Compounds
392	Toluidine -0	433	Zirconium & compounds

**“SCHEDULE – 2”**

**[ (See Rule 2(a)(ii), 2(C), 4 (1)(b), 6 (1) (c ) and ( d ) ]**

- (a) The threshold quantities set out below relate to each installations or group of installations belonging to the same occupier where the distance between installations is not sufficient to avoid, in foreseeable circumstances, any aggravation of major accident hazards. These threshold quantities apply in any case to each group of installations belonging to the same occupier where the distance between the installations is less than 500 metres.
- (b) For the purpose of determining the threshold quantity of hazardous chemical at an isolated storage, account shall also be taken of any hazardous chemical which is:-
- (i) In that part of any pipeline under the control of the occupier having control of the site, which is within 500 metres of that site and connected to it.
  - (ii) At any other site under the control of the same occupier any part of the boundary of which is within 500 metres of the said site; and
  - (iii) In any vehicle, vessel, aircraft or hovercraft under the control of the same occupier which is used for storage purpose either at the site or within 500 metres of it; but no account shall be taken of any hazardous chemical which is in a vehicle, vessel, aircraft or hovercraft used for transporting it

Sr. of No.	Chemicals	Threshold Quantities (tonnes)	
		For application of Rules 4,5,7 & 8	For application Rules 10 to 15
(1)	(2)	(3)	(4)
1.	Acrylonitrile	350.000	5,000.000
2.	Ammonia	60.000	600.000
3.	Ammonium nitrate (a)	350.000	2,500.000
4.	Ammonium nitrate fertilizers(b)	1,250.000	10,000.000
5.	Chlorine	10.000	25.000
6.	Flammable gases as defined in Schedule 1. paragraph (b)(i)	50.000	3,000.000
7.	Highly flammable liquids as defined in Schedule 1 Paragraph (b)(ii)	10,000.000	10,000.000
8.	Liquid oxygen	200.000	2,000.000
9.	Sodium, Chlorate	25.000	250.000
10.	Sulphur dioxide	20.000	500.000
11.	Sulphur trioxide	15.000	100.000
12.	Carbonyl chloride	0.750	0.750
13.	Hydrogen Sulphide	5.000	50.000
14.	Hydrogen Fluoride	5.000	50.000

15.	Hydrogen cyanide	5.000	20.000
16.	Carbon disulphide	20.000	200.000
17.	Bromine	50.000	500.000
18.	Ethylene oxide	5.000	501.000
19.	Propylene Oxide	5.000	50.000
20.	2-Propenal (Acrolein)	20.000	200.000
21.	Bromomethane (Methyl bromide)	20.000	200.000
22.	Methyl Isocyanate	0.150	0.150
23.	Tetraethyl lead or tetramethyl lead	5.000	50.000
24.	1, 2 Dibromoethane (Ethylene dibromide)	5.000	50.000
25.	Hydrogen chloride(liquefied gas)	25.000	250.000
26.	Diphenyl methane di-isocyanate (MDI)	20.000	200.000
27.	Toluene di-isocyanate(TDI)	10.000	100.000

**FOOT NOTES:**

- (a) This applies to ammonium nitrates and mixtures of ammonium nitrate where the nitrogen content derived from the ammonium nitrate is greater than 28 per cent by weight and to aqueous solutions of ammonium nitrate where the concentration of ammonium Nitrate is greater than 90 per cent by weight.
- (b) This applies to straight ammonium nitrate fertilizer and to compound fertilizers where the nitrogen content derived from the ammonium nitrate is greater than 28 per cent by weight (a compound fertilizer contains ammonium nitrate together with phosphate and/or potash)

### **“SCHEDULE – 3”**

**[ see rules 2(a) (iii), 6 (1) (a) and (b) ]**

- (a) The quantities set-out-below relate to each installation or group of installations belonging to the same occupier where the distance between the installation is not sufficient to avoid, in foreseeable circumstances, any aggravation of major accident hazards. These quantities apply in any case to each group of installations belonging to the same occupier where the distance between the installations is less than 500metres.
- (b) For the purpose of determining the threshold quantity of a hazardous chemical in an industrial installation, account shall also be taken of any hazardous chemicals which is :-
  - (i) In the part of any pipeline under the control of the occupier having control of the site, which is within 500 metres off that site and connected to it;
  - (ii) At any other site under the control of the same occupier any part of the boundary of which is within 500 metres of the said site, and
  - (iii) In any vehicle, vessel aircraft or hovercraft under the control of the same occupier which is used for storage purpose either at the site or within 500 metres of it;

But no account shall be taken of any hazardous chemical which is in a vehicle, vessel, aircraft or hovercraft used to transporting it.

**Part 1 NAMED CHEMICALS**

Sr. No.	Chemicals	For application of Rules 5, 7, 8 13 and 15	For application of Rules 10 to 12	CAS* Numbers
1	2	3	4	5
	<b>Group 1–Toxic Chemicals</b>			
1	Aldicarb	100 kg		116-06-3
2	4-Aminodiphenyl	1 kg		92-67-1
3	Amiton	1 kg		78-53-5
4	Anabasine	100 kg		494-52-0
5	Arsenic pentoxide, Arsenic (v) acid & Salts	500 kg		
6	Arsenic trioxide			
	Arsenious (III) acid and salts	100 kg		
7	Arsenic (Arsenic hydride)	10 kg		7784
42-1				
8	Azinphos -ethyl	100 kg		2642-71-
9				
9	Azinphos-methyl	100 kg		86-50-0
10	Benzidine	1 kg		92-87-5
11	Benzidine Salts	1 kg		
12	Beryllium (powders, compounds)	10 kg		
13	Bis (2-chloroethyl) sulphide	1 kg		505-
60-2				
14	Bis-(chloro Methyl) ether	1 kg		542-88-1
15	Carbofuran	100 kg		1563-66-
21				
16	Carbophenothion	100 kg		786-19-6
17	Chlorfenvinphos	100 kg		470-90-6
18	4 (Chloroformyl) morpholine	1 kg		15159-
10-7				
19	Chloromethyl methyl ether	1 kg		107-30-2
20	Cobalt metal, oxides, carbonates, sulphides, as powders	1 T		
21	Crimidine	100 kg		535-89-7
22	Cyanthoate	100 kg		3734-95-
0				
23	Cycloheximide	100 kg		66-81-9
24	Demeton	100 kg		8065-48-
3				
25	Dialifos	100 kg		10311-
84-9				
26	00-Diethyl	100 kg		2588-05-
8				
	S- ethylsulphinyl methyl Phosphorothioate			
27	00-Diethyl	100 kg		2588-06-

9

S- ethylsulphonyl methyl  
Phosphorothioate

28 00-Diethyl

100 kg

2600-69-

3

S- ethylthiomethyl methyl  
Phosphorodithioate

29	00-Diethyl S- isopropylthiomethyl Phosphorodithioate	100 kg		78-52-4
30 0	00-Diethyl S-propylthiomethyl phosphorothioate	100 kg		3309-68-
31	Dimefox	100 kg		115-26-4
32	Dimethycarbamoyl chloride	1 kg		79-44-7
33	Dimethylnitrosamine	1 kg		62-75-9
34	Dimethyl	1 T		63917-
41-9	Phosphoramidocyanidic acid			
35	Diphacinone	100 kg		82-66-6
36	Disulfoton	100 kg		298-04-4
37	EPN	100 kg		2104-64-
5				
38	Ethion	100 kg		563-12-2
39	Fensulfothion	100 kg		115-90-2
40	Fluometil	100 kg		4301-50-
2				
41	Fluoroacetic acid	1 kg		144-49-0
42	Fluoroacetic acid, salts	1 kg		
43	Fluoroacetic acid, esters	1 kg		
44	Fluoroacetic acid, amides	1 kg		
45	4 Fluorobutyric acid	1 kg		462-23-7
46	4 Fluorobutyric acid, salts	1 kg		
47	4 Fluorobutyric acid, esters	1 kg		
48	4 Fluorobutyric acid, amides	1 kg		
49	4-Fluorocrotonic acid	1 kg		37759-
72-1				
50-	4-Fluorocrotonic acid,salts	1 kg		
51	4-Fluorocrotonic acid,esters	1 kg		
52	4-Fluorocrotonic acid amides	1 kg		
53	4-Fluoro-2-hydroxybutyric acid	1 kg		
54	4-Fluoro-2-hydroxybutyric acid, salts	1 kg		
55	4-Fluoro-2-hydroxybutyric acid esters	1 kg		
56	4-Fluoro-2-hydroxybutyric acids, amides	1 kg		
57	Glycolonitrile (hydroxyacetonitrile)	1 kg		107-16-4

58	1, 2, 3, 7, 8-9-Hexachlorodibenzo 74-3 -p-dioxin	100 kg		19408-
59	Hexamethylphosphoramide	1 kg		680-31-9
60	Hydrogen selenide	10 kg		7783-07-5
61	Isobenzan	100 kg		297-78-9
62	Isodrin	100 kg		465-73-6
63	Juglone (5-Hydroxy- <del>naphthalene-1,4-dione</del> )	100 kg		481-39-0
64	4, 4'-Methylenebis (2-chloroaniline)	10 kg		101-14-4
65	Methyl isocyanate	150 kg	150 kg	624-83-9
66	Mevinphos	100 kg		7786-34-7
67	2-Nephthylamine	1 kg		91-59-8
68	Nickel Metal, oxides, carbonates, sulphides, as powders	1 T		
69	Nickel tetracarbonyl	10 kg		13463-39-3
70	Oxydisulfoton	100 kg		2497-07-6
71	Oxygen difluoride	10 kg		7783-41-7
72	Paraoxon (diethyl 4-nitrophenyl phosphate)	100 kg		311-45-5
73	Parathion	100 kg		56—38-2
74	Parathion-methyl	100 kg		298-00-0
75	Pentaborane	100 kg		19624-22-7
76	Phorate	100 kg	100 kg	298-02-2
77	Phosacetim	100 kg		4104-14-7
78	Phosgene (carbonyl chloride)	750 kg	750 kg	75-44-5
79	Phosphamidon	100 kg		13171-21-6
80	Phosphone (Hydrogen phosphide)	100 kg		7803-51-2
81	Promurit (1-(3,4,-Dischlorophenyl)- 3 triazenethio Carboxamide)	100 kg		5836-73-7
82	1- 3- Propanesultone	1 kg		1120-71-4
83	1-propen –2chloro –1, 72-6 3-diol diacetate	10 kg		10118-
84	Pyrazoxon	100 kg		108-34-9
85	Selenium hexafluoride	10 kg		7783-79-

1			
86	Sodium Selenite	100 kg	10102-
18-8			
87	Stibine (Antimony hydride)	100 kg	7803-52-
3			
88	Sulfotop	100 kg	3689-24-
5			
89	Sulphur dichloride	1 T	10545-
99-0			
90	Tellurium hexafluoride	100 kg	7783-80-
4			
91	TEPP	100 kg	107-49-3
92	2, 3, 7, 8-Tetrachlorodibenzo-	1 kg	1746-01-
6			
	p-dioxin (TCDD)		
93	Tetramethylenedisulphotetramine	1 kg	80-12-6
94	Thionazin	100 kg	297-97-2
95	Tirpate (2, 4-Dimethyl-1,	100 kg	26419-
73-8			
	3-dithiolane- 2 Carboxaldehyde- 0-methylcarbomoyloxime)		
96	Trichloromethane sulphenyl chloride	100 kg	594-42-3
97	1-Tri- (Cyclohexyl) stannyl-1H –	100 kg	41083-
11-8			
	1, 2, 4-triazole		
98	Triethylenemelamine	10 kg	51-18-3

**Group 2-Toxic chemicals**

<b>Quantity &gt;1 tonne</b>				
99	Warfarine	100 kg		81-81-2
100	Acetone cyanohydrin (2-Cyanopropan-2-Ol)	200 T		75-86-5
101	Acrolein (2-Propenal)	20 T		107-02-8
102	Acrylonitrile	20 T	200 T	107-13-1
103	Allyl alcohol (2propen-1-Ol)	200 T		107-18-6
104	Allylamine	200 T		107-11-9
105	Ammonia	50 T	500 T	7664-41-
7				
106	Bromine	40 T		7726-95-
6				
107	Carbon disulphide	20 T	200 T	75-15-0
108	Chlorine	10 T	25 T	7782-50-
5				
109	Diphenyl methane di-isocyanate (MDI)	20 T		101-68-8
110	Ethylene dibromide (1, 2-Dibromomethane)	5 T		106-93-4
111	Ethyleneimine	50 T		151-56-4

112	Formaldehyde (Concentration >= 90%)	5 T		50-00-0
113	Hydrogen chloride (liquefied gas)	25 T	250 T	7647-01-0
114	Hydrogen cyanide	5 T	20 T	74-90-8
115	Hydrogen fluoride	5 T	50 T	7664-39-3
116	Hydrogen sulphide	5 T	50 T	7783-06-4
117	Methyl bromide (Bromomethane)	20 T		74-83-9
118	Nitrogen oxides	50 T		11104-93-1
119	Propyleneimine	50 T		75-55-8
120	Sulphur dioxide	20 T		7446-09-5
121	Sulphur trioxide	15 T	75 T	7446-11-9
122	Tetraethyl lead	5 T		78-00-2
123	Tetramethyl lead	5 T		75-74-1
124	Toluene di-isocyanate (TDI)	10 T		584-84-9

**Group 3-Highly reactive chemicals**

125	Acetylene (ethyne)	5 T		74-86-2
126	a. Ammonium nitrate (1)	350 T	2500 T	6484-52-2
126	b. Ammonium nitrate in the form of fertiliser (2)	1.250 T		
127	2,2-Bis (tert-butyl-peroxy)butane (concentration >= 70%)	5 T		2167-23-9
128	1,1-Bis ( tert -butyl-peroxy)cyclo-	5 T		3006-86-8

129	hexane (concentration >= 80%) tert – Butyl peroxyacetate (concentration >= 70%)	5 T		107-71-7
130	tert – Butyl peroxyisobutyrate (concentration >= 80%)	5 T		109-13-7
131	tert – Butyl peroxyisopropyl carbonate (concentration >= 80%)	5 T		2372-21-6
132	tert – Butyl peroxy maleate (concentration >= 80%)	5 T		1931-60-0
133	tert-Butyl peroxy pivalate (concentration >= 77%)	50 T		927-07-1
134	Dibenzyl peroxydicarbonate (concentration >= 90%)	5 T		2144-45-8

135	Di-Sec-butyl peroxydicarbonate 65-7 (concentration >= 80%)	5 T		19910-
136	Diethyl peroxydicarbonate 78-5 (concentration >= 30%)	5 T		14666-
137	2,2-Dihydroperoxypropane 8 (concentration >= 30%)	5 T		2614-76-
138	Di-isobutryl peroxide 7 (concentration >= 50%)	50 T		3437-84-
139	Di-n-propyl peroxydicarbonate 38-9 (concentration >= 80%)	5 T		16066-
140	Ethylene oxide	5 T	50 T	75-21-8
141	Ethyl nitrate	50 T		625-58-1
142	3,3,6,6,9, 9 – Hexamethyl –1,2,4 33-7 5-tetroxacyclonane (concentration >= 75%)	50 T	50 T	22397-
143	Hydrogen 0	2 T	50 T	1333-74-
144	Liquid oxygen 7	200 T		7782-44-
145	Methyl ethyl ketone peroxide 4 (Concentration >= 60%)	5 T	5 T	1338-23-
146	Methyl isobutyl ketone peroxide 20-5 (Concentration >= 60%)	50 T		37206-
147	Peracetic acid (Concentration >= 60%)	50 T		79-21.0
148	Propylene oxide	5 T	5 T	75-56-9
149	Sodium chlorate 9	25 T		7775-09-

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**Group 4 Explosive Chemicals**

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150	Barium azide 58-7	50 T		18810-
151	Bis (2, 4, 6-trinitophenyl) amine	50 T		131-73-7
152	Chlorotrinitrobenzene 61-9	50 T		28260-
153	Cellulose nitrate (Containing >12.6% nitrogen) 0	50 T		9004-70-
154	Cyclotetramethylene tertranitramine	50 T		2691-41-
155	Cyclotrimethylenetri	50 T		121-82-4

Nitroamine			
156	Diazodinitrophenol 3	10 T	7008-81-
157	Diethylene glycol dinitrate	10 T	693-21-0
158	Dinitrophenol salts	50 T	
159	Ethylene glycol dinitrate	10 T	628-96-6
160	1-Guanyl-4-4- nitrosamineoguanyl-1-tetrazene	10 T	109-27-3
161	2, 2', 4, 4', 6, 6' -Hexanitrostilbene 22-0	50 T	20062-
162	Hydrazine nitrate 97-6	50 T	13464-
163	Lead azide 46-9	50 T	13424-
164	Lead styphnate (lead 2,4, 44-0 6-trinitroresorcinoxide	50 T	15245-
165	Mercury fulminate	10 T	628-86-4
166	N Methyl-N,2,4 6-tetranitroaniline	50 T	479-45-8
167	Nitroglycerine	10 T	10 T 55-63-0
168	Pentaerythritol tetranitrate	50 T	78-11-5
169	Picric acid 2,4,6-Trinitrophenol)	50 T	88-89-1
170	Sodium picramate	50 T	831-52-7
171	Styphnic acid (2,4,6-Trinitroresorcinol	50 T	82-71-3
172	1,3,5-Triamino-2,4,6 trinitrobenzene 6	50 T	3058-38-
173	Trinitroaniline 42-1	50 T	26952-
174	2,4,6-Trinitroanisole	50 T	606-35-9
175	Trinitrobenzene 32-6	50 T	25377-
176	Trinitrobenzoic acid 50-5	50 T	35860-
177	Trinitroresol 71-7	50 T	28905-
178	2,4,6- Trinitrophenetole 3	50 T	4732-14-
179	2, 4, 6-trinitrotoluene	50 T	50 T 118-96-7

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**Part –II CLASSES OF CHEMICALS NOT SPECIFICALLY NAMED IN PART-I**

Sr. No.	Classes of chemicals	THRESHOLD QUANTITIES	
		For application of Rules 5,7, 8, 13 & 15	For application of Rules 10 to 12
1	2	3	4
	<p><b>Group-5-Flammable Chemicals</b></p> <p>1. <b>Flammable gases:</b> Chemicals which in gaseous state at normal pressure and mixed with air become flammable and the boiling point of which at normal pressure is 20 degree C or below:</p> <p>2. <b>Highly flammable liquids:</b> Chemicals which have a flash point lower than 23 degree C and the boiling point of which at normal pressure is above 20 degree C;</p> <p>3. <b>Flammable liquids:</b> Chemicals which have a flash point lower than 65 degree C and which remain liquid under pressure, where particular processing conditions, such as high pressure and high temperature, may create major accident hazards.</p>	<p>15 T</p> <p>1000 T</p> <p>25 T</p>	<p>200 T</p> <p>50,000 T</p> <p>200 T</p>

**FOOT NOTES:**

- 1) This applies to ammonium nitrate and mixtures of ammonium nitrate where the nitrogen content derived from the ammonium nitrate is greater than 28% by weight and aqueous solutions of ammonium nitrate where the concentration of ammonium nitrate is greater than 90% by weight.
- 2) This applies to straight ammonium fertilisers and to compound fertilisers where the nitrogen content derived from the ammonium nitrate is greater than 28% by weight (a compound fertiliser contain ammonium nitrate together with phosphate and /or potash).

\* CAS Number (Chemical Abstracts Service Number) means the number assigned to the chemical by a Chemical Abstracts Service.

**“SCHEDULE - 4”**

**(See rule 2 (b)(i))**

(1) Factories involving in production, processing or treatment of organic or inorganic chemicals using for this purpose, among others:

- (a) alkylation
- (b) amination by amination
- (c) carbonylation
- (d) condensation
- (e) dehydrogenation
- (f) esterification
- (g) halogenation & manufacture of halogens
- (h) hydrogenation
- (i) hydrolysis
- (j) oxidation
- (k) polymerization
- (l) sulphonation
- (m) desulphurization, manufacture and transformation of sulphur-containing compounds
- (n) nitration and manufacture of nitrogen-containing compounds.
- (o) manufacture of phosphorous-containing compounds
- (p) formulation of pesticides and of pharmaceutical products
- (q) distillation
- (r) extraction
- (s) solvation
- (t) mixing

(2) Factories involving in distillation, refining or other processing of petroleum or petroleum products.

(3) Factories involving in total or partial disposal of solid or liquid chemicals by incineration or chemical decomposition.

(4) Factories involving in production, processing or treatment of energy gases, for example LPG, LNG, SNG.

(5) Factories involving in dry distillation of coal or lignite

(6) Factories involving in production of metals or non-metals by a wet process or by means of electrical energy.

**“SCHEDULE – 5”**

**[(see rule 3(2) and (3) ]  
Form of material safety data sheet**

**1. CHEMICAL IDENTITY**

<b>Chemical Name</b>	<b>Chemical Classification</b>	
<b>Synonyms</b>	<b>Trade Name</b>	
<b>Formula</b>	<b>C.A.S.No.</b>	<b>U.N. No:</b>

Shipping Name  
Codes/Label

Hazchem No:

Regulated identification

Hazardous Waste

I.D. No.

<b>Hazardous ingredients</b>	<b>C.A.S. No.</b>	<b>Hazardous ingredients</b>	<b>C.A.S. No.</b>
1.		3.	
2.		4.	

*2. Physical and Chemical Data*

Boiling Range/Point <sup>0</sup> C	Physical State	Appearance
Melting/Freezing Point <sup>0</sup> C	Vapour pressure at 35 <sup>0</sup> C mm Hg	Odour
Vapour Density (Air=1)	Solubility in water at 30 <sup>0</sup> C	Others

### 3. FIRE AND EXPLOSION HAZARD DATA

Flammability Yes/No.	LEL	% Flash point oC“	Autoignition °C Temperature
TDG Flammability	UEL	% Flash point oC	Hazardous Combustion Products
Explosion Sensitivity To impact		Explosion sensi- tivity to static electricity	
Hazardous Polymerisation			
Combustible liquid	Explosive Material	Corrosive material	
Flammable material	Oxidiser others		
Pyrophoric Material	Organic Peroxide		

### 4. REACTIVITY DATA

Chemical Stability
Incompatibility With other material
Reactivity
Hazardous Reaction Products

### 5. HEALTH HAZARD DATA

Routes of Entry				
Effects of Exposure/Symptoms				
Emergency Treatment				
TLV (ACGIH)	Ppm/mg/m <sup>3</sup>	STEL	Ppm mg/m <sup>3</sup>	
Permissible Exposure Limit LD 50	Ppm mg/m <sup>3</sup>	Odour Threshold LD 50	Ppm/mg/m <sup>3</sup>	
NEPA Hazard Signals	Health	Flammability	Stability	Special

### 6. PREVENTIVE MEASURES

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Personnel  
Protective  
Equipment

---

Handling and  
Storage  
Precautions

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## 7. EMERGENCY AND FIRST AID MEASURE

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FIRE  
FIRE

FIRE EXTINGUISHING MEDIA  
Special procedure  
Unusual Hazards

---

EXPOSURE

First Aid Measures  
Antidotes/Dosages

---

SPILLS

Steps to be taken  
Waste disposal Method

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## 8. ADDITIONAL INFORMATION/REFERENCES

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## 9. MANUFACTURER/SUPPLIER DATA

Name of firm Mailing address Telephone/telex Nos. Telegraphic Address	Contact person In Emergency
	Local bodies Involved
	Standard Packing
	Tremcard Details/Ref.
	Other

## 10. DISCALIMER

Information contained in this material data sheet is believed to be reliable but no representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. It is upto the manufacturer/seller to ensure that the information contained in the material safety data is relevant to the products manufactured/handled or sold by him as the

case may be. The Govt. makes no warranties expressed or implied in respect of the adequacy of this document for any particular purpose.

**“SCHEDULE - 6”**

[(See rule 5 (1)]

**Information to be furnished regarding Notification of a major accident**

Report Number  
Of the particular accident.

(1) General data

- (a) Name of the site
- (b) Name and address of the occupier  
(Also state the telephone/telex Number)
- (c) (i) Registration Number  
  
(ii) Licence Number  
(As may have been allotted under any statute applicable to the site, e.g. the  
Factories Act)
- (d) (i) Nature of industrial activity (mention what is actually manufactured ,  
stored, etc.,  
  
(ii) National industrial classification 1987 at the four digit level

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(2) Type of major accident

Explosion	<input style="width: 40px; height: 25px;" type="checkbox"/>	Fire	<input style="width: 40px; height: 25px;" type="checkbox"/>	Emission of Hazardous Chemicals	<input style="width: 40px; height: 25px;" type="checkbox"/>
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(3) Description of the major accident

- (a) Date, shift and hour of the accident
- (b) Department/Section and exact place  
Where the accident took place.
- (c) The process/operation undertaken  
In the department/section where the  
Accident took place  
(Attach a flow chart, if necessary)
- (d) The circumstances of the accident  
And the hazardous chemical involved

(4) Emergency measures taken and  
measures envisaged to be taken to  
alleviate short-term effects of the accident

(5) Causes of the major accident  
Known (to be specified)

Not known

Information will be supplied  
As soon as possible.

(6) Nature and extent of damage

- (a) Within the establishment
  - casualties ..... killed  
 ..... injured  
 ..... poisoned
  - persons exposed to the major accident .....
  - material damage .....
  - damage is still present .....
  - damage no longer exists .....
- (b) Outside the establishment
  - casualties ..... killed  
 ..... injured  
 ..... poisoned
  - persons exposed to the major accident
  - material damage
  - damage to environment
  - damage is still present
  - danger no longer exists

(7) Data available for assessing the effects of the accident on persons and environment

(8) Steps already taken or envisaged

- a) To alleviate medium or long term effects of the accident
- b) To prevent recurrence of similar major accident
- c) Any other relevant information

**“SCHEDULE - 7”**

[(See rule 7(1) ]

**Information to be furnished for the Notification of site**

Particulars to be included in a Notification of site-

- (1) The name and address of the occupier making the notification
- (2) The full postal address of the site where the notifiable industrial; activity will be carried on.
- (3) The area of the site covered by the notification and of any adjacent site which is required to be taken into account by virtue of Schedule 2(b) and Schedule 3 (b)

- (4) The date on which it is anticipated that the notifiable industrial activity will commence or if it has already commenced a statement to that effect.
- (5) The name and maximum quantity liable to be on the site of each hazardous chemical for which notification is being made.
- (6) Organisation structure, namely organisation diagram for the proposed industrial activity and set up for ensuring safety and health
- (7) Information relating to the potential for major accidents, namely-
  - (a) Identification of major accident hazards;
  - (b) The condition of events which could be significant in bringing one about;
  - (c) A brief description of the measures taken.
- (8) Information relating to the site namely-
  - (a) A map of the site and its surrounding area to a scale large enough to show any feature that may be significant in the assessment of the hazard or risk associated with the site;
    - (i) area likely to be affected by the major accident
    - (ii) Population distribution in the vicinity
  - (b) a scale plan of the site showing the location and quantity of all significant inventories of the hazardous chemicals;
  - (c) a description of the processes or storages involving the hazardous chemicals, the maximum amount of such a hazardous chemical in the given process or storage and an indication of the conditions under which it is normally held;
  - (d) the maximum number of persons likely to be present on site.
- (9) The arrangement for training of workers and equipment necessary to ensure safety of such workers”.

**“SCHEDULE – 8”**

[(See rule 10(1)]

**Information to be furnished in a safety report**

- (1) The name and address of the person furnishing the information
- (2) Description of the Industrial activity, namely-
  - (a) Site
  - (b) Construction design
  - (c) Protection zones (explosion, protection, separation distances),
  - (d) Accessibility of plant

- (e) Maximum number of persons working on the site and particularly of those persons exposed to the hazard
- (3) Description of the processes, namely-
- (a) technical purpose of the industrial activity.
  - (b) basic principles of the technological process
  - (c) process and safety-related data for the individual process stages.
  - (d) process description
  - (e) safety-related types of utilities
- (4) Description of the hazardous chemicals, namely-
- (a) chemicals (quantities, substance data on physical and chemical properties, safety-related data on explosive limits, flash-point, thermal stability, toxicological data and threshold limit value, (ethal concentrations)
  - (b) the form in which the chemicals may occur or into which they may be transformed in the event of abnormal conditions.
  - (c) the degree of purity of the hazardous chemical
- (5) Information on the Preliminary hazard Analysis namely-
- (a) type of accident
  - (b) system elements or foreseen events that can lead to a major accident.
  - (c) hazards
  - (d) safety-relevant components
- (6) Description of safety-relevant units, among others
- (a) special design criteria
  - (b) controls and alarms
  - (c) pressure relief systems.
  - (d) Quick-acting valves
  - (e) Collecting tanks-dump tanks.
  - (f) Sprinkler systems.
  - (g) Fire protection.
- (7) Information on the hazard assessment, namely-
- (a) Identification of hazards
  - (b) The causes of major accidents
  - (c) assessment of hazards according to their occurrence frequency
  - (d) assessment of accident consequences
  - (e) safety system
  - (f) known accident history.
- (8) Description of information on organisational systems used to carry on industrial

activity safely, namely

- (a) Maintenance and inspection schedules,
  - (b) Guidelines for the training of personnel,
  - (c) Allocation and delegation of responsibility for plant safety.
  - (d) Implementation of safety procedures
- (9) Information on assessment of the consequences of major accidents, namely-
- (a) Assessment of the possible release of hazardous chemicals or of energy
  - (b) Possible dispersion of released chemical
  - (c) Assessment of the effects of the releases (size of the affected area, health effects, property damage)
- (10) Information on the mitigation of major accidents namely-
- (a) Fire brigade
  - (b) Alarm system;
  - (c) Emergency plan consisting system of organisation used to fight the emergency, the alarm and the communication routes, guidelines for fighting the emergency, examples of possible accident sequences
  - (d) Coordination with the District Collector or the District Emergency Authority and its off-site emergency plan.
  - (e) Notification of the nature and scope of the hazard to the event of an accident
  - (f) Antidotes in the event of a release of a hazardous chemical.

**“SCHEDULE - 8A”**

**[(See rule 13(1)]**

**Details to be furnished in the on-site Emergency Plan**

- (1) Name and address of the persons furnishing the information
- (2) Key personnel of the organisation and responsibilities assigned to them in case of an emergency
- (3) Outside organisation if involved in assisting during on-site emergency
  - (a) Type of accidents.
  - (b) Responsibility assigned
- (4) Details of liaison arrangement between the organisation
- (5) Information on the preliminary hazard analysis
  - (a) Type of accident
  - (b) System elements or events that can lead to a major accident
  - (c) Hazards
  - (d) Safety relevant components
- (6) Details about the site
  - (a) Location of dangerous substances.
  - (b) Seat of key personnel
  - (c) Emergency control room
- (7) Description of hazardous chemicals at plant site
  - (a) Chemicals (Quantities and toxicological data)
  - (b) Transformation if any which could occur
  - (c) Purity of hazardous chemicals.
- (8) Likely dangers to the plan
- (9) Enumerate effects of:
  - (i) Stress And strain caused during normal operation
  - (ii) Fire and explosion inside the plant and effect if any, of fire and explosion out side.
- (10) Details regarding
  - (i) warning, alarm & safety and security systems.
  - (ii) alarm and hazard control plans in line with disaster control and hazard control planning, ensuring the necessary technical and organisational

- precautions;
- (iii) Reliable measuring instruments, control units and servicing of such equipments
  - (iv) Precautions in designing of the foundation and load bearing parts of the building.
  - (v) Continuous surveillance of operation;
  - (vi) Maintenance and repair work according to the generally recognised rules of good engineering practices;
- (11) Details of communication facilities available during emergency and those required for an off-site emergency.
- (12) Details of fire fighting and other facilities available and those required for an off-site emergency.
- (13) Details of first aid and hospital services available and its adequacy