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भाग 3 (ख)

सरकार द्वारा या किसी अन्य प्राधिकारी द्वारा अपनी सहज शक्तियों के प्रयोग में, बनाये जाने को प्रस्तावित प्रारूप नियम, आनियम, उप-नियम और आज्ञायें।

LABOUR DEPARTMENT

NOTIFICATION

Jaipur, January 8, 1991

No. F. 4(3) Shram/88.—In exercise of powers conferred by section 112 of the Factories Act, 1948 (Central Act 63 of 1948) the state Government hereby makes the following Rules further to amend the Rajasthan Factories Rules, 1951, the same having been previously published in Rajasthan Gazette, part 3 (Kh), dated 9 December, 1988 as required by section 115 of the said Act namely:—

RULES

1. **Short title.**—These rules may be called the Rajasthan Factories (Amendment) Rules, 1990.

2. Clause (J) of rule (2) of the Rajasthan Factories Rules, 1951 hereinafter called the said rules, shall be deleted.

3. After rule 2 of the said rules, the following new rule shall be added, namely:—

"2A. **Competent Person.**—(1) The Chief Inspector may recognise any person as a 'competent person' within such area and for such period as may be specified for the purposes of carrying out tests, examinations, inspections and certification for such buildings, dangerous machinery hoists and lifts, lifting machines 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 possess the qualifications, experience and other requirements as get 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 recognise 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 recognised, shall not have powers of an 'Inspector':

Provided further that the 'competent person' recognised under this provision shall be physically fit for the purpose of carrying out the tests. examination and inspection.

(2) The Chief Inspector may recognise an institution of repute, having persons, possessing qualifications and experience as set out in the schedule annexed to sub-rule (1) for the purpose of carrying out tests, examinations, inspections and certification for buildings, dangerous machinery, hoists and lifts, lifting machines, 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, 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 the prescribed form from a person or an institution intending to be recognised 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 recognise the applicant as a 'competent person' and issue a certificate of competency in the prescribed form or reject the application specifying the reasons therefore.

(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 carried out a test, examination and inspection or has acted in the manner inconsistent with the intent or the purpose of this Act or the Rules made thereunder or has omitted to act as required under the Act and 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 as organisation.

(5) Any person aggrieved by an order of the Chief Inspector under sub-rule 3 and 4 may appeal within a period of 30 days of the date of the orders. After giving him an opportunity of hearing the State Government may dispose of the appeal.

(6) 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.

Form of Application for grant of Certificate of Competency to a person under sub-rule (2) of Rule 2A.

1. Name
2. Date of Birth
3. Name of the organisation (if not self-employed)
4. Designation
5. Educational qualification (Copies of testimonials to be attached).
6. Details of professional experience (in Chronological order)

Name of the Organisation	period of Service	Designation	Area of Responsibility

7. Membership, if any, of professional bodies.
8. (i) Details of facilities (examination, testing etc.) at his disposal.
   (ii) Arrangements for calibrating and maintaining the accuracy of these facilities.
9. Purpose for which competency certificate is sought (section or sections of the Act should be stated).
10. whether the applicant has been declared as a competent person under any statute (if so, the details).
11. Any other relevant information.
12. Declaration by the applicant.

I....., hereby declare that the information furnished above is true. I undertake:

(a) that in the event of 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 peridically as per manufactures 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 of the applicant.

DECLARATION 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 addition or deletion).

Signature————

Dated : Designation————

Telephone No.

Official Seal

Form of Application for grant of Certificate of Competency to an Institution under Sub-Rule (2) of Rule 2A.

1. Name & full address of the Organisation.
2. Organisations status.
   (Specify Whether Government. Autonomous Co-operative, Corporate or Private).
3. Purpose for which competency Certificate is sought (specify section (2) of the Act).
4. Whether the organisation has been declared as a competent person 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 the Rule 2A.

S. No.	Name and Designation	Qualifications	Experience	Section (2) and the Rules under which competency is sougnt for
1.				
2.				

6. Details of facilities (relevant to item 3 above) and arrangements made for their maintenance and calibration periodically.

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, calibrated periodically as per manufacturers instructions 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 Head of the Institution or of the persons authorised to Sign on his behalf

Designation.

Form of Certification of Competency issued to a person or an institution in pursuance of Rule 2A made under section 2 (ca) read with Section.....

I,....., in exercise of the powers conferred on me under Section 2 (ca) of the Factories Act and the rules made thereunder, hereby recognise.....

(Name of the Institution)

or Shri ....

(Name of the person)

employed in .... to be a
(Name of the organisation)

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 system 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 the words not applicable).

This certificate is valid from..... to.....

This certificate is issued subject to the conditions stipulated hereunder:—

(i) Tests, examinations and inspections shall be carried out in accordance with the provisions of the Act and the rules made thereunder;

(ii) Tests, examinations and inspections shall be carried out under direct supervision of the competent person or by a person so authorised by an institution recognised to be a competent person;

(iii) The certificate of competency issued in favour of a person shall stand cancelled if the person leaves the organisation mentioned in his application;

(iv) The institution recognised as a competent person shall keep the Chief Inspector informed of the names, designations and qualifications of the persons authorised by it to carry out tests, examinations and inspections.

(v)

(vi)

Station Signature of the

Official Seal Chief

Date Inspector.

NOTE : A separate certificate should be issued unner each relevant section-A person or and institution may be recognised competent for the purpose of more than one section of the Act

SCHEDULE

S. No.	Section or rule 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.	(*i*) A minimum of 10 years experience in the design of construction or testing or repair of structure ; (*ii*) Knowledge of nondestructive testing, various codes of practice that are current and the effect of the vibrations and natural forces on the stability of the building ; and (*iii*) Ability to arrive at a reliable conclusion with regard to the safety of the structure or the buildings.	
2.	Rules made under Section 21(2)-"Dangerous Machines".	Degree in Electrical or Mechanical or Textile Engineering or equivalent.	(*i*) A minimum of 7 years experience in– (*a*) The design or operation or maintenance ; or (*b*) Testing, examination and inspection or relevent machinery, their guards, safety devices and appliances.	Gauges for measurement Instruments for measurement of speed and any other equipment or device to determine the safety in the use of the dangerous machines.

			(*ii*) He shall— (*a*) be conversant with safety devices and their proper functioning ; (*b*) be able to identify defects and any other cause leading to failure ; and (c) have ability to arrive at a reliable conclusion with regard to the proper functioning of the safety device and appliance and machine guard.	
3.	Section 28-Lifts and Hoists	A degree in Electrical and or Mechanical Engineering or its equivalent.	(*i*) A minimum experience of 7 years in— (*a*) design or erection or maintenance or (*b*) inspection and test procedure of lifts and hoists (*ii*) He shall be— (*a*) Conversant with relevent codes of practices and test procedure that are current ; (*b*) Conversant with other statutory requirements covering the safety of the Hoists & Lifts;	Facilities for load testing, tensile testing, gauges equipments/gadgets for measurement and any other equipment required for determining the safe working conditions of Hoists and Lifts.

1	2	3	4	5
			(*c*) able to identify defects and arrive at a reliable conclusion with regard to the safety of the Hoists and Lifts.	
4.	Section 29—Lifting Machinery and Lifting Tackles.	Degree in Mechanical or Electrical or Matallurgical 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 machanies and metallurgy of the material of construction (c) conversant with heat treatment/stress relieving techniques as applicable to stress bearing components and	Facilities for load testing tensile testing, heat treatment, equipment/gadget for measurement, gauges and such other equipment to determine the safe working conditions of the lifting machinery tackle.

			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.	
5.	Section 31—'Pressure Plant'	Degree in Chemical or Electrical or Metallurgical or Mechanical Engineering or its equivalent.	(*i*) A minimum experience of 10 years in — (*a*) design or erection or maintenance, or (*b*) testing, examination and inspection of pressure plants. (*ii*) He shall be— (*a*) conversant with the relevent codes of practices and test procedures relating to pressure vessels ; (*b*) conversant with statutory requirements concerning the safety of unfired pressure vessels and equipment operating under pressure: (c) conversant with non-destructive testing techniques	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.

1	2	3	4	5
			as are applicable to pressure vessels; (*d*) able to identify defects and arrive at a reliable conclusion with regatrd to the safety of the pressure plant.	
6.	(*i*) Section 35 – Precautions against dangerous fumes. (*ii*) Rule made under sections 41 & 112 concerning ship building and ship Repairs.	Master's degree in chemistry or a degree in chemical Engineering.	(*i*) A minimum of 7 years in collection & analysis of environmental samples and calibration of monitoring equipment; (*ii*) He shall– (*a*) be conversant with the hazardous properties of chemical and their premissible limit values (*b*) be conversant with the current techniques of sampling and analysis of the environmental contaminants; and (*c*) be able to arrive at a reliable conclusion as regards the safety in respect of entering and carrying out hot work.	Meters, instruemnts and devices duly calibrate d and certified for carrying out the tests and certification of safety in working in confined spaces.

7. Ventilation systems as required under various schedules framed under section 87, such as schedules on—	Degree in Mechanical or Electrical Engineering or equivalent.	(*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.	Facilities for testing the ventilation system, instruments and gauges for testing the effectivenes of the extraction system for dusts, vapours and fumes and any other equipment needed for determining the efficiency and adequacy of these system.
(*i*) Grinding or glazing of metals and processess incidental thereto		(*ii*) He shall be conversant with relevent codes of practice and test procedures that are current in respect of ventilation and a traction system for fumes, and shall be able to arrive at a reliable conclusion with regard to effectiveness of the system.	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.
(*ii*) Clerning or smoothing, roughening etc. of ariticles, by a jets sand, metal shot, or grit of other abrasive propelled by a blast of compressed air of steam.			
(*iii*) Handling and processing of Asbestos.			
(*iv*) Manufacture of Ray on by viscose process.			
(*v*) Foundry operations."			

4. After the existing Rule 3B of the said rule, the following new rule shall be added, namely:—

"3C. **Certificate of Stability.**—(1) 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 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.

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.....

I certify that I have inspected the building/buildings the plants 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 machine, plant etc., that have been installed, I am of the opinion that the building/buildings which has/have been constructed/reconstructed/extended tanken 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/there stability will not be endangered by its/their use as a factory/part of a factory for manufacture of.....for which the mechinery, plant, etc. installed are intended.

Signature.....

Qualifications.....

Address.....

Dated.....

If employed by a company or association name and address of the company of association.

(2) The certificate of stability referred to in sub-rule (1) shall be signed by a competent person".

5. After the existing Rule 12A of the said rule, the following new rule shall be added, namely:—

"12B. **Guidelines instructions 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."

6. For the existing Rule 17 of the said rules, the following shall be substituted, namely:—

"17. **Disposal of Trade Wastes and Effluents.**—The arrangements made in every factory for the treatment of wastes and effluents due to the manufacturing processes carried on therein shall be in accordance with those approved by the relevant Water And Air pollution Boards appointed under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 and other appropriate authorities".

7. The existing rule 29 of the said rules shall be deleted.

8. In rule 32 of the said rules, for the figures and word "29 to 31" the figures and word "30 and 31" shall be substituted.

9. The existing rule 33 of the said rules shall be deleted.

10. After the existing proviso to clause (d) of rule 39 of the said rules, the following proviso shall be added, namely:—

"Provided further that the distance between the place of work of any workers shall not be more than 50 meter from the nearest water centre or any distance as may be specified by the Inspector".

11. After sub-rule 'e' of rule 39 of the said rule, the following new sub-rule shall be added namely:—

"The means of supply of cooled drinking water shall be either directly through taps connected to water colers or any other system for cooling of water, or by means of vessels receptacles or tanks fitted with taps and having dust proof covers and places or raised stands or plateforms in shade, and having suitable arrangement of drainage to carry the spilt water. Such vessels, receptacles or tanks shall be kept clean and the water renewed atleast once every day."

12. For the existing schedule I of rule 53 of the said rules, the following shall be substituted namely:—

"SCHEDULE—I"

Textile Machinery except Machinery used in Jute Mills.

1. **Application.**—The requirement 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 factorits engaged exclusively in the manufacture of synthetic fibres.

2. **Definations.**—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 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 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, defer, 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 combine fibres of cotton, wool, etc. The essential parts are device for feeding forward a fringe of fibres at regular intervals and an arrangements 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) "Combined machinery" means a general classification of machinery including combers, silver lap machines, ribbon lap machines, and gillboxes, 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 lickering one or more cylinders, each having a competent worker and stripper rolls, and a fancy roll and deffer. The action of such machines is some-what like that

a wool card, but it is much more severe in that the various rolls are covered with garnett wire instead of a 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 prevent the setting in motion of a dangerous part of a machine or the machine itself while the guard cover or door provided to safeguard 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 boilted 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 strengthened as much as possible.

(n) "Sliver lapper" means a machine or a part of a machine in which a number of parallel card slivers 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 warp beam and pass through handles and reeds. The filling is shot across in a shuttle and settled in place by veeds 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 calender 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 pickers waste cleaners, thread extractors, shredding machines, roving waste openers, shoddy pickers, blade, breakers, feeders, vertical opener, lattice cleaners, horizontal cleaners, and any similar machinery equipped with either cylinders screen section, calender section, rolls, or beaters used for the preparation of stock for further processing.

(u) "Paddler" means through for the solution and two or more squeeze rolls between which cloth passes after being passed through a mordant or dye bath.

(v) "Plaiting machines" means a machine used to lay cloth into folds of regular length for convenience 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 through) a furnisher rollers, doctor blades, etc. The machine is used for printing fabrics.

(x) "Continuous bleaching range" means a machine for bleaching of cloth in rope of open-width form with the 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 scoring 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 wasing and scouring. The whole set up is in straight line and all parts operate continuously. The combination is used to saturate the cloth with sodium hydrozide, 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, woolen 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 streched condition as it curves around 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 from one to six such rollers on a machine.

(bb) "Singling machine" means a machine which comprises of a heated roller, plate, or an open gas flame. The cloth or yarn in 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 cylinderical 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) "Warper" means a machine for preparing and arranging the yarns intended for the warp of a fabric, specifically, a beam warper.

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 of an equivalent positive looking 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 of 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 or openings giving access to any dangerous part of the machinery shall be provided with interlocking 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 opening may be so fenced by guards which prevent access to any such dangerous part and which is either kept positively locked in position or fixed in such 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 covers which shall prevent access to the nip at the in take 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 untill the cover guard is closed:

Provided that the foregoing provision shall not apply to the machine equipped with automatic lap forming devices:

Provided futher 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 untill the cylinder has ceased to revolve and shall render it impossible to restart the machine untill the door has been closed :

Provided that the latter equipment 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 in 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 pully of the machine or to dismantle the interlocking mechanism. Such an arrangement shall be used only for stripping or grinding operations.

6. **Garnet Machine.**—(1) Garnet lickerins shall be enclosed.

(2) Garnet 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 o screen mesh or other form of enclosures to prevent access.

7. **Cill 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 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 room nip Point	Maximum width of Opening
0 to 38 mm	6 mm
39 to 63 mm	10 mm
64 to 88 mm	13 mm
89 to 140 mm	15 mm
141 to 165 mm	19 mm
166 to 190 mm	22 mm
191 to 215 mm	32 mm

8. **Sliver and Ribbon Lapper (Cotton).**—The Calender drums and the lap spool shall be provided with a guard to prevent access to the nip between the in-running rolls:

9. **Speed Frames.**—Jack box wheels at the head stock shall be guarded and the guard shall have inter-locking arrangement:

10. **Spinning mules.**—Wheel on spinning mule carriages shall be provided with substantial wheel guard, extending to within 6mm of the rails:

11. **Warpers.**—Swiveled double-bar gates shall be installed on all warpers operating in excess of 410 meters/min. These gates shall have inter-locking 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 meters high from the floor or working plateform, and the gate shall be located 38 mm from the vertical tengment to the beam head.

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

(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 buttons located on both sides of the machine at the size box and the delivery end. If calender rolls are used, additional buttons shall be provided at both sides of the machine at point near the nips except when slashers are equipped with an enclosed dryer as in paragraph(b).

(2) **Enclosed hot air dryer.**—(a) All open nips of the top squeezing rollers shall be guarded by nip guard 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 meters on centres.

13. **Looms.**—(1) Each loom shall be equipped with suitable guards designed to minimise the danger from flying shuttles.

(2) Beam weights for tension in beam shall be of such construction so as to prevent it falling during its adjustment:

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 over flow or speash; are so located that the operator can not 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 mm.

16. Continuous bleaching range (cotton and rayon) The nip of all in-running rolls of open-width bleaching machine rolls shall be protected with a guard to prevent the workers 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 evice shall be provided at each end of the machine.

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

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

18. **Tendet 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 running rolls.

20. **Centrifugal extractors.**—(1) Each extractor shall be provided with a guard for the basket, and the guard shall have interlocking arrangement.

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

21. Squeezer of wringer extractor, water mangle, starch mangle, back washer (worsted yarn) crabbing machine, 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.**—(i) NIP guard 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. It shall operat readily whether pushed or pulled. The safety trip shall not be more than 170 cm. above the level at which the operator stands and shall be readly 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 not be more than 170 cm. above the level on which the operator stands and shall be readlly 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 interlocking 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 iuter door on the case or shell from being open without shutting of 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 machanism or an inching device.

(2) Each closed barrel 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 shell 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 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 guard.

29. **Hand baling 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 be 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 of 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 plateform to the top of guard shall be not less than 1.83 meters.

(13) After Schedule IV of sub-rule (2) of rule 53 of the said rules, the following schedules V, VI & VII shall be added namely:—

SCHEDULE—V

Centrifugal Machines

1. **Definition.**—"Centrifugal machines" include centrifugal extractors, separators and driers.

2. Every part of centrifugal machine shall be—

(a) of good designe 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 of 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 should be such that no access is possible to the drum of 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 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 provided 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 manufacturers 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—VI

POWER PRESS

1. **Application.**—The schedule shall apply to all types of power presses including press brakes, except when used for working hot metal.

2. **Definition.**—For the purpose of this Schedule—

(a) "approved" means approved by the Chief Inspector;

(b) "fixed fencing" means fencing provided for the tools of a power press being fencing which has no moving part associated with or dependent upon the mechanism of a power and includes that part of a closed tool which acts as a guard;

(c) "Power press" means a machine used in metal or other industries for moulding, pressing, blanking, raising, drawing and similar purposes;

(d) "safety device" means the fencing and any other safeguard provided for the tools of a power press.

3. **Starting and stopping mechanism.**—The starting and stopping mechanism shall be provided with safety stop so as to prevent over running of the press or descent of the ram during tool setting etc.

4. **Protection of tool and die.**—(1) Each press shall be provided with a fixed guard with a slip plate on the underside enclosing the front and all sides of the tool.

(2) Each die shall be provided with a fixed guard surrounding its front and sides, and extending to the back in the form of a tunnel through which the pressed article falls to the rear of the press.

(3) The design, contruction and mutual position of the guards referred to in (1) and (2) shall be such as to proclude the possibility of the workers hand or fingers reaching the danger zone.

(4) The machine shall be fed through a small aperture at the bottom of the die guard, but a wider aperture may be permitted for second or subsequent operations if feeding is done trough a chute.

(5) Notwithstanding anything contained in sub-clauses (1) and (2) an automatic or an inter-locked guards may be used in place of a fixed guard, but where such guards are used they shall be maintained in an efficient working condition and if any guard develops a defect, the power press shall not be operated unless the defect of the guard is removed.

(6) **Appointment of persons to Prepare power presses for use.**—(1) Except as provided in sub-paragraph (4), no person shall set, re-set, adjust or try out the tools on a power press or install or adjust any safety device thereon, being installation or adjustment preparatory to production of die proving, or carry out an inspection and test of any safety device thereon required by paragraph 8 unless he—

(a) has attained the age of eighteen;

(b) has been trained in accordance with the sub-paragraph (2); and

(c) has been appointed by the occupier of the factory to carry out these duties in respect of the class or description of power press or the class or description of safety device to which the power press or the safety devices (as the case may be) belongs; and the name of every such person shall be entered in a register in Form 9.

(2) The training shall include suitable and sufficient practical instruction in the matters in relation to each type of power press and safety device in respect of which it is proposed to appoint the person being trained.

6. **Examination and testing of power presses and safety devices.**—(1) No power press or safety device shall be taken into use in any factory for the first time in that factory, or in case of a safety device for the first time on any power press, unless it has been thoroughly examined and tested, in the case of a power press, after installation in the factory, or in the case of a safety device, when in position on the power press in connection with which it is to be used.

(2) No power press shall be used unless it has been thoroughly examined and tested by a competent person within the immediately proceeding period of twelve months.

(3) No power press shall be unless every safety device (other than fixed fencing) thereon has within the immediately proceeding period of six months when in position on that power press, been thoroughly examined and tested by a competent person.

(4) The competent person carrying out an examination and test under the foregoing provisions shall make a report of the examination and test containing the following particulars and every such report shall be kept readily available for inspection :

(a) name of the occupier of the factory;

(b) address of the factory;

(c) identification number or mark sufficient to identify the power press or the safety device;

(d) date on which the power press or the safety device was first taken into use in the factory;

(e) the date of each periodical thorough examination carried out as per requirements of sub-paragraph (2) above;

(f) particulars of any defects affecting the safety working of the power press or the safety device found at any such thorough examination and steps taken to remedy such defects.

7. **Defects disclosed during a thorough examination and tests.**—(1) Where any defect is disclosed in any power press or in any safety device by any examination and test under paragraph 6 and in the opinion of the competent person carrying out the examination and test, either—

(a) the said defect is a cause of danger to workers and in consequence the power press ir safety device (as the case may be) ought not to be used until the said defect has been remedied; or

(b) the said defect may become a cause of danger to workers and in consequence the power press or safety device (as the case may be) ought not to be used after the expiration of a specified period unless the said defect has been remedied.

Such defect shall, as soon as possible after the completion of the examination and test, be notified in writing by the competent person to the occupier of the factory and, in the case of a defect falling within clause (b) of this sub-paragraph such notification shall include the period within which, in the opinion of the competent person, the defect ought to be remedied.

(2) In every case where notification has been given under this paragraph, a copy of the report made under paragraph 6 (4) shall be sent by the competent person to the inspector for the area within fourteen days of the completion of the examination and test.

(3) Where any such defect is notified to the occupier in accordance with the foregoing provisions of this paragraph the power press or safety device (as the case may be)

having the said defect shall not be used:—

(a) in the case of a defect falling within clause (a) of sub-paragraph (1), until the said defect has been remedied; and

(b) in the case of defect falling within clause (b) of sub-paragraph (1), after the expiration of the said defect has been remedied.

(4) As soon as is practicable after any defect of which notification has been given under sub-paragraph (1) has been remedied, a record shall be made by or on behalf of the occupier stating the measures by which and the date on which the defect was remedied.

8. **Inspection and test of safety devices:**—(1) No power press shall be used after setting, resetting or adjustment of the tools there on unless a person appointed or authorised for the purpose under paragraph 5 has inspected and tested every safety device thereon while it is in position on the said power press:

Provided that an inspection, test and certificate as aforesaid, shall not be required where any adjustment of the tools has not caused or resulted in any alteration to or disturbance of any safety device on the power press and if, after the adjustment of the tools, the Safety devices remain, in the opinion of such as a person as aforesaid; in efficient working order.

(2) Every power press and every safety devices thereon while it is in position on the said power press shall be inspected and tested by a trained person everyday.

9. **Defect disclosed during an inspection and test:**—(1) Where it appears to any person as a result of any inspection and test carried out by him under paragraph 8 that any necessary safety device is not in position or is not properly in position on a power press or that any safety device which is in position on a power press is not in his opinion suitable, he shall notify the manager forthwith :

(2) Except as provided in sub-paragraph (3) where any defect is disclosed in a safety device by any inspection and test under paragraph 8, the person carrying out the inspection, and test shall notify the manager forthwith.

(3) Where any defect in a safety device is the subject of a notification in writing under paragraph 7 by virtue of which the use of the safety device may be continued during a specified period without the said defect having been remedied, the requirement in sub-paragraph (2) of this paragraph shall not apply the said defect until the said period has expired.

10. **Identification of power presses and safety devices:**—For the purpose of identification every power press and every safety device provided for the same shall be distinctively and plainly marked.

11. **Training and instructions to operators:**—The operators shall be trained and instructed in the safe method of work before starting work on any power press.

12. **Exemptions:**—(1) If in respect of any factory, the Chief Inspector is satisfied that owing to the circumstances or in frequency of the processes or for any other reason, all or any of the provisions of this Schedule are not necessary for the protection of the workers employed in any power press or any class or description of power press or in the factory the Chief Inspector may by a certificate in writing (which he may in his descretion 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.

(2) Where such exemption is granted, a legible copy of the certificate, showing the condition (if any) subject to which it has been granted, shall be kept posted in the factory in a position where it may be conveniently read by the persons employed,"

SCHEDULE VII

Shears, Slitters and Guillotine Machines.

1. **Definition:**—For the purpose of this Schedule:—

(a) "Guillotines" means a machine ordinarily equipped with straight, bevel-edged blade operating vertically against a stationary resisting edge and used for cutting metallic or non-metallic substances;

(b) "Shears" or "Shearing machine" means a machine ordinarily equipped with straight bevel-edged blades operating vertically against resisting edges, or with rotary, overlapping cutting wheels, and used for shearing metals or non-metallic substances;

(c) "Slitter" or "Slitting machine" means a machine ordinarily equipped with circular disctype knives, and used for trimming or cutting into metal or non-metallic substances or for slitting them into narrow strips; for the purpose of this schedule, this term includes bread or other food slicers equipped with rotary knives or cutting discs.

2. **Guilloting and shears.**—(1) Where practicable, 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 authomatic device which will remove both the hands of the operator from the danger zone at every descent of the blade.

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

(3) Power-driven guillotine cutters, except continuous feed trimmers, shall be equipped with—

(a) Starting devices which require the simultaneous action of both hands to start the cutting motion and of at least one hand on a control during the complete stroke of the knife; or

(b) an automatic guard which will remove the hands of the operator from the danger zone at every descent of the blade, used in conjunction with one hand starting devices which require two distinct movements of the device to start the cutting motion, and so designed as to return positively to the non-starting position after each complete cycle of the knife.

(4) Where two or more workers are employed at the same time on the same power-driven guillotine cutter equipped with two-hand control, the device shall be so arranged that each workers shall be required to use both hands simultaneously on the safety trip to start the cutting motion, and at least one hand on a control to complete the cut.

(5) Power driven guillotine cutters, other than continuous trimmer, shall be provided, in addition to the brake or other stopping mechanism, with an emergency device which will prevent the machine from operating in the event of failure of the brake when the starting mechanism is in the non-starting position.

3. **Slitting Machines.**—(1) Circular disc-type knives on machines for cutting metal and leather, paper, rubber, textiles, or other non-metallic substances, shall, if within reach of operators standing on the floor or working level,

be provided with guards enclosing the knife edges at all times at near as practicable to the surface of the material, and which may either.—

(a) automatically adjust themselves to that thickness of the material; or

(b) be fixed or manually adjusted so that the space between the bottom of the guard and the material will not exceed 6 mm (1/4 In.) at any time.

(2) Portions of blades underneath the tables or benches of slitting machine shall be covered by guards.

4. **Index cutters and vertical paper slotters.**—Index cutters, and other machines for cutting strips from the ends of books, and for similar operations, shall be provided with fixed guards, so arranged that the fingers of the operators cannot come between the blades and the tables.

5. **Corner cutter.**—Corner cutters, used in the manufacture of paper boxes, shall be equipped with—

(a) Suitable guard, fastened to the machines in front of the knives and provided with slots or perforations to afford visibility of the operations: or

(b) Other guards eqally efficient for the protection of the fingers of the workers.

6. **Band knives.**—Band wheels on band knives, and all portion of the blades except the working side between the sliding guide and the table on vertical machines or between the wheel guards on horizontal machines, shall be completely enclosed with hinged guards of sheet metal not less than 1 mm. (0.04 in.) in thickness or of other material of equal strength."

14. **In sub-rule (5) of rule 57A of the said rules.**—For the expression "14 feets" the expression "24 feets" shall be substituted.

15. For the existing rule 63 of the said rules, the following shall be substituted, namely:—

"63. **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 building 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 should be located in building 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 conveyers and similar eqimpent involving serious fire risk shall be provided with flame arresting or automatic fire extinguishing appliances.

(e) In all work places having serious fire or flash fire hazards, passages, between machine, installation or piles of material should be atleast 90 cm. wide.

(2) **Access for firefighting.**—Buildings and Plants shall be so laid out and roads, passageways etc. so maintanied as to permit unobstructed access for fire fighting.

(3) **Protection against lighting**—Protection from lighting shall be provided for—

(i) building in which explosive or highly flammable substances are manufactured, used, handled or stored;

(ii) Storage tanks containing oils, paints, or other flammable liquids;

(iii) Grain elevators; and

(iv) Building, tall chimneys or stacks where flammable 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, 1984.

(5) **Precautions against ignition.**—Wherever there is danger of fire or explosion from accumulation of flammable 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 nail or any other exposed ferrous material which is likely to cause sparks by friction;

(d) Smoking, lighting or carrying of matches, lighters or smoking material shall be prohibited;

(e) transmission belts with iron fastners shall not be used; and

(f) all other precautions, as are reasonably praticiable, 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 radidant 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 dempness. Such cylinders shall never be stored near highly flammable substances, furnaces or hot processes. The room where such cylinders are stored shall have adequate ventilation.

(8) **Storage of flammable liquids.**—(a) The quantity of flammable liquids in any work room shall be the minimum required for the process or processes carried on in such room. Flammable liquids shall be stored in suitable containers with close fitting covers:

Provided that not more than 20 litres of flammable liquids having a flash point of 21°C or less shall be kept or stored in any work room.

(b) Flammable liquids shall be stored in closed containers and in limited quantities in well ventilated rooms of fire resisting construction which are Isolated from the remaining 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 flammable dust, gas, fume or vapour in air or flammable waste material on the floors.**—(a) Effective steps shall be taken for removal or prevention of the accumulation in the air of flammable dusts, gas, fume or vapour to an extent which is likely to be dangerous.

(b) No waste material of flammable 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 exit 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 sufficient exits 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, whatever artificial lighting is to be 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 funel or flue effect may be created inducing an upward spread of fire.

(h) All exits shall provide continuous means of egress 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 meters.

(j) In case of those factories where highly hazardous materials are stored or used, the travel distance to the exit shall not exceed 22.5 meters and there shall be at least two ways of escape from every room, however small, except toilet rooms, so located that the points of access thereto are out of or suitably shielded from areas of high hazard.

(k) Whereever fore than one exit is required for any room spact 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 exit 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 exits 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 escape 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 atleast two separate means of exits shall be available as remote from each other as practicable.

(q) Every storage area shall have access to atleast 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 egress.

(s) No exit doorway shall be less than 100 cm. in width, doorway shall be not less than 200 cm. in height.

(t) Exit doorways shall open outwards, 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. over head 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 atleast 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 therein 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 240 cms.

(y) Internal stairs shall be constructed of non-combustible material throughout.

(z) Internal stairs shall be constructed as a self-contained unit width atleast one side adjacent to an external wall and shall be completely enclosed.

(aa) A staircase shall not be arranged round a lift shaft unless the latter is totally enclosed by a material having a fire resistance rating not lower than that 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 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 or risers shall be limited to 12 per flight.

(ff) Hand rails shall be provided with a minimum height of 100 cm. 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 platforms such as balconies and terrices to allow escapes 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 same as for the exit doorways.

(ii) The horizontal exit shall be equipped with atleast 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 accomodate occupants of the floor areas served, allowing not less than 0.3 square metre per person. The refuge area shall be provided with exit 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 slopes shall be provided. For this purpose steps 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 requirement of staircase. For all slopes exceeding 1 in 10 and wherever the use in 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 story buildings where the entire area is undivided and all parts thereof are clearly visible to all occupants.

(ll) **First-aid fire fighting arrangements.**—(a) In every factory there shall be provided and maintained adequate and suitable fire fighting equipment for fighting fires in the early stages, those being referred to as first aid fire fighting equipment in this rule.

(b) The types of first-aid fire fighing equipments 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, textile, 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, carpentary shop, small timber yards, book binding shops, engineering workshop and the like;
3. "Extra hazard"—Occupancies like large timber yards, godowns storing fibrous materials, flour mills, cotton mills, jute mills, large wood working factories and the like;

(ii) "Class B fire"—Fire 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 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 type 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 buket pump) extinguishers 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 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) extinguishers 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 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 extinguishers specified here requirement 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 to 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 required a higher scale of portable equipment to be provided depending upon the risk involved.

(v) **Class E fire**—Carbon dioxide or dry powder type extinguishers shall be provided near each plant or group of plants depending upon the risk involved.

(d) The first aid fire fighting equipment shall conform to the relevent Indian Standards.

(e) As far as possible the first aid fire fighting equipment shall all be similar in shape and appearance 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 equipments 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 bucket shall be filled with clean dry and fine sand.

(h) All other extinguishers shall be charged appropriately in accordance with the instructions of the manufacturer.

following shall be substituted, namely:—

"12. **Medical facilities and record of examination and tests.**—(1) The occupier of every factory in which glass manufacturing processes are carried out, shall—

(a) employ a qualified medical practitioner who is in the opinion of the Chief Inspector capable for virtue of his qualification, training and experience, conducting a thorough medical check up against the hazards involved and to diagnose and treat the industrial diseases which are likely to creep in such type of processes; and

(b) provided to the said medical practitioner the necessary facilities for the purpose referred to in clause (a).

(2) The records 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."

(iii) After the paragraph 12 of the said schedule, the following paragraph shall be added, namely:—

"12A **Medical examination by Certifying Surgeon.**—(1) Every worker employed in processes specified in paragraph 2 shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include pulmonary function test and in suspected cases chest X-rays as well as test for lead in urine. No worker shall be allowed to work after 15 days of his first employment in the factory unless

Such re-examination shall, wherever the Certifying Surgeon considers appropriate, include tests specified in sub-paragraph-(1).

(3) The Certifying Surgeon after examining a worker, shall issue a certificate of fitness in Form No. 30. The record of examination and re-examinations carried out shall be entered in the Certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in the Form 19.

(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 the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a 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 person is unfit for work in the said processes.

(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 said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those process."

23. In Schedule IV of rule 100 of the said rules;

(i) Sub-paragraph (c) of paragraph 2 of the said schedule shall be deleted.

(ii) For the paragraph 12 of the said schedule, the

following shall be substituted, namely:—

"15. **Medical facilities and records of examinations and tests:**—The occupier of every factory in which manufacture and repair of electric accumulators is carried on shall—

(a) employ a qualified medical practitioner who is in the opinion of the Chief Inspector capable by virtue of his qualification, training and experience, conducting a thorough medical check up against the hazards likely to creep in such type of process; and

(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in separate registers approved by the Chief Inspector of Factories, which shall be kept readily available for Inspection by the Inspector:"

(iii) after the paragraph 15 of the said schedule the following paragraph shall be added, namely :

"15A. **Medical examination by Certifying Surgeons.**—(1) Every worker employed in lead processes shall be examined by the Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for lead in urine and blood, ALA in urine, haemoglobin content, stippling of cells and steadiness test. No worker shall be allowed to work after 15 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 three calendar months.

worker shall issue a certificate of Fitness in Form 30. The record of examination and re-examinations carried out 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 the Certifying Surgeon in health register in Form No. 19A.

(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 the opinion that a worker is no longer fit for employment in the said processes on the ground the continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of this 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.

(6) No person who has been found unfit to work as said in 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."

(iii) The existing paragraph 9 of the said schedule shall be deleted.

22. In Schedule III of rule 100 of the said rules:

(i) clause (c) of paragraph 2 of the said schedule shall be deleted.

(iii) for the paragraph 15 of the said schedule the

(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a); and

(c) maintain a sufficient supply of suitable ointment and impermeable water proof plaster in a separate box readily accessible to the workers and used solely for the purpose of keeping the ointment and the plaster.

(2) The medical practitioner shall examine all workers before they are employed in electrolytic chromo processes—Such examination shall include inspection of hands, fore arms and nose will be carried out at intervals of not more than one week.

(3) The record of the examination referred to in sub-paragraph (2) shall be maintained in a separate resisters approved by the Chief Inspector of Factories which shall be kept readily available for inspection by the inspector."

"7. **Medical examination by the certifying Surgeon.**—(1) Every worker employed in the electrolytic chrome process shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for Chromium in urine and nasal septum perforation. No worker shall be allowed to work after 15 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 three calendar months. Such re-examination shall, whenever the Certifying Surgeon considers appropriate, inclule tests as specified under sub-paragraphs (1).

(3) The Certifying Surgeon after examining a

be inserted, namely:—

"there shall be attached to it least one latering and urinal of sanitary type."

(iv) The words "or dispensary" appearing in sub-rule (3) shall be deleted.

20. In rule 75 of the said rules:—

(i) After clause (e) of the sub-rule (2) the following new clause shall be added, namely:—

"(f) suitable provisions shall be made in every room for supply of drinking water and facilities for washing".

(ii) after sub-rule (2), the following new sub-rule shall be added, namely:—

"(3) the lunch room shall—

(a) comply with the requirements laid down in clause (a) to (f) of sub-rule (2), and

(b) be provided with adequate number of tables with impervious tops for the use of workers for taking food."

21. **In schedule II of rule 100 of the said rules:—**

(i) The existing paragraph 1 (d) of said schedule shall be deleted.

(ii) The existing paragraphs 6 and 7 of the said schedule, the following paragraphs, shall be substituted, namely:—

6. **Medical facilities and records of examination and test.**—(1) The occupier of every factory in which electrolytic chrome processes are carried on shall—

(a) employ a qualified medical practitioner who is in the opinion of the Chief Inspector capable by virtue of his qualification, training and experience, conducting a thorough medical check up against the hazards involved and to diagnosis and treat the industrial disease which are likely to creep in such type of process.

Practice, or recommendations of International Bodies such as ILO and WHO."

19. In rule 68 of the said rules :

(i) For the existing sub-rule (2), the following shall be substituted, namely:—

(2) "Every ambulance room shall be under the charge of at least one whole time qualified medical practitioner (hereinafter referred to as medical officer) assisted by at least one qualified nurse or dresser-cum-compounder 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 the accidents, it is not necessary to employ a whole-time medical officer for each shift seperately, may, with the previous approval of the State 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, subjects to the conditions that:—

(a) there shall be no relaxation in respect of nursing staff; and

(b) the medical officer is readily available on call during the working hours of the factory.

(ii) after sub-rule (2), the following new sub-rules shall be added, namely:—

"(2A) no medical officer shall be required or permitted to do any work which is inconsistent with or detrimental to his responsibilities under this rule."

"(2B) There shall be displayed in the ambulance room a notice giving the name, address and telephone number of the medical practitioner incharge. The name of the nearest hospital and its telephone number shall also be mentioned prominently in the said notice."

(iii) In sub-rule (3) after the expression "natural and artificial means" the following expression shall

—Commissioner of Workers 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 uptodate health records including the record of workers exposure to hazardous process or, as the case may be, the medical records shall be supplied to the worker on receipt of an aplication from him, X-Ray plates and other medical diagonistic reports may also be made available for reference to his medical pactitioner."

"65-V. **Qualifications, etc. of Supervisors.**—(1) In every factory covered under rule 65QQ the 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 D.G. FASLI or the State Government in accordance with guidelines issued by the D.G. FASLI."

"65VV. **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 carrying on "hazardous process": Such guidelines may be based on National Standards, Codes of

nated with hazardous and corrosive substance: 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) Up to 50 workers	2
(ii) Between 51 to 200 workers	2+1 for every additional 50 or part thereof.
(iii) Between 201 to 500 workers	5+1 for every additional 100 or part thereof.
(iv) 501 workers and above	8+1 for every additional 200 or part thereof.

(c) A sufficient number of eye wash bottle filled with distilled water or suitable liquid, kept in boxees or cupboards conveniently suituated and clearly indicated by a distinctive sign which shall be visible at all times."

"65UU. **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 process or, as the case may be, the medical records of any workers or his perusal under the following conditions.—

(a) Once in every six months or immediately after the medical examination which ever is earlier;

(b) If the factory Medical Officer or the Certifying surgeon as the case may be, is of the opinion that the worker has manifested signs and symptoms of any notificable diseases 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 State Government;

(c) **Emergency Care equipments** :

(i) **Resuscitation** :

— Portable suction units, portable Oxygen units;

— Bag-valve-mask, hand operated articles/ventilation unit;

— Airways, mouth gages, Trechestomy adoptors,

— Short spine board, I. V. Fluids with administration unit;

— B. P. Manometer, Cugg, Stethoscope.

(ii) **Immobilization** :

— Long & short padded boards—wire ladder splints;

—Triangular bandage, Long and short spine boards.

(iii) **Dressings** :

— Gause pads 4"X4",-Universal dressing 10"X36";

— Roll of aluminium foils, soft roller-bandages 6"X5' yards; adhesive tape in 3" roll, safety pin,

— Bandage sheets, Burn sheet.

(iv) **Poisoning** :

—Syrup of Ipecac-Activated Charcoal pre packeted in doses, snake bite kit;

— Drinking water.

(v) **Emergency Medicines** :

— As per requirement (under the advice of medical officer only)."

"65 U. **Decontamination facilities**.—In every factory carrying out the 'hazardous process', the following provisions shall be made to meet any emergency:—

(a) Fully equipped first aid box;

(b) readily accessible means of water for washing by workers as well as for drenching the clothing of workers who have been contami-

(ii) Eight plain wooden splints 350 mm×75 mm × 6 mm.

(iii) Four plain wooden splints 250 mm×50 mm × 12 mm.

(iv) Two pairs artery forceps.

(v) Injections morphia, pethidine, atropine, adrenaline, caramine novacan (4 each).

(vi) Two pair surgical scissors."

"65TT. **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 purposes 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 upto 500 workers, may make arrangements for procuring such facility at short notice from a nearby hospital or other places, to meet any emergency.

(2) The Ambulance should have the following equipments:—

(a) **General** :

— A wheeled strecher with folding and adjusting devices with the head of the stretcher capable of being tilted upward;
— Fixed suction unit with equipment;
— Fixed Oxygen supply with equipment;
— Pillow with case, sheets, blankets, towels;
— Emesis bag, Bed pan, Urinals, Glass.

(b) **Safety equipments** :

— Flares with life of 30 minutes; flood lights;
— Flash lights, fire extinguisher dry powder type;
— Insulated gauntlets.

20. An adequate supply of tetanus toxied.
21. Coramine liquid (60 ml.).
22. Tablets—antihistaminic, antispasmodic (25 each).
23. Syringes with needles—2cc, 5cc and 10cc.
24. Two needle holders, big and small.
25. Suturing needles and materials.
26. One dissecting forceps.
27. One dressing forceps.
28. One scapels.
29. One stethescope.
30. Rubber bandage, Pressure bandage.
31. Oxygen Cylinder with necessary attachment.
32. One Blood Pressure apparatus.
33. One Patollar Hammer.
34. One stomach wash set.
35. Any other equipment recommended by the Factory Medical Officer according to specific need relating to manufacturing process.

36. One peak flow meter for lung function measurement.

37. In addition :

(1) For Factories employing 501 to 1000 workers:—

(i) Four plain wooden splints 900 mm×100 mm ×6 mm.

(ii) Four plain wooden splints 350 mm×75 mm ×6 mm.

(iii) Two plain wooden splints 250 mm×50 mm ×12 mm.

(iv) One pair artery forceps.

(v) Injections morphia, pethidine, atropine, adrenaline, caramine novacan (2 each).

(vi) One pair surgical scissors.

(2) For Factories employing above 1000 workers:—

(i) Eight plain wooden splints 900 mm×100 mm × 6 mm.

(ii) An Occupational Health Centre having at least 2 rooms each with a minimum floor area of 15 Sq. Mt. with floors and walls made of smooth and impervious surface and adequate illuminations and ventilation as well as equipment 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 Centre shall be suitably equipped to manage medical emergencies.

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 of size at least 180 cm × 105 cm.
3. Means for sterlizing instruments.
4. A couch.
5. Two buckets or containers with close fitting lids.
6. A kettle and spirit stove or other suitable means of boiling water.
7. One bottle of spritus ammoniac aronatious (120 ml.).
8. Two medium size sponges.
9. Two 'Kidney' trays.
10. Four cakes of toilet, preferably antiseptic soap.
11. Two glass tumblers and two wine glasses.
12. Two clinical thermometers.
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 Tourch.

Provided that:—

(i) a person possessing a Diploma in Industrial Health or equivalent shall not be required to possess the certificate of training as aforesaid;

(ii) the Chief Inspector, may subject to such conditions as he may specify, grant exemption from the requirement of this sub-rule, if in his opinion a suitable person possessing the necessary qualification is not available for appointment;

(iii) in case of a person who has been working as a factory Medical officer for a period of not less than 3 years on the date of commencement of this rule, the Chief Inspector, may subject to the condition that the said person shall obtain the aforesaid certificate of training within a period of three years relax the qualification.

(8) The syllabus of the course leading to the above certificate, and the organisations conducting the course shall be approved by the Directorate General of Factory Advice Service and Labour Institutes or the State Govt. in accordance with the guidelines issued by the DGFASLI.

(9) Within one month of the appointment of a 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 under which appointed."

"65T. **Occupational Health Centres.**—(1) In respect of any factory carrying on hazardous process or dangerous operations and employing more than 500 workers, there shall be provided and maintained in good order an Occupational Health Centre with the Services and facilities as laid down hereunder:—

For Factories employing above 500 workers:—

(i) One full-time Factory Medical Officer having qualification prescribed under rule 65(SS).

this regard. If the Inspector is also a Certifying Surgeon, he may dispose of the application himself.

(3) Any findings of the Factory Medical Officer repealing 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 workers 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, fully incapacitated in which case the worker affected shall be compensated as per law.

(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 in such a case shall be final. The fee required for this Medical Examination shall be paid by the occupier.

(5) The workers 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 workers 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) The Factory Medical Officer shall have qualifications included in Schedules to the Indian Medical Degree Act, 1916 or in the Schedules to the Indian Medical Council Act, 1956 and possess a certificate of Training in Industrial Health of minimum three month duration recognised by the State Government.

neighbourhood as required under said rules. If the occupier is of the opinion that the disclosure of details regarding the process and formulations will adversely affect his business interest, he may make a representation to the Chief Inspector stating the reasons for with holding such information. The Chief Inspector shall give an opportunity to the occupier of being heard and pass an order on the representation.

An occupier aggrieved by an order of the Chief Inspector may prefer an appeal before the State Government within a period of 30 days. The State Government shall give an opportunity to the occupier of being heard and pass an order. The order of the State Government shall be final.

"65(SS). **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 details of pre-employment and periodical medical examinations carried out as aforesaid shall be recorded in the health Register in Form No. 19.

(2) No person shall be employed for the first time without a certificate of Fitness in Form 5 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

(2) The Chief Inspector may issue guidelines for formulation of disaster control and management plans. The Chief Inspector as well as the District Emergency Authority may after mutual consultation, also direct modifications of the disaster control and managament plan in respect of a factory as may be necessary from time to time.

(3) The occupier in consultation with the District Emergency Authority will arrange rehearsals of the plan at least once a year."

"65R. **Information on industrial wastes.**—(1) The information furnished under Rule 65NN, 65OO, 65P & 65PP 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 stocks or other openings, and arrangements such as provision of scrubers, cyclone separators, electorstices precipitators or similar such arrangements made for controlling pollution of the invironment.

(3) The occupier shall also furnish the information prescribed in the sub-rule (1) and (2) to the State Pollution Control Board."

"65RR. **Review of the information furnished.**— The occupier shall review the information furnished under rules 65NN to 65R 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 extent necessary."

"65S. **Confidentiality of information.**—The occupier of a factory as mentioned in rule 65NN, 650, 65P & 65PP shall disclose all information needed for protecting safety and health of the workers and the general public in the

"65PP. **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 under rule 65NN, 65O and 65P.

(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 for by the Chief Inspector from time to time for the purpose of this Act and Rules made thereunder."

"65Q. **Onsite Emergency Plan.**—(1) The occupier of a factory carrying on a hazardous process shall prepare a draft on site emergency plan and submit it to the Chief Inspector. The Chief Inspector may make such modifications in the plan as necessary in consultation with the occupier and approve the same.

(2) The occupier shall submit a copy of the approved plan to the District Emergency Authority.

(3) The occupier shall intimate the workers the provisions of the emergency plan and hold rehearsals of the plan periodically. He shall review the plan from time to time and make nacessary changes therein under intimation to the Chief Inspector and the District Emergency Authority.

(4) The Chief Inspector may issue guidelines relating to formulation of emergency plans. He may also direct modifications of the emergency plan in respect of any factory as may be necessary, from time to time."

"65QQ. **Plan for Disaster control measures.**—(1) The occupier of a factory or class of factories identified by the Chief Inspector of Factories/State Government shall prepare a draft plan for disaster control measures in respect of his factory and submit the same to the Chief Inspector and the District Emergency Authority.

designated by the State Government, all information having a bearing on preparation of an onsite emergency plan and a disaster control and management plan in respect of the factory.

Without prejudice to the generality of this clause, the occupier shall furnish the District Emergency Authority the following:—

(a) a report on status relating to risk assessment and environmental impact assessment and the measures taken for prevention of accidents;

(b) compilation of Material Data sheets in respect of hazardous substances used, produced or stored in the factory;

(c) a statement on all possible sources of accidents involving fire, explosion, release or leakage of toxic substances and the plan of the premises where such an accident may occur;

(d) a statement on resources and facilities available for dealing with an emergency including any agreement entered into with a neighbouring factory for aid and assistance in the event of an emergency;

(e) a map of the area showing the approaches to the factory, location of emergency facilities such as hospitals, police fire service;

(f) the organisation of the management and the responsibility for safety indicating therein the persons responsible for onsite emergency action;

(g) details relating to alert system;

(h) information on availability of antidotes for poisoning resulting from an accident;

(i) any other information as may be considered relevant by the occupier or asked for by the District Emergency Authority."

indication of their principal harmful characteristics;

(f) Brief description of the measures to be taken to minimise the risk of such an accident in compliance with its legal obligations under relevant safety statutes;

(g) Salient features of the approved disaster control measures adopted in the factory;

(h) Details of the factory's emergency warning system for the general public;

(i) General advice on the action members of the public should take on hearing the warning;

(j) Brief description of arrangements in the factory, including liasion with the emergency services, to deal with foreseable accidents of such nature and to minimise their effects; and

(k) Details if where further information can be obtained.

(2) The occupier shall also supply any further information to general public as directed by the District Emergency Authority from time to time.

(3) The Occupier shall endeavour to enter an agreement with the District Emergency Authority for the area, within whose jurisdiction the factory is situated, for the District Emergency Authority to take appropriate steps to inform the general public outside the factory who are likely to be affected by an accident as required in sub-rule (1).

(4) The information prescribed in sub-rule (1) shall be in the regional language and in English or Hindi."

"65-P. **Disclosure of information to District Emergency Authority.**—The occupier of a factory covered under Rule 65QQ shall intimate the District Emergency Authority

(l) Any other information considered necessary by the occupier to ensure 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 notices 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 explain to them.

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

"65-O. **Disclosure of information to general public.**— (1) The occupier of every factory covered under Rule 65-QQ shall in consultation with the District emergency Authority designated by the State Government, take appropriate steps to inform the general public who are likely to be in the area which might be affected by an accident. Such information shall include:—

(a) Name of the factory and address where situated;

(b) Identification, by name and position, of the person giving the information;

(c) Confirmation that the factory has approval from the Factories Inspectorate and Pollution Control Board;

(d) An explanation in simple terms of the hazardous process (s) carried on in the premises;

(e) The common names of the hazardous substance used which could give rise to an accident likely to affect them, with an

"65-NN—**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 material or substances in the manufacture, transportation, storage and other processes;

(a) Requirements of Section 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 65N;

(d) Physical and health hazards arising from the exposure to or handling of substances;

(e) Measures taken by the occupier to ensure safety and control of physical and health hazards;

(f) Measures to be taken by he workers to ensure safe handling, stroage and transportation of hazardous substances;

(g) Personal protective equipment required to be used by workers employed in 'hazardous process' or 'dangerous operation';

(h) Meaning of various labels and markings used on the containers of hazardous substances as provided under Rule 65N;

(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) Rule of workers vis-a-vis the emergency plan of the factory, in particular the evacuation procedures;

	Exposure Limit(s)	Irritancy of Material
Sensitization to Material	Carcinogonicity, Reproductive Effects. Teratogenicity Mutagenicity	
Synergistic Materials		

SECTION VII—**Preventive measures**

PERSONAL PROTECTIVE EQUIPMENTS		
Gloves (Specify)	Respiratory (Specify)	Eyes (Specify)
Footwear (Specify)	Clothing (Specify)	Other (Specify)

Engineering Controls (e.g. Ventilation, enclosed process etc.) Please **Specify**

Leak and Spill procedures

Waste Disposal

Handling Procedures and **Equipment**

Storage Requirements

Special Shipping Information

SECTION VIII—**First aid measures**

First Aid measures

Sources used

Additional information

SECTION IX–**Prepa ration Data of M. S. D. S.**

Prepared by (Group, Department etc.)	Phone No.	Date

Notes :

1. CAS or UN Number .—Chemical Abstract Service or United Nations (UN) Number.
2. LD 50—Lethal Dose—50—(LD 50 specify species and route.
3. LC 50—Lethal Concentration—50% (LD—50–Specify species and route).
4. TDG *Flammability*.—Transport of Dangerous goods flammability classification by United Nations.

Vapour Presure mm	Vapour density (Air=1)	Evapora-tion Rate	Boiling point (°C)	Freezing Point (°C)
Solubility in Water 20 C		PH	Density (g/ml)	Coefficient of water/oil Distribution.

SECTION IV—Fire and Explosion Hazard of Material

Flammability
——Yes——No If yes, under what conditions

Special Procedures

Means of Extinction

Flash point (°C) and Method	Upper Explosion Limit (% by volume)	Lower Explosions Limit (% by volume)
Auto-ignition Temperature (°C)	TDG Flammability	Hazardous Combustion Products,
Explosion Data-Sensitivity to Chemical Impact		Sensitivity to static Discharge

SECTION V–Reactivity Data

Chemical stability
——Yes——No If no, under what conditions

Incompatibility to other substances
——Yes——No If yes, which ones

Reactivity and under what conditions

Hazardous Decomposition products

Material
Name/Identifier

SECTION VI–Toxicological Properties of Material

Route of Entry
——Skin Contact——Skin Absorption——Eye Contact——
Inhalation Acute——Inhalation Chronic——Ingestion.

Effect of Acute Exposure to Material

Effects of Chronic Exposure to Material

2. **Labelling.**—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 manufacture or importer of the hazardous substance;

(c) the physical and health hazards; and

(d) the recommended personal protective equipment needed to work safely with the hazardous substance.

SCHEDULE

MATERIAL SAFETY SHEET

SAMPLE MODEL

SECTION–I–Material Identification and use

Material Name/Identifier			
Manufactuer's Name		Supplier's Name	
Street Address		Street Address	
City	State	City	State
Postal code	Emergency Telephone No.	Postal code	Emergecy Telephone No.
Chemical Name		Chemical Identify	
Trade Name and Synonyms		Product Use	

SECTION–II Hazardous Ingredients of Material

Hazardous Ingredients	Approximate concentration %	C.A.S. or Un Numbers	LD 50 (Specify species and Route)	LC 50 (Specify species and Route)

SECTION-III Physical Data for Material

Physical State —Gas —Liquid —Solid	Odour & Appearance	Odour threshold (p.p.m)	Specific Gravity

(vii) The permissible limits of exposure prescribed in the second Schedule under Section 41F 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 procedure if necessary.

(b) The occupier while obtaining or developing a Material Safety Data Sheet in respect of a hazardous substance shall ensure that the information recorded accurately reflects the scientific evidence used in making the hazard 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) Any example of such Material Safety Data Sheet is given in the schedule to this Rule.

(6) The policy shall be made widely known by—

(a) displaying coppies of the policy at conspicuous places and making copies of the policy available to worker on demand; and

(b) any other means of communication, in a language understood by majority of workers.

(3) The occupier shall revise the safety policy as often as may be appropriate, but it shall necessary 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 artieles are introduced in the manufacturing process having implications on health and safety of persons exposed to such substances."

65-N. **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 evey hazardous substance or material handled in the manufacture, transportation and storages 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 substance 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;

(3) 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) organisational set up to carry out the declared policy clearly assigning the responsibility at different levels; and

(c) arrangements for making the policy effective.

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

(a) arrangements for involving the workers;

(b) intention 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 in 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 remedial measures;

(f) stating its intentions to integrate health and safety, in all decisions including those dealing with purchase of plant, equipment machinery and material as well as selection and placement of personnel;

(g) arrangements for informing, educating and training and retraining its own employees at different levels and the public wherever required;

(h) obligations of worker for promoting health and safety.

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

9. **Information on Dispersal/Disposal of Wastes and pollutants.—**

9.1 Major pollutants (gas, liquid, soild) their characteristics and quantities (average and at peak loads).

9.2 Quality and quantity of solid wastes generates, method of their treatment and disposal.

9.3 Air, water and solid pollution problems anticipated and the proposed measures to control the same, including treatment and disposal of effluents.

10. **Information of proposed safety and occupational Health Measures.**

10.1 Details of fire fighting facilities and minimum quantity of water, Co^2 and or other fire fighting measures needed to meet the emergencies.

10.2 Details of in-house medical facilities proposed.

11. **Onsite emergency plan.**

12. **Any other relevant information.**

I certify that the information furnished above is correct to the best of my knowledge and nothing or importance has een concealed while furnishing it.

Name and signature of the applicant.

"65MM—**Health and Safety policy.**—(1) In every factory:—

(a) Wherein more than 100 workers are ordinarily employed.

(b) Which carries on any process or operation diclared to be dangerous under Section 87 of the Act and employing more than 50 workers or

(c) Which carries on 'hazardous process' as defined under section 2 (cb) of the Act and employing more than 50 workers.

The occupier shall prepare a written statement of his policy in respect of health and safety of workers at work.

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

5. **Organisation structure of the proposed manufacturing unit/factory.**

5.1 Proposed Health and safety policy.

6. **Communication links.**

6.1 Availability of telephone and other communication facilities for outside communication.

7. **Manufacturing process information.**

7.1 Process flow diagram.

7.2 Brief write up on process and technology.

7.3 Critical process parameters such as pressure build up, temperature rise and run away reactions.

7.4 Other external effects critical to the process having safety implications, such as ingress of moisture or water, contact with incompatiable substances sudden power failure.

7.5 Highlights of the built-in safety/pollution control devices or measures/incorporated in the manufacturing technology.

8. **Information of Hazardous materials:—**

8.1 Raw materials, intermediates, products and by-products and their quantities (Enclose material safety Data Sheet in respect of each hazardous substance).

8.2 Main and intermediate storage proposed for raw materials/intermediates/products/by-products (maximum quantities to be stored at any time).

8.3 Transportation methods to be used for materials inflow and outflow, their quantities and likely routes to be followed.

8.4 Safety measures proposed for.

—handling of materials;

—internal and external transportation; and

—disposal (packing and forwarding of finished products).

FORMAT OF APPLICATION TO THE SITE APPRAISAL COMMITTEE-II FOR OTHER THAN LARGE SCALE FACTORIES.

1. **Name and address of the applicant.**
2. **Site ownership data.**

2.1 Revenue details of site such as Survey No. Plot 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 Forests Act, 1927 has been taken.

2.3 Whether the proposed site attract the provisions of Section 3 (2) (V) of the E.P. Act, 1986, if so the nature of the restrictions.

2.4 Local authority under whose jurisdiction the site is located.

3. **Site Plan**

3.1 Site plan with clear identification of boundaries and total areas proposed to be occupied and showing the following details near-by the proposed site.—

(a) Names of neighbouring manufacturing units and human habitants, petrol installations, storage of LPG and other hazardous substances in the vicinity and their distances from the proposed unit.

(b) Nearest hospitals, fire-stations, civil defence stations, police stations and their distances.

3.2 Plot plan of the factory showing the entry and exit points, roads within, water drains etc.

4. **Project Report.**

4.1 Maximum number of persons likely to be working in the factory.

4.2 Maximum amount of power and water requirements and source of their supply.

4.3 Block diagram of the buildings and installations in the proposed supply.

Information on Dispersal/DisPosal of Wastes and Pollutants.

9.1 Major pollutants (gas, liquid, solid) their characteristics and quantities average and at peak loads).

9.2 Quality and quantity of solid wastes generated method of their treatment and disposal.

9.3 Air, water and soil pollution problems anticipated and the proposed measures to control the same, including treatment and disposal of effluents.

10. **Process Hazards Information.**

10.1 Enclose a copy of the report of enviornmental impact assessment.

10.2 Enclose a copy of the report on Risk Assessment study.

10.3 Published (open or classified) reports, if any, on accident situations/occupational health hazards in similar plants elsewhere (within or outside the country).

11. **Information of proposed safety and occupational Health Measures.**

11.1 Details of fire fighting facilities and minimum quantity of water. CO2 and or other fire fighting measures needed to meet the emergencies.

11.2 Details or in house medical facilities proposed.

12. **Information on Emergency preparedness.**

12.1 Onsite emergency plan.

12.2 Proposed arrangements, if any, for mutual aid scheme with the group of neighbouring factories.

13. **Any other relevant information.**

I certify that the information furnished above is correct to the best of my knowledge and nothing or importance has been concealed while furnishing it.

Name and signature of the applicant.

5.4 Percentage outlay on safety, health and environment protection measures.

6. **Communication Links**

6.1 Availability of telephone/telex/wireless and other communication facilities for outside communication.

6.2 Internal communication facilities proposed.

7. **Manufacturing Process Information**

7.1 Process flow diagram.

7.2 Brief write up on process and technology.

7.3 Criticle process parameters such as pressure build-up temperature raise and run-away reactions.

7.4 Other external effects critical to the process having safety implications, such as ingress of moisture or water, contact with incompatiable substances, sudden power failure.

7.5 High lights of the build-in safety/pollution control devices or measures incorporated in the manufacturing technology.

8. **Information of Hazardous Materials.**

8.1 Raw materials, intermediates, products and by products and their quantities (Enclose Material Safety Data sheet in respect of each hazardous substance).

8.2 Main and intermediate storages proposed for raw materials/intermediates products/by-products (maximum quantities to be stored at any time.)

8.3 Transportation methods to be used for materials inflow and outflow their quantities and likely routes to be followed.

8.4 Safety measures proposed for :

— handling of materials;
— internal and external transportation; and
— disposal (packing & forwarding of finished products)

(d) Nearest hospitals, fire-stations, civil defence stations and police stations and their distances;

(e) High tension electrical transmission lines pipe lines for water, oil, gas or sewarage, railway lines, roads, stations, jatties and other similour installaions.

3.2 Details of soil conditions and depth at which hard starta 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 (Govt., Semi Govt., 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, in 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.

(f) Wherever the proposed site requires clearance by the Ministry of Industry or the Ministry of Environment and Forests of the Central Government the application for site Appraisal will be considered by the site Appraisal Committee only after such clearance has been received.

FORMAT OF APPLICATION TO THE SITE APPRAISAL COMMITTEE-I

For large scale factories

1. Name and address of the applicant.
2. Site Ownership Data.

2.1 Revenue details of site such as survey No. Plot 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 Forests Act, 1927 has been taken.

2.3 Whether the proposed site attracts the provisions of Section 3(2) (V) of the E. P. Act, 1986 if so, the nature of the restrictions.

2.4 Local authority under whose jurisdiction the site is located.

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, storages 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.

of rule 65-M shall be submitted to the Chairman of the Site Appraisal Committee.

(b) The application for site appraisal alongwith 15 copies thereof shall be submitted in the Form annexed to this rule. The committee may dispense with furnishing information of any particular item in the Application form if it considers the same to be not relevant to the application under consideration.

(4) Function of the Committee :

(a) The Secretary shall arrange to register the applications received for appraisal of site in 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 receipt.

(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 processes 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 experts, inspect the site if necessary and take other steps for formulating its views in regard to the suitability of the site.

"65K. **Quality of personal protective Equipments.**—

All personal protective Equipments provided to workers as required under any of the provisions of the Act or the Rules shall conform to the relevant Indian Standards."

"65L. **Protective Equipment.**—The Inspector may having regard to the nature of the hazards involved in work and process being carried out, order the occupier or the mannager in writing to supply to the workers exposed to particular hazard any personal protective equipment as may be found necessary."

"65M. **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 reconstitute the committte as and when necessary for classes of factories notified by the State Government in this behalf.

(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.

(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 on this committee.

(3) Applications for appraisal of sites:—

(a) Applications for appraisal of site in respect of the factories covered under sub-rule (1)

(6) Functions and duties of the Safety Committee may 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 problems encountered;

(c) creating safety awareness amongst all workers;

(d) undertaking educational, training and promotional activities;

(e) discussing reports on 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;

(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 recommendations made by it;

(i) suggesting ways & means to avoid reoccurrence of accidents.

(7) Where owing to the size of the factory, or any other reason, the functions referred to in sub-rule (6) cannot be effectively carried out by the Safety Committee, it may establish sub-committees as may be required to assist it.

person who is under 18 years of age and no person who is not sufficiently competent and reliable shall be employed as a driver of a locomotive or as a shunter.

(20) The Chief Inspector may by an order in writing exempt a factory or part of its from all or any of its form all or any of the provisions of this rule to such an extent and on such conditions as he deems necessary."

"65J. **Safety committee.**—(1) In every factory wherein more than 50 workers are ordinarily employed and —

(a) Which carries on any process or operation declared to be dangerous under Section 87 of the Act; or

(b) Which carries on 'hazardous process' as defined under Section 2(cb) of the Act.

There shall be a Safety Committee.

(2) The safety committee should have equal representatives of management and workers and should consists of not less than 2 and not more than 6 members from each side depending upon the size of the factory.

The management representatives shall include a senior officer who is in position to contribute effectively to the functioning of the committee, and shall be chairman of the committee.

(3) The workers' representatives on this committee shall be elected by the entire body of workers. The elections for this purpose shall be held by the management within 30 days of occurring of such vacancy on committee.

(4) The tenure of the committee shall be three years.

(5) Safety committee shall meet as often as necessary but at least once in every quarter. The minutes of the meeting shall be recorded and produced to the Inspector on demand.

(f) All point levers shall have their movements paralled to, not across the direction of the track.

(g) All loading plateforms which are more than 60 cm. above the level of the ground on which the track is laid and more than 15 meters in length, shall be provided with stops at intervals not greater than 15 meters apart to enable the plateform to be easily mounted from the track.

(h) Turn tables on plant railways shall be provided either locking devices which will prevent the table from turning while locomotives or wagons are being turn on or off the tables.

(i) Workers shall be prohibited from passing under, between or above railway wagons.

(17) **Crossings.**—(a) At all crossings of a track with a road or walkway, danger or crossing signs and wherever reasonably practicable, blinking lights or alarm lights shall be provided at all important crossings, gates or barriers manned by watchmen shall be provided. Swinging gates and barriers shall be secured against inadvertent opening or closing.

(b) All crossings, warning signs, gates and barriers shall be illuminated during hours of darkness.

(18) **Duties of drivers and shunters.**—It shall be the duty of every driver of a locomotive, or a shunter including a shunting jamadar, to report without delay to their superior any defect in permanent way, locomotive or rolling stock.

(19) **Young persons not to be employed as drivers of locomotive or as shunters.**—No

guage plus twiie the width of the door of such a wagon when opened directly outward plus 1 meter.

(bb) from a building or structure other than a loading plateform to the centre of the nearest track, half the overall width of the widest wagon of that guage, plus the width of its door when opened outward, plus 1.5 metres.

(cc) from material stocked or deposited alongside the track, on the ground or on a loading plateform to the centre of the nearest track, half the over all width of the widest wagon of that guage, plus half of its door when opened directly outward, plus 1 meter.

(b) Sleepers of a track shall be in level with the ground and at the crossings of the track with a road or walkway, the surface of the road or walkway shall be in level with the top of the rails.

(c) All track ends shall be equipped with buffer stops of adequate strength.

(d) Barriers of substantial construction shall be securely and permanently fixed across any doorway or gateway in a building or in a wall which conceals an approaching train from view, between the building and the track as prescribed in clause (a) of sub-rule (3).

(e) Where tracks are carried on a gantry or other elevation, a safe footway or footways with hand rails and toe-boards shall be provided at all positions where persons work or pass on foot, and where there is an opening in the stage of an elevated track for dropping of material to a lower level, the position shall be adequately fenced or the opening itself provided with a grill through which a person cannot fall.

(13) **Hand signals.**—The hand signals used by the shunting jamadar by day and night shall be those prescribed by the shunting rules of railway, working under the Indian Railway Act (IX of 1890).

(14) **Night work and fog.**—(a) In factories where persons work at night, no movement of locomotive, wagon or other rolling stock otherwise than by hand shall be permitted between sun-set and sun-rise unless the tracks and their vicinity are lighted in a scale of not less than 10 lux as measured at the horizontal plane at the ground level.

(b) In no circumstances shall any locomotive or train be moved between sun-set and sun-rise or at any time when there is fog, unless it carries a white head light and a red rear light.

(15) **Speed control.**—(a) locomotive or train shall not be permitted to move at a speed greater than seven kilometers per hour.

(b) A train, locomotive, wagon or other rolling stock shall not be moved by mechanical or electrial power unless it is proceeded at a distance of not less than 10 meters during the whole of its journey by a shunting jamadar. He shall be provided with signalling flags or lamp and whistle necessary for calling the attention of the driver.

(16) **Tracks.**—(a) The distance (i) between tracks and (ii) between tracks and building, blind walls or other structures and (iii) tracks and materials deposited on the ground shall be respectively not less than.

(aa) from centre to centre of parallel tracks, the overall width of the widest wagon of that

kept standing unless its brakes are firmly applied and, where it is on a gradient, without sufficient number of properly constructed scoches placed firmly in position.

(b) No train shall be set in motion until the shunting jamadar has satisfied himself that all wagon doors are securely fastened.

(9) **Projecting loads and cranes.**—(a) If the load on a wagon projects beyond its length, a guard or dummytruck shall be used beneath the projection.

(b) No loco-crane shall travel without load unless the jib is completely lowered and positioned in line with track.

(c) When it is necessary for a loco-crane to travel with a load, the jib shall not be swing until the loco-crane has come to rest.

(10) **Loose-shunting.**—Loose shunting shall be permitted only when it cannot be avoided it shall never be performed on a wagon not accompanied by a man capable of applying and pinning down the brakes. A wagon not provided with brakes in good working order and capable of being easily pinned down shall not be loose-shunted unless there is attached to it atleast another wagon with such brakes. Loose shunting shall not be performed with, or against a wagon containing passengers, livestock or explosives.

(11) **Fly-shunting.**—Fly-shunting shall not be permitted on any factory railway.

(12) **The shunting Jamadar.**—(a) Every locomotive or wagon in motion in a factory shall be in-charge of a properly trained Jamadar as prescribed by the Chief Inspector.

(b) Before authorising a locomotive or wagon to be moved, the shunting jamadar shall satisfy himself that no person is under or in-between or in front of the locomotive or wagon.

intervals and those that are worn out replaced at once.

(c) Water-guage glasses of every locomotive, whatever its boiler pressure, shall be protected with substantial glass or metal screens.

(d) Suitable steps and hand-holds shall be provided at the corners of the locomotive for the use of shunters.

(e) Every locomotive crane shall be provided with lifting and jacking pads at the four corners of the locomotive for assisting in re-railing operations.

(f) It shall be clearly indicated on every locomotive crane in English and in language understood by the majority of the workers in the factory, for what weight of load and at what radius the crane is safe.

(6) **Wagons.**—(a) Every wagon (and passenger coach, if any) shall be provided either with self-acting brakes capable of being applied continuously or with efficient hand brakes which shall be maintained in good working order. The hand brakes shall be capable of being applied by a person on the ground and fitted with a device for retaining them in the applied position.

(b) No wagon shall be kept standing within 3 metres of any crossing.

(c) No wagon shall be moved with the help of crowbars or pinch bars.

(7) **Riding on locomotive, wagon or other rolling stock.**—No person shall be permitted to be upon (Whether inside or outside) any locomotive, wagon or after rolling stock except where secure foothold and handhold are provided.

(8) **Attention to brakes and doors.**—(a) No locomotive, wagon or other rolling stock shall be

to railway track, a barrier about 1 meter high shall be fixed parallel to and about 60 cm. away from the building or wall outside the opening and extending several feet beyond it at either end, so that any person passing out may become a ware of an approaching train when his pace is checked at the barrier.

If the traffic on the nearest track is all in one direction, the barrier shall be in the form of on "L" with the end of the short leg abutting on to the wall and the other and opening towards the approaching train.

(b) If the distance between wall and track cannot be made to accommodate such a barrier, the barrier or a turngate shall be placed at the inside of the opening.

(c) Where a footway passage close to a building or other obstruction as it approaches a railway track, a barrier or a turngate shall be fixed in such a manner that a person approaching the track is compelled to move away from the building or obstruction and thus obtain timely sight of an approaching locomotive or wagon.

(4) **Crowds.**—(a) Workers pay-window, first aid stations and other points where a crowd may collect shall not be placed near a railway track.

(b) At any time of the day when workers are starting or ending work, all railway traffic shall cease for not less than five minutes.

(5) **Locomotives.**—(a) No locomotive shall be used in shunting operations unless it is in good working order.

(b) Every locomotive and tender shall be provided with efficient brakes, all of which shall be maintained in good working order. Brake shoes shall be examined at suitably fixed

drying cans or through hot flue or other equally effective means, before the same is allowed to pass through polymerising machines.

(b) Infrared ray heaters of polymerising machines shall be cut off while running the prints."

18. After rule 65 G of the said rules, the following new rules shall be added, namely:—

"65H.—**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 have been examined and declared fit by a qualified opthalmologist 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 clause (1) shall be examined at least once in every period of 12 months upto the age of 45 years and 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 35."

"65 **I-Railways in factories.**—(1) This rule shall apply to railways in the precincts of a factory which are not subject to Indian Railways Act, 1890.

(2) **Gateways.**—A gateway through which a railway track passes shall not be used for the general passage of workers into or out of a factory.

(3) **Barriers and Turngates.**—(a) Where building or walls contain doors or gates which open

(9) **Temperature Control.**—Every oven or drier shall be provided with an automatic arrangement to ensure that the temperature within does not exceed a safe upper present limit to be decided in respect of the particular processing being carried on.

(10) **Multistage Processes.**—Wherever materials are to be processed in ovens or driers in successive operations, suitable arrangement should be provided to ensure that the operating temperatures necessary for safe operation at each stage are maintained within the design limits.

(11) **Combustible substances not to drip on electrical heaters or burners flame.**—Effective arrangements shall be provided in every oven or drier to prevent dripping of combustible substances on electric heaters or burner flame used for heating.

(12) **Periodical Examination, Testing and Maintenance.**—(a) All parts of every oven and drier shall be properly maintained and thoroughly examined and the various controls as mentioned in this rule and the working of the oven or drier tested at frequent intervals to ensure its safe operation by a responsible person designated by the occupier or manager or who by his experience and knowledge of necessary precautions against risks of explosion, is fit to undertake such work.

(b) A register shall be maintained in which the details of the various tests carried out from time to time under clause (a) shall be entred and every entry made shall be signed by the person making the tests.

(13) **Training of Operators.**—No person shall be assigned any task connected with operation of any oven or drier unless he has completed 18 years of age and he is properly trained in the manner as prescribed by the Chief Inspector.

(14) **Polymerising Machines.**—(a) Printed fabric shall be thoroughly dried by passing them over

provided and maintained to ensure that—

(i) all ventilating fans and circulating fans whose failures would adversly effect the ventilation rate of flow pattern, are in operation before any mechanical conveyor that may be provided for feeding the articles or substances to be processed in the oven or drier is put into operation;

(ii) failure of any of the ventilating or circulating fans will automatically stop any conveyor as referred to in clause (i) as may be provided, as well as stop the fuel supply by closing the shut off valve and shut off the ignition in the case of gas or oil fired ovens, and in the case of electrically heated ovens switch off the electrical supply to the heaters;

(iii) the above said mechanical conveyor is set in operation before the above said shut off valve can be energized; and

(iv) the failure of the above said conveyor will automatically close the above said shut off valve in the case of ovens and driers heated by gas, oil or steam and deactivate the ignition system, or cut off the electrical heaters in the case of electrically heated ovens or furnaces:

(8) **Automatic preventilation.**—Every oven or drier heated by oil, gas, steam or electricity shall be provided with an efficient arrangement for automatic preventilation consisting of atleast 3 volume changes with fresh air by operation of the safety ventilation fans and the circulating fans (if used) so as to effect purging of the oven or drier of any mixture of air and a flammable substance before the heating system can be activated and before the conveyor can be placed in position.

(f) The fresh air admitted into the oven or drier by means of the safety ventilation system shall be circulated adequately by means of circulating fan or fans through all parts of the oven or drier so as to ensure that there are no locations where the flammable substance can accumulate in the air or become pocketed to any dangerous degree.

(g) Throttling dampers in any safety ventilation system should be so designed by cutting away a portion of the damper or otherwise, that the system will handle atleast the minimum ventilation rate required for safety when they are set in their maximum throttling position.

(6) **Explosion Panels.**—(a) Every oven or drier having an internal total space of not less than half cubic metrs shall be provided with suitably designed explosion panels so as to allow release of the pressure of any possible explosion within the oven or drier through explosion vents. The area of openings to be provided by means of such vents together with the area of openings of any access doors, which are provided with suitable arrangements for their release in case of an explosion, shall be not less than 2200 square centimetres for every one cubic metre of volume of the oven or drier: The design of the explosion panels and doors as above said shall be such as to secure their complete release under an internal pressure of 0.25 kg. per square centimetre.

(b) The explosion releasing panels, shall, as far as practicable, be situated at the roof of the oven or drier or at those portions of the walls where persons do not remain in connection with operation of the oven or drier.

(7) **Interlocking arrangements.**—(a) In each oven or drier efficient interlocking arrangements shall be

(b) The safe level of dilution referred to in clause (a) shall be so as to achieve a concentration of the concerned flammable substance in air of not more than 25 percent of its lower explosive limit:

Provided that a level of concentration in air upto 50 percent of the lower explosive limit of the concern flammable substance may be permitted to exist subject to installation and maintenance of an automatic device which :

(i) shows continuously the concentration of the flammable substances in air present in the oven or drier at any instant;

(ii) sounds an alarm when the concentration of the flammable substance in air in any part of the oven or drier reaches a level of 50 precent of its lower explosive limit; and

(iii) shuts down the heating system of the oven or drier automatically when the concentration in air of the flammable substance in any part of the oven or drier reaches a level of 60 percent of its lower explosive limit, is provided to the oven or drier and maintained in efficient working condition.

(c) No oven or drier shall be operated without its safety ventilation system working in an efficient manner.

(d) No oven or drier shall be operated with a level of dilution less than what is referred to in clause (b).

(e) Exhaust ducts of safety ventilation systems should be so designed and place that their ducts discharge the mixture of air and flammable substance away from the work-rooms and not near windows or doors or other openings from where the mixture could re-enter the work-rooms.

means of a separate circuit provided with an isolation switch.

(4) **Design, Construction, examination and testing.**— (a) Every oven or drier shall be properly designed on sound engineering practiced and be of good costruction, sound material and adequate strength, free from any patent defects and safe if properly used.

(b) No oven or drier shall be taken into use in a factory for the first time unless a competent person has thoroughly examined all its parts and carried out the tests as are required to establish that the necessary safe systems and controls provided for safety in operation for the processes for which it is to be used and a certificate of such examination and tests signed by that competent person has been obtained and is kept available for inspection.

(c) All parts of an oven or drier which has undergone any alteration or repair which has the effect of modifying any of the design characteristics, shall not be used unless a thorough examination and test as have been mentioned in clause (b) has been carried out by a competent person and a certificate of such examination and tests signed by that competent person has been obtained and is kept available for inspection.

(5) **Safety Ventilation.**—(a) Every oven or drier shall be provided with a positive and effective safety ventilation system using one or more motor-driven centrifugal fan so as to dilute any mixture of air and any flammable substance that may be formed within the oven or drier and maintain the concentration of the flammable substance in the air at a safe level of dilution.

1 Spade.
1 Pick axe.
1 Crowbar.
1 Saw.
1 Hurricane lamp.
1 Electric torch.
1 Pair 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 larage trailer pump as the case may be."

16. The existing rule 64A of the said rules shall be omitted.

17. For the existing rules 65AA of the said rules, the following shall be substituted, namely:—

"**Rule 65-AA ovens and Driers**:—(1) **Application.**—This rule shall apply to ovens and driers, except those used in laboratories or kitchens of any establishment and those which have a capacity below 325 litres.

(2) **Definition.**—For the purpose of this Rule, oven or drier means any enclosed structure, receptacle, compartment or box which is used for baking, drying or otherwise processing of any article or substance at a temperature higher than the ambient temperature of the air in the room or space in which the oven or drier is situated, and in which a flammable or explosive mixture of air and a flammable substance is likely to be evolved within the enclosed structure, receptacle, compartment or box or part thereof on account of the article or substance which is baked, dried or otherwise processed within it.

(3) **Separate electrical connection.**—Electrical power supplied to every oven or drier shall be by

ever 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.

(g) Fire fighting drills shall be held atleast 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 lit minute.

1 Armoared suction hose of 9 meters l wrenches.

1 Metal suction strainer

10 Unlined or rubber lined 70mm. delivery hose of 25 meters length complete with quick-release couplings.

1 Dividing breaching piece
2 Branch piece with 15 mm. nozzles.
1 Diffuser nozzle.
1 Stand pipe with blank cap.
1 Hydrant Key
4 Collapsible canvas buckets.
1 Fire hook (Preventor) with cutting edge.
1 25 mm manila rope of 30 meters length
1 Extension ladder of 9 meters length (where necessary)
1 Heavy axe
1 Spade
1 Pick axe.
1 Crowbar
1 Saw
1 Hurricane lamp
1 Electric torch
1 Pair rubber gloves.

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

1 Armoured suction hose of 9 meters 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 meters length complete with quick release couplings.
Dividing breaching piece.
cting breaching piece.
pipes with one 25mm, two 20mm and one
le.
blank caps.

(d) In factories where the areas 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 atleast 100 minutes. Atleast 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 centimeters 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 centimeters).

(f) All trailer pumps including the equipment provided with them and the vehicles for towing them shall be maintained in good condition and subject to periodical inspection and testing as required.

(13) **Personnel incharge 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-rule (11) and (12) shall be in charge of a traind responsible person.

(b) Sufficient number of person 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 to ensure that adequate number of persons are available for fire fighting both by means of first-aid fire fighting equipment and others. Wher-

In the above formula—

A. The total area in square metres of all floors including galleries in all building of the factory,

B. the total area in square metres of all floors and galleries including open space 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 or 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 (s).

(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) Trailor pumps shall be housed in a separate shed or sheds which shall be sited closed to a principal source of water supplies, in the vicinity of the main risks of the factory.

(i) Each first-aid fire fighting equipment shall be allotted a serial no. 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 cabinates in such a way that their bottom is 750 mm 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 750 mm above the floor level. Such equipment if placed out side the building, shall be under sheds or covers.

(k) All extinguishers shall be thoroughly cleaned and recharged immediately after discharge. Sufficient refill materials shall be kept readily available for this purpose at all times.

(l) All first-aid fire fighting equipments shall be subjected 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 in 550 or more, power driven trailer pumps of adequate capacity to meet the requirement of water as calculated above shall be provided and maintained.

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 twelve calendar months. Such re-examination shall, wherever the Certifying Surgeon considers appropriate, include test as specified in sub-paragraph (1).

(3) The Certifying Surgeon after examining a worker, shall issue a Certificate of Fitness in Form No. 30. 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-paragraph (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in Form 19.

(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 the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of worker, he shall make a record of his finding 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 person is unfit for work in the said processes.

(6) No person who has been found unfit to work as said in 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."

24. After paragraph 7 of Schedule V of rule 100 of the said rules, the following shall be added, namely:—

"8. **Medical facilities and record of examinations and tests.**—(1) The occupier of every factory in which grinding or glazing of metals are carried out, shall,—

(a) employ a qualified medical practitioner who is in the opinion of the Chief Inspector capable by virtue of his qualification, training and experience; conducting a thorough medical checkup against the hazards likely to creep in such type of processes, and

(b) provide to the said medical practitioner all the necessary facilites for the purpose referred to in clause (a).

(2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in the separate register approved by the Chief Inspector of Factories which shall be kept readily available for inspection by the Inspector."

"9. **Medical Examination by Certifying Surgeon.**—(1) Every worker employed in grinding or glazing of metal processes incidental thereto shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include pulmonary function tests and in suspected cases chest X-rays. No worker shall be allowed to work after 15 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 12 calendar months. Such re-examination

shall, wherever he Certifying Surgeon considers appropriate, include tests as specified in sub-paragraph (1).

(3) The Certifying Surgeon after examining a worker, shall issue a certificate of Fitness in Form 30. The record of examination and re-examinations carried out shall be entered in the certificate and the Certificates shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in Form No. 19.

(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 the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker he shall make a record of his findings in the said certificate and the health register. The entry of the 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.

(6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permited to work in the said processes unless the certifying surgeon, after further examination again certifies him fit for employment in those processes."

25. In Schedule VIII of rule 100 of the said rules;

(i) For the existing paragraph 7 of the said schedule, the following shall be substituted, namely:—

"7. **Medical facilities and records of examinations and tests.**—(1) The occupier of every factory to which the schedule applies shall,—

(a) Employ a qualified medical practitioner who is in the opinion of the Chief Inspector capable by virtue of his

qualification, training and experience, conducting a thorough medical check up against the hazards involved and to diagnose and treat the industrial diseases which are likely to creep in such type of processes, and

(b) provide to the said medical practitioner 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 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."

(ii) For the existing paragraph 8 of the said Schedule, the following shall be substituted, namely:—

"8. **Medical examination by Certifying Surgeon.**—(1) Every worker employed in the processes referred to in paragraph 1 shall be examined by a Certifying Surgeon within 15 days of this employment. Such examination shall include tests for lead in blood and urin, ALA in urine, haemoglobin content, stippling of cells and steadiness test. No worker shall be allowed to work after 15 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 three calendar months. Such re-examination shall, wherever the certifying surgeon considers appropriate include tests specified in sub-paragraph (1).

(3) The Certifying Surgeon after examining

a worker shall issue a certificate of Fitness in Form 30. 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-paragraph (1) and (2), including the nature and the results of the tests shall also be entered by the Certifying Surgeon in a health register in Form No. 19.

(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 the opinion that a worker is no longer fit for employment in said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a 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 person is unfit for work in the said processes.

(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 said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes."

26. **In schedule VIII of rule 100 of the said rules:—**

(i) After paragraph 9 of the said schedule, the following two new paragraphs shall be added, namely:—

"9. **A Medical facilities and records of examinations and tests.**—(1) The occupier of

every factory to which the Schedule applies, shall—

(a) Employ a qualified medical practitioner who is in the opinion of the Chief Inspector capable by virtue of his qualification, training and experience, conducting a thorough medical check up against the hazards involved and to diagnose and treat the industrial diseases which are likely to creep in such type of process, and

(b) provide to the said medical practitioner all necessary facilities for the purpose referred to in 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."

"9B. **Medical examination by Certifying Surgeon.**—(1) Every worker employed in any of the processes to which this schedule applies shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include pulmonary function test and the chest X-ray. No worker shall be allowed to work after 15 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 12 calendar months and such re-examination shall, wherever the Certifying Surgeon considers appropriate, include pulmonary function

test and chest X-Ray once in every three years.

(3) The Certifying Surgeon after examining a worker, shall issue a certificate of Fitness in Form No. 30. The record of examination and re-examination 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 under sub-paragraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in Form No. 19.

(4) The Certificate of fitness and the health registers shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a 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 person is unfit for work in the said process.

(6) No person who has been found unfit to work in the said processes as said in sub-paragraph (5) above shall be re-employed or permitted to work unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes."

27. In Schedule IX of rule 100 of the said rules:—

(i) For the existing paragraph 5 of the said Schedule, the following shall be substituted, namely:—

"5. **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 who is in the opinion of the Chief Inspector capable by virtue of his qualification, training and experience, conducting a thorough medical check up against the hazards involved and to diagnose and treat the industrial diseases which are likely to creep in such type of process;

(b) provide to the said medical practitioner the necessary facilities for the purpose referred to in clause (a);

(c) arrange for Inspection of the hands of all the persons keeping in contact with chromium substance to be made twice a week; and

(d) Prove and maintain and supply suitable ointment and plaster in a box readily accessible to the workers and solely used for the purpose of keeping the ointment and the plaster.

(2) The record of medical examination 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."

(ii) After the paragraph 5 of the said schedule, the following paragraph shall be added namely:—

"6. **Medical examination by Certifying Surgeon.**—(1) Every worker employed in any of these processes to which the schedule applies shall be examined by a certifying

Surgeon within 15 days of his first employment. Such examination shall include skin test and dermatoses and detection of anthrax bacillus from local lesion by gram stain. No worker shall be allowed to work after 15 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 twelve calendar months. Such re-examination shall, wherever the Certifying Surgeon considers appropriate include tests as specified in Sub-paragraph (1).

(3) The Certifying Surgeon after examining a worker, shall issue a Certificate of Fitness in Form No. 30. 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-paragraph (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in Form No. 19.

(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 the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a 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 person is unfit for work in the said processes.

(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 said processes unless the Certifying Surgeon, after further examination; again certifies him fit for employment in those processes."

28. For the existing Schedule of X rule 100 the said rules the following shall be substituted, namely:—

"SCHEDULE—X"

Chemical Works

PART—i

1. **Application.**—This schedule shall apply to all manufacture and processes incidental thereto carried on in chemical works.

2. **Definitions.**—For the purpose of this schedule—

(a) "Chemical Works" means any factory or such parts of any factory as are listed in Appendix 'A' to this schedule;

(b) "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 of any place in which work is carried on;

(c) "bleaching powder" means the bleaching powder commonly called chloride of lime;

(d) "Chlorate" means chlorate or perchlorate;

(e) "caustic" means hydroxide of potassium or sodium;

(f) "Chrome process" means the manufacture of chromate or bichromate of potassium or sodium or the manipulation, movement or other treatment of these substances;

(g) "nitro or amino process" means the manufacture of nitro or amino denivatives of phenol and of benezene or its homologues, and the making of explosives with the use of any of these substances;

(h) The term "permit to work" system means the compliance with the procedures laid down under

para 20 of part II;

(i) "toxic substances" means all those substances which when they enter into the human body, through inhalation or ingestion or absorption through skin, in sufficient quantities cause fatality or exert serious affliction of health or chronic harmful effects on the health of persons exposed to it due to its inherent chemical or biological effects. In respect of substances whose TLV is specified in Rule 107A, exceeding the concentration specified therein would make the substance toxic;

(j) "emergency" means a situation or condition leading to a circumstance or set of circumstances in which there is danger to the life or health of persons or which could result in big fire or explosion or pollution to the work and outside environment, affecting the workers or neighbourhood in a serious manner, demanding immediate action;

(k) "dangerous chemical reactions" means high speed reactions, run away reactions; delayed reactions. etc. and are characterised by evolution of large quantities of heat, intense release of toxic or flammable gases or vapours; sudden pressure build-up etc.;

(l) "manipulation" means mixing, blending, filling, emptying; grainding, sieving; drying, packing, sweeping, handling, using; etc.;

(m) "approved personal protective equipment" means items of personal protective equipment conforming to the relevant ISI specifications or in the absence of it, personal protective equipment approved by the Chief Inspector of Factories;

(n) "appropriate personal protective equipment" means that when the protective equipment is

used by the worker, he shall have no risk to his life or health or body; and

(o) "confined space" means any space by reason of its construction as well as in relation to the nature of the work carried therein and where hazards to the persons entering into or working inside exist or are likely to develop during working.

PART—II

General requirements

Applying to all the works in Appendix "A"

1. **House-keeping.**—(1) Any spillage of materials shall be cleaned up before further processing.

(2) Floors; platforms, stairways, passages and gangways shall be kept free of any obstructions.

(3) There shall be provided easy means of access to all parts of the plant to facilitate cleaning.

2. **Improper use of chemicals.**—No Chemicals or solvents or empty containers containing chemicals or solvents shall be permitted to be used by workers for any purposes other than in the processes for which they are supplied.

3. **Prohibition on the use of food, etc.**—No Food, drink, tobacco, pan or any edible items shall be stored or heated or consumed on or near any part of the plant or equipment.

4. **Cautionary notices and instructions.**—(1) Cautionary notices in a language understood by the majority of workers shall be prominently displayed in all hazardous areas drawing the attention of all workers about the hazards to health, hazards-involving fire and explosion and any other hazard such as consequences of testing of material or substances used in the process or using any contaminated container for drinking or eating, to which the workers attention should be drawn for ensuring their safety and health.

(2) In addition to the above cautionary notice, arrangement shall be made to instruct and educate all the workers including illiterate workers about the hazards in the process including the specific hazards to which they may be exposed to, in the normal course of their work. Such instructions and education should also deal with the hazards involved in unauthorised and unsafe practices including the properties of substances used in the process under nomal conditions as well as abnormal conditions and the precautions to be observed against each and every hazard, Further, an undertaking from the workers shall be obtained within 1 month of their employment and for old workers employed, within one month of coming into operation of the rules, to the effect that they have read the contents of the countionary notices and instructions, understood them and would abide by them. The training and instructions to all workers and all supervisory personnel shall include the significance of different types of symbols and colours used on the lables stuck or painted on the various types of containers and pipelines.

(5) **Evaluation and provision of safe guards before the commencement of process.**--(1) Before commencing any process or any experimental work, or any new manufacture covered under appendix 'A' the occupier shall take all possible steps to ascertain definitely all the hazards involved both from the actual operations and the chemical reactions including the dangerous chemical reactions. The properties of the raw materials used, the final product to be made, and any by-products derived during manufacture, shall be carefully studied and provisions shall be made for dealing with any hazards including effects on workers, which may occur during manufacture.

(2) Information in writing giving details of the process, its hazards and the steps taken or proposed to be taken from the design stage to disposal stage for ensuring the safety as in sub-para (1) above should be sent to the Chief Inspector at the earliest but in no case less than 15 days before commencing manufacture, handling, or storage of any of items covered under Appendix 'A' whether on

experimental basis, or as pilot plant or as trial production, or as large scale manufacture.

(3) The design, construction, intallation; operation maintenance and disposal of the buildings, plant and facilities shall be taken into consideration effective safeguards against all the safety and health hazards so evaluated.

(4) The requirements under the sub-para (1) to (3) shall not act in lieu of or in derogation to, any, other provisions contained in any act governing the work.

6. **Authorised entry**.—Authorised persons, only shall be permitted to enter any section of the factory or plant where any dangerous operations or processes are being carried on or where dangerous chemical, reactions are taking place or where hazardous chemicals are stored.

7. **Examination of instruments and safety devices**.—(1) All instruments and safety devices used in the process shall be tested before taking into use and after carrying out any repair to them and examined once in a month, by a competent person, Records of such tests and examinations shall be maintained in a register.

(2) All instruments and safety devices used in the process shall be operated daily or as often as it is necessary, to ensure its effective and efficient working at all times.

8. **Electrical installations**.—All electrical installations used in the process covered in Appendix 'A' shall be of an appropriate type to ensure safety against the hazard prevalent in that area such as suitability against dust, dampness, corrossion, flammability and explosivity etc. and shall conform to the relevant ISI specifications governing their construction and use for that area.

9. **Handling and storage of chemicals**.—(1) The containers for handling and storage of chemicals shall be of adequate strength taking into consideration the hazardous nature of the contents. They shall also be provided with adequate labelling and colour coding

arrangements to enable identification of the containers and theirs contents indicating the hazards and safe handling methods and shall conform to the respective ISI standards. The instructions given in the label shall be strictly adhered to. Damaged containers shall be handled only under supervision of a knowledgeable and responsible person and spillage shall be rendered innocuous in a safe manner using appropriate means.

(2) The arrangements for the storage of chemicals including charging of chemicals in reaction vessels and containers shall be such as to prevent any risk of fire or explosion or formation of toxic concentration of substances above the limits specified in rule 107A.

(3) Without prejudice to the generality of the requirements in sub-para (2), above, the arrangements shall have suitable ventilation facilities and shall enable the maintenance of safe levels in vessels and containers. Such arrangements shall also take into consideration, the type of flooring and the capacity of flooring and the compatiability requirements of substances with other chemicals stores nearby.

(4) (a) Storage of chemicals and intermediate products, which are highly unstable or reactive or explosive shall be limited to the quantities required for two months use.

(b) Whenever the quantities laid down in the above clause (a) are to be exceeded, the permission of the Chief Inspector shall be obtained.

(c) Notwithstanding any thing contained in clause (a) and (b) above, the Chief Inspector of Factories may direct any factory carrying out processes covered in Appendix 'A' to further limit the storage of hazardous substances to quantities less than two months on considerations of safety.

(5) Standby arrangements equal to the biggest container shall always be available to transfer the toxic substances quickly into the stand by storage facility if any

defect develops in any of the container resulting in the release of toxic substances.

(6) Any storage facility constructed using non-metallic material such as fibre glass Reinforced plastics (FRP), all glass vessels etc., shall have adequate strength to withstand the stress, if any, exerted by the contents and shall be properly anchored, working platforms, access ladders; pipelines etc. used in such storage facility shall not have any support on the structure of the storage facility and shall be independently supported.

10. **Facility for isolation.**—The plant and equipment shall be so constructed and maintained as to enable quick isolation of plant or part of plant or equipment, with appropriate indication. One copy of the layout plan indicating the isolation facilities shall always be available with the security personnels, the maintenance and the health and safety personnel and these isolation facilities shall be checked for its effectiveness once in a month.

11. **Personal protective equipment.**—(1) All workers exposed to the hazards in the processes covered by this schedule shall be provided with appropriate and approved type of personal protective equipment. Such equipment shall be in a clean sterile and hygienic condition before issue.

(2) The occupier shall arrange to inform. educate and supervise all the workers in the use of personal protective equipment while carrying out the job.

(3) As regards any doubt regarding the appropriateness of any personal protective equipment the decision of the chief inspector will be final.

12. **Alarm** systems.—(1) Suitable and effective alarm systems giving audible and visible indications, shall be installed at the control room as well as in all strategic locations where process control arrangements are available so as to enable corrective action to be taken before the operational parameters exceed the predetermined safe levels or lead to conditions conductive for an out break of fire or explosion to occur. Such alarm systems shall be checked daily and tested every month at least once to

ensure its performance efficiency at all times.

(2) The Chief Inspector of Factories may direct such system to be installed in case of plants or processes where toxic materials are being used and spillage or leakage of which may cause wide spread poisoning in or around the plant.

13. **Control of escape of substances into the work atmosphere.**—(1) Effective arrangements such as, enclosure or by pass, or effecient exhaust draught, maintenance of negative pressure etc., shall be provided in all plants, containers, vessels, sewers drains, flues, ducts, and culverts, and burried pipes and equipment, to control the escape and spread of substances which are likely to give rise to fire or explosion or toxic hazards during normal working and in the event of accident or emergency.

(2) In the event of the failure of the arrangements for control resulting in the escape of substances in the work atmosphere immediate steps shall be taken into control the process in such a manner, that further escape is brought down to the safe level.

(3) The substances that would have escaped into the work atmosphere before taking immediate steps as required in sub-para (2), shall be rendered innocuous by diluting with air or water or any other suitable agent or by suitably treating the substances.

14. **Control of dangerous chemical reactions.**—Suitable provision, such as automatic and or remote control arrangements shall be made for controlling the effects of "dangerous chemical reactions." In the event of failure of control arrangements automatic flooding or blanketing or other effective arrangements shall come into operation.

15. **Testing, examination and repair of plant & equipment.**—(1) All parts of Plant, equipment and machinery used in the process which in the likely event of their failure may give raise to an emergent situation shall be tested by a competent person before commencing process and retested at an interval of two years or after carrying out repairs to it. The competent person shall identify the

parts of the plant, equipment and machinery required to be tested as aforesaid and evolve a suitable testing procedures, In carrying out the test as mentioned above in respect of pressure vessels or reaction vessels the following precautions shall be observed, namely:—

(a) before the test is carried out, each vessel shall be thoroughly cleaned and examined externally and as far as practicable, internally also for surface defects, corrosion and foregin matter. During the process of cleaning and removal of sludge, if any, all due precautions shall be taken against fire or explosion, if such sludge is of pyropheric nature or contains spontaneously combustible chemicals;

(b) as soon as the test is completed, the vessel shall be thoroughly dried internally and shall be clearly stamped with the marks and figures indicating the person by whom testing has been done, and the date of test; and

(c) any vessel which fails to pass the test or which for any other reason is found to be unsafe for use shall be destroyed or rendered unusable under intimation to the Chief Inspector;

(2) All parts of plant, equipment, machinery which in the likely event of failure may give rise to an emergent situation shall be examined once in a month by the competent person,

(3) Records of testing an examination referred to in paragraphs (1) and (2) shall be maintained as long as that part of the plant, equipment and machinery are in use,

(4) All repair work including alteration, modification and addition to be carried out to the plant, equipment and machinery shall be done under the supervision of a responsible person who shall evolve a procedure to ensure safety and health of persons doing the work. When repairs or modification is done on pipelines, and joints are required to be welded, but welding of joints shall be preferred,

Wherever necessary, the responsible person shall regulate the aforesaid work through a 'permit to work system'.

16. **Staging.**—(1) All staging that is erected for the purpose of maintenance work or repair work or for work connected with entry into confined spaces and used in the processes included in Appendix 'A', shall be stable, rigid and constructed out of substantial material of adequate strength. Such staging shall conform to the respective Indian standard specifications,

Staging shall not be erected over any closed or open vessel unless the vessel is so constructed and ventilated to prevent exposure of persons working on the stages.

(3) All the staging constructed for the purpose of this para shall have appropriate access which are safe and shall be fitted with proper hand rails to a height of one metre and toe board,

17. **Seating arrangements.**—The seating arrangements provided for the operating personnel working in processes covered in Appendix 'A' shall be located in a safe manner as to prevent the risk of exposure to toxic, flammable and explosive substances evolved in the work environment in the course of manufacture or repair or maintenance, either due to failure of plant and equipment or due to the substances which are under pressure, escaping into the atmosphere.

18. **Entry into or work in confined spaces.**—(1) The occupier of every factory to which the provisions of this schedule apply, shall ensure the observance of the following precautions before permitting any person to enter or work inside the confined spaces—

(a) identify all confined spaces and the nature of hazards that are encountered in such spaces. normally or abnormally, and arrange to develop the most appropriate safeguards for ensuring the safety and health of persons entering into or working inside, the confined spaces;

(b) regulate the entry or work inside the confined spaces through a 'permit to work sysetm' which

should include the safeguards so developed as required under sub clause (a) above;

(c) before testing the confined space for entry into or work, the place shall be rendered safe by washing or cleaning with neutralizing agents; or purging with steam or inert gases and making adequate forced ventilation arrangements or such measure which will render the confined space safe;

(d) shall arrange to carryout such test as are necessary for the purpose by a competent person and ensure that the confined space is safe for the persons to enter or work. Such testing shall be carried out as often as is necessary during the course of work to ensure its continued safety;

(e) shall arrange to educate and train the personnel who would be required to work in confined spaces about the hazard involved in the work. He shall also keep in readiness the appropriate and approved personal protective equipment including arrangements for rescue, resurrection and first aid, and shall arrange supervision of the work at all times by a responsible and knowledgeable person,

(2) The manager shall maintain a log book of all entry into or work in, confined space and such record shall contain the details of persons assigned for the work, the location of the work and such other details that would have a bearing on the safety and health of the persons assigned for this work. The log book so maintained shall be retained as long as the concerned workers are in service and produced to the inspector when demanded.

19. **Maintenance work etc.**—(1) All the work connected with the maintenance of plants and equipment including cleaning of empty containers which have held hazardous substances used in the processes covered in this schedule, shall be carried out under 'permit to work system' employing trained personnel and under the supervision of

responsible person, having knowledge of the hazards and precautions required to deal with them.

(2) Maintenance work shall be carried out in such a manner that there is no risk to persons in the vicinity or to persons who pass by. If necessary, the place of such work shall be cordoned off or the presence of unconnected persons effectively controlled,

20. **Permit to work system.**—The Permit to work system shall **inter alia** include the observance of the following precautions while carrying out any specified work to be subjected to the permit to work system:—

(a) all work subject to the permit to work system shall be carried out under the supervision of a knowledgeable and responsible person;

(b) all parts of plant or machinery or equipment on which permit to work system is carried out, shall remain isolated from other parts throughout the period of permit to work and the place of work including the parts of plant, machinery shall be rendered safe by cleaning, purging, washing etc;

(c) all work subject to the permit to work system shall have predetermined work procedure which integrate safety with the work. Such procedures shall be reviewed whenever any change occurs in material or equipment so that continued safety is ensured;

(d) persons who are assigned to carryout the permit to work system shall be physically fit in all respects taking into consideration the demands and nature, of the work before entering into the confined space. Such persons shall be adequately informed about the correct work procedures as well as the precautions to be observed while carrying out the permit to work system;

(e) adequate rescue arrangements wherever considered necessary and adequate first aid, rescue

and resurrection arrangements shall be available in good working condition near the place of work while carrying out the permit to work system, for use in emergency;

(f) adequate rescue arrangements wherever considered equipment shall be used while carrying out the 'permit to work system';

(g) after completion of work subject to the 'permit' to work system, the person responsible shall remove all the equipment and tools and restore to the original condition so as to prevent any danger while carrying out regular process.

21. **Safety sampling personnel.**—The occupier shall ensure the safety of persons assigned for collecting samples by instructing them on the safe procedures, Such personnel shall be provided with proper and approved personal protective equipment, if required.

22. **Ventilation.**—Adequate ventilation arrangements shall be provided and maintained at all times in the process area where dangerous or toxic or flammable or explosive substances could be evolved. These arrangements shall ensure that concentration, which are either harmful or could result in explosion, are not permitted to be built up in the work environment.

23. **Procedures for meeting emergencies.**—(1) The occupier or every factory carrying out the works covered in Appendix 'A', shall arrange to identify all types of possible emergencies that could occur in the processes during the course of work or while carrying out maintenance work or repair work. The emergencies so identified shall be reviewed every year.

(2) The occupier shall formulate a detailed plan to meet all such identified emergencies including arrangements for summoning outside help for rescue and fire fighting and arrangements for making available urgent medical facilities.

(3) The occupier shall send the list of emergencies and the details of procedures and plans formulated to

meet the emergencies, to the Chief Inspector of Factories.

(4) The occupier shall arrange to install distinctive and recognisable warning arrangements to caution all persons inside the plant as well as the neighbouring community, if necessary, to enable evacuation of persons and to enable the observance of emergency procedures by the persons who are assigned emergency duties. All concerned must be well informed about the warning arrangements and their meaning. The arrangements must be checked for its effectiveness every month.

(5) Alternate power supply arrangements shall be made and interlocked with the normal power supply system so as to ensure constant supply of power to the facilities and equipment meant for compliance with requirements of paragraphs 10, 11, 12, 13. 14, 18, 22 and this paragraph of part II, part III, part IV and part V of this schedule.

(6) The occupier shall arrange to suspend the further process work in a place where emergency is established and shall forthwith evacuate all persons in that area except workers who have been assigned emergency duties.

(7) All the employees of the factory shall be trained about the action to be taken by them including evacuation procedures during emergencies.

(8) All emergency procedures must be rehersed every three months and deficiencies, if any, in the achievements of the objectives shall suitably be corrected.

(9) The occupier shall arrange to have ten percent of the workers trained in the use of first aid fire fighting appliances and in the rendering of specific first aid measures taking into consideration the special hazards of the particular process.

(10) The occupier shall furnish immediately on request the specific chemical identity of the hazardous substance to the treating physician when the information

is needed to administer proper emergency or first aid treatment to exposed persons.

24. **Danger due to effluents.**—(1) Adequate precautions shall be taken to prevent the mixing of effluents from different processes and operations which may cause dangerous or poisonous gases to be evolved.

(2) Effluents which contain or give rise in the presence of other effluents to poisonous gases shall be provided with independent drainage systems to ensure that they may be trapped and rendered safe.

PART—III

Fire and explosions risks

1. **Sources of ignition including lighting installation.**—(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 or any other source of ignition or any naked light shall be installed or permitted to be used in the process area where there could be fire and explosion hazards.

(2) All hot exhaust pipes shall be installed outside a building and other hot pipes or hot surface or surfaces likely to become hot shall be suitable protected.

(3) The classification of work areas in terms of its hazard potential and the selection of electrical equipment or other equipment that could constitute a source of ignition shall be inaccordance with the respective Indian Standard.

(4) Where a flammable atmosphere may be prevalent or could occur, the soles of footwear worn by workers shall have not metal on them, and the wheels of trucks or conveyors shall be conductive types.

(5) All tools and appliances used for work in this area shall be of non sparking type.

(6) Smoking in process areas where there are risks of fire and explosion shall be prohibited, and warning notices in the language understood by majority of workers

shall be posted in the factory prohibiting smoking into specified areas.

2. **State electricity.**—(1) All machinery and plant particularly, pipelines and belt drives, on which static charge is likely to accumulate, shall be effectively earthed. Receptacles for fiammable liquids shall have metallic connections to the earthed supply tanks to prevent static sparking, where necessary, humidity shall be regulated.

(2) Mobil tanker wagons shall be earthed during filling and discharge, and precautions shall be taken to ensure that earthing is effective before such filling or discharge taken place.

3. **Lighting Protection.**—Lighting protection arrangements shall be fitted where necessary and shall be maintained.

4. **Process heating.**—The method of providing heat for a process likely to result in fire and explosion 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 flammable gas, vapour, or dust coming into contact with the flame, or exhaust gases, or other sources likely to cause ignition. Wherever possible, the heating arrangements shall be automatically controlled at a predetermin temperature below the danger temperature.

5. **Leakage of flammable liquids.**—(1) Provision shall be made to confine by means of bund walls, dykes sumps etc. possible leakages from storage vessels containing flammable liquid.

(2) Waste meterial in contact with flammable substances shall be disposed of suitably under the supervision of knowledgeable and responsible person.

(3) Adequate and suitable fire fighting appliances shall be installed in the vicinity of such vessels.

6. **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 above the atmospheric pressure, shall have attached to it a pressure gauge, and a proper safety valve or other equally efficient means to release the pressure. These appliances shall be maintained in good condition.

7. **Installation of pipeline etc.**—All pipelines carrying flammable or explosive substances shall be protec-

ted from mechanical damage shall be examined by a responsible person once in a week to detect any deterioration or defects, or accumulation of flammable or explosive substances, and record kept of any defect found and repairs made.

8. **Fire fighting systems.**—(1) Every factory employing 500 or more persons and carrying out processes listed in Appendix 'A' shall provide—

(a) Trained and responsible fire fighting squad so as to effectively handle the fire fighting and life saving equipment in the event of fire or other emergency. Number of persons in this squad will necessarily depend upon the size of risk involved, but in no case shall be less than 8 such trained persons to be available at any time.

The squad shll consist of watch and ward personnel, fire pumpman and departmental supervisors and operators trained in the operation of fire & emergency services.

(b) Squad leaders shall preferably be trained in a recognised Government's institution and their usefulness enhanced by providing residence on the premises.

(c) Squad personnel shall be provided with clothing and equipment including helmets, boots and belts.

(2) A musteroll showing the duties allocated to each member of the squad shall be prepared and copies supplied to each leader as well as displayed in prominent places so as to be easily available for reference in case of emergency.

(3) The pumpman shall be thoroughly conversant with the location of all appliances. He shall be responsible for maintaining all fire fighting equipments in proper working order. Any defect coming to his notice shall be immediately be brought to the notice of squad leader.

(4) As far as practicable, the fire pump room and the main gate (s) of the factory be connected to all manufacturing or storing areas through telephone interlinked and placed in a convenient location near such areas.

PART—IV

Risks of toxic substances

1. **Leakage.**—(1) All plants shall be so designed and constructed to prevent the escape of toxic substance. 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 toxic substances.

(2) Catch pits, and bund walls, dykes, or other suitable safeguards shall be provided to restrict the serious effects of such leakages. Catch pits shall be placed below joints in pipelines where there is danger involved to maintenance and other workers from such leakage.

2. **Drainage.**—Adequate drainage shall be provided and shall lead to cool action taken specifically provided for this purpose wherein deleterious material shall be neutaralised, treated or otherwise rendered safe before it is discharged into public drains or sewers.

3. **Covering of vessels.**—(1) Every fixed vessels of structure containing any toxic substances and not so covered as to eliminate all reasonable risk of accidental contact or any portion of the body of a worker, shall be so constructed as to avoid physical contact.

(2) Such vessels shall unless its edge is atleast 90 centimetres above the adjoining ground or platform, be securely fenced to a height of atleast 90 centimetres above such adjoining ground platform.

(3) Where such vessels adjoin and the space between them clear of any surrounding bricks or other work is either less than 45 centimeters in width is 45 or more centimeteres in width: but is not securely fenced on both sides to a height of atleast 90 centimetres, secure barriers shall be so placed 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.

4. **Continuous exhaust arrangement.**—(1) Any process evolving toxic vapour, gas, fume and substance shall have, efficient continuous exhaust draught, such arrangement shall be interlocked in the process control wherever possible.

(2) In the event of failure of continuous exhaust arrangement means shall be provided to automatically stop the process.

5. **Work Bench.**—All the work benches used in processes involving the manipulation of toxic substances, shall be graded properly and shall be made of smooth impervious surface which shall be washed daily after the completion of work.

6. **Waste disposal.**—(1) There shall be provided a suitable receptacle made of non-absorbable material with a tightly fitting cover for depositing waste material soiled with toxic substances and the contents of such receptacle shall be destroyed by burning or using other suitable methods under the supervision of a responsible person.

(2) During the course of manufacture, whenever any batch or intermediate products having toxicity is rejected on considerations of quality, sufficient precautions shall be taken to render them innouns or otherwise treat them or inactive them before disposal.

(3) The empty containers of toxic substances shall be cleaned thoroughly before disposal under the supervision of a responsible person.

PART—V

Special Provisions

1. **Special precautions for nitro or amino processes.**—(1) Unless the crystallised nitro or amino substances or any of its liquor is broken or agitated in a completely enclosed process so as not to give rise to dust or fume, such process shall be carried on under an efficient exhaust draught or by adopting any other suitable means in such a manner as to prevent the escape of dust or fume in the working atmosphere.

(2) No part of the plant or equipment or implements which was in contact with nitro or amino compounds

shall be repaired, or handled unless they have been emptied and thoroughly cleaned and decontaminated.

(3) Filling of containers with nitro or amino compounds shall be done only by using a suitable scoop to avoid physical contact and the drawing of the containers in the stove shall be done in such a manner that the hot and contaminated air from the stove is not drawn into the work room.

(4) Processes involving the steaming into or around any vessel containing nitro or amino compounds or its raw materials shall be carried out in such a manner that the steam or vapour is effectively prevented to be blown back into the working atmosphere.

(5) Suitable antidotes such as methylene blue injections shall always be available at designated placed of work for use during emergency involving the poisoning with nitro or amino compounds.

2. **Special precautions for "chrome processes".**— (1) Grinding and sieving of raw materials in chrome processes shall be carried on in such a manner and under such condition as to secure effective separation from any other processes and under an efficient exhaust draught.

(2) There shall be washing facilities located very near to places where wet chrome process such as leaching, acidification, sulphate settling, evaporation, crystallisation, centrifugation or packing are carried out, to enable quick washing of affected parts of body with running water.

(3) Weekly inspection of hand and feet of all persons employed in chrome process shall be done by a qualified nurse and record of such inspections shall be maintained in a form approved by the Chief Inspector of Factories.

(4) There shall be always available at designated places of work suitable ointment such as glycerine, veceline, etc. and water-proof plaster in a separate box readily accessible to the workers so as to protect against performation of nasal septum.

3. **Special precautions for processes carried out in**

all glass vessels.—(1) Processes and chemical reactions such as manufacture of vinyl chloride, benzyl chloride etc. which are required to be carried out in all glass vessels shall have suitable means like substantial wiremesh covering to protect persons working nearby in the event of breakage of glass vessels.

(2) Any spillage of emission of vapour from the all glass vessel due to breakage, shall be immediately inactivated or rendered innocuous by suitable means such as dilution with water or suitable solvents so as to avoid the risks of fire or explosion or health hazards.

4. **Special precautions for processes involving chlorate manufacture.**—(1) Crystallisation, grinding or packing of chlorate shall not be done in a place used for any other purpose and such places shall have hard, smooth and impervious surface made of non-cumbustible material. The place shall be thoroughly cleaned daily.

(2) The personal protective equipment like overall etc. provided for the chlorate workers shall not be taken from the place of work and they shall be thoroughly cleaned daily.

(3) Adequate quantity of water shall be available near the place of chlorate process for use during fire emergency.

(4) Wooden vessels shall not be used for the crystallisation of chlorate or to contain crystallised ground chlorate.

5. **Special precaution in the use of plant and equipments made from reinforced platics.**—(1) All Plant and equipment shall conform to appropriate Indian or any other National Standard.

(2) Care shall be taken during storage, transport, handling and installation of plant and equipments to avoid accidental damage:

(3) All Plant and equipments shall be installed in such a way as to ensure that loads are distributed as intended in design or as per the recommendations of the manufacturers.

(4) All pipe works shall be supported so that total loads local to the branches on the vessel or tank do not exceed their design values.

(5) After erection all plant and equipments shall be subjected to a pressure test followed by a thorough examination by competent person. The test and examination shall be as per relevant standard. A Certificate of test and examination by competent person shall be obtained and kept available at site.

(6) All plant and equipments shall be subjected to periodical test and examination and record maintained as per paragraph 15 in part II of this schedule;

(7) Plant and equipments during their use shall not be subjected to over filling or over loading beyond rated capacity.

PART—VI

Medical requirements

1. **Decontamination facilities.**—In all places where toxic substances are used in processes listed in Appendix 'A' the following provisions shall be made to meet an emergency:

(a) Fully equipped first aid box;

(b) Readily accessible means of drenching with water, parts of body of persons, and clothing of persons who have been contaminated with such toxic and corrosive substances, and such means shall be as shown in the table below:—

No. of persons employed at any time	No. of drenching showers
Up to 50 persons	2
Between 51 to 100	3
101 to 200	3+1 for every 50 persons thereafter
201 to 400	5+1 for every 100 persons thereafter.
401 and above	7+1 for every 200 persons thereafter

(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 all times.

2. **Occupational health centre.**—In all the factories carrying out processes covered in Appendix 'A' there shall be provided and maintained in good order and occupational health centre with facilities as per scale laid down hereunder :

(1) For factories employing upto 50 workers—

(a) the services of a qualified medical practitioner, hereinafter known as factory Medical Officer, available on a retainership basis, in his notified clinic near to the factory for seeking medical help during emergency. He will also carry out the pre-employment and periodical medical examinations as stipulated in paragraph 4 of this part.

(b) A minimum of five persons trained in first aid procedures, amongst whom at least one shall always be available during the working period:

(c) A fully equipped first aid box.

(2) For factories employing 51 to 200 workers—

(a) The occupational health centre shall have a room having a minimum floor area of 15 sq.m, with floor and walls made of smooth hard and impervious surface and shall be adequately illuminated, ventilated and equipped:

(b) A part time factory Medical Officer will be in over all charge of the Centre who shall visit the factory minimum twice in a week and whose services shall be readily available during emergencies.

(c) There shall be one qualified and trained dresser-cum-compounder on duty througout the working period.

(d) A fully equipped first aid box.

(3) For factories employing above 200 workers—

(a) There shall be one full time factory Medical Officer for factories employing upto 500 workers and one more Medical Officer for every 1000 workers or part thereof.

(b) The occupational health centre in this case shall have a minimum of 2 rooms each having a minimum floor area of 15 sq. m. with floors and walls made of smooth, hard and impervious surface and shall be adequately illuminated, ventilated and equipped.

(c) There shall be one trained nurse, one dresser-cum-compounder and sweeper-cum-ward boy throughout the working period.

(d) The occupational Health Centre in this case shall be suitably equipped to manage medical emergencies.

3. **Ambulance Van.**—(1) In every factory carrying out processes covered in Appendix 'A' there shall be provided and maintained in good condition a suitably constructed and fully equipped ambulance van as per appendix 'C' manned by a full time driver-cum-mechanic and a helper, trained in first aid for the purposes of transportation of serious cases of accidents or sickness unless arrangements for procuring such facility at short Notice during emergencies have been made with the nearby hospital or other places. The ambulance van shall not be used for any purpose other than the purpose stipulated herein and will always be available near the occupational Health Centre.

(2) The relaxation to procure ambulance Van from hereby places provided for in sub-para (1) above will not be applicable to factories employing more than 500 workers.

4. **Medical examination.**—(1) Workers employed in processes covered in Appendix 'A' shall be medically

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.

PART-VII

Additional Welfare Amenities.

1. **Washing facilities.**—(1) There shall be provided and maintained in every factory for the use of all the workers taps for washing, at the rate of one tap for every 15 persons including liquid soap in a container with tilting arrangements and nail brushes or other suitable means for effective cleaning such facilities shall be conveniently accessible and shall be kept in a clean and hygienic condition.

(2) If washing facilities as required above are provided for women such facilities shall be separate for them and adequate privacy at all times shall be ensured in such facilities.

2. **Mess room Facilities.**—(1) The occupier of all the factories carrying out processes covered in appendix 'A' and employing 50 workers or more, shall provide for all the workers working in a shift mess room facilities which are well ventilated and provided with tables and sitting facilities alongwith the provision of cold and hygienic drinking water facilities.

2. Such facilities shall include suitable arrangements for cleaning and washing and shall be maintained in a clean and hygienic conditions.

3. **Cloak room facilities.**—(1) The occupier of every factory carrying out any process covered in Appendix 'A' shall provide for all the workers employed in the process cloak room facilities with lockers. Each worker shall be provided with two lockers, one for work clothing and another separately for personal clothing and the lockers should be such as to enable the keeping of the clothing in hanging position

(2) The cloak room facilities so provided in pursuance of sub-para (1) shall be located as far as possible near

to the facilities provided for washing in pursuance of para 1 (1). If it is not possible to locate the washing facilities the cloak room facilities shall have adequate and suitable arrangement's for cleaning & washing.

4. **Special bathing facilities.**—(1) The occupier of any factory carrying out the process covered under appendix 'B' shall provide special bathing facilities for all the workers employed and such facilities shall be provided at the rate of 1 for 25 workers and part thereof, and shall be maintained in the clean and hygienic condition.

(2) The occupier shall insist all the workers employed in the process covered in Appendix 'B' to take bath after the completion of the days or shift work using the bathing facilities so provided and shall also effectively prevent such of those workers taking bath in any place other than the bathing focilities.

(3) Not-withstanding anything contained in sub-para (1) above the Chief Inspector may require in writing the occupier of any factory carrying out any other process for which in his opinion bathing facilities are essential from the health point of view, to provide special bathing facilities.

PART—VIII

(1) **Duties of workers.**—(1) Every worker employed in the processes covered in Appendix 'A' and Appendix 'B' shall not make any safety device or appliance or any guarding or fencing arrangement inoperative or defective and shall report the defective condition of the aforesaid arrangement as soon as he is aware of any such defect.

(2) Before commencing any work, all workers employed in processes covered in Appendix 'A' shall check their work-place as well as the machinery, equipment or appliance used in the processes and report any malfunction or defect immediately to the supervisor or any responsible person of the management.

(3) All workers shall cooperate in all respects with the management while carrying out any work or any

emergency duty assigned to them in pursuance of this schedule and shall always use all the personal protective equipment issued to them in a careful manner.

(4) All workers employed in the processes covered in Appendix 'A' or Appendix 'B' shall not smoke in the process area or storage area. If special facilities are provided by the management only such facilities should be used.

(5) All workers employed in the process covered in Appendix 'A' shall not remain in unauthorised place or carry out unauthorised work or improvise any arrangements or adopt short cut method or misuse any of the facilities provided in pursuance of the schedule, in such a manner as to cause risk to themselves as well as or to other employed.

(6) The workers shall not refuse undergoing medical examination as required under these rules.

PART—IX

Restrictions on the employment of young person under 18 years of age and women.

(1) The Chief Inspector of Factories may by an order in writing, restrict or prohibit the employment of women and young person under the age of 18, in any of the processes covered in Appendix 'A' of this schedule on considerations of health and safety of women and young persons.

(2) Such persons who are restricted or prohibited from working in the process due to the order issued in pursuance of sub-para (1) above shall be provided with alternate work which is not detrimental to their health or safety.

PART—X

Exemptions.

1. **Power of exemption.**—The State Government or subject to the control of the State Government, the Chief

Inspector may exempt from the compliance with any of the requirements of this schedule partly or fuliy, any foctory carrying out processes covered in appendix 'A', if it is clearly and satisfactorily established by the occupier that the compliance with any of the requirement is not necessary to ensure the safety and health of persons employed suitable and effective alternate arrangements are available to any of the requirements covered in this schedule.

APPENDIX 'A'

Any works or that part of works in which:—

(a) The manufacture, manipulation or recovery of any of the following is carried on:—

(i) Sodium, potassium, iron, aluminium, cobalt: nickel, copper, arsenic, antimony, chromium, zinc, selenium, magnesium, cadmium, mercury, beryllium and their organic and inorganic salts, alloys, oxides and any hydroxides;

(ii) ammonia, ammonium hydroxide and salts of ammonium;

(iii) the organic or inorganic compounds of sulphurous, sulphuric, nitric, nitrous hydrochloric, hydrofluric, hydroiodic, hydrosulphuric, hydrobromic, boric;

(iv) Cyanogen compounds, cyanide compounds, cyanate compounds;

(v) Phosphorous and its compounds other than organo phosphorous insecticides;

(vi) Chlorine.

(b) Hydrogen sulphide is evolved by the decomposition of metallic sulphides, or hydrogen sulphide is used in the production of such sulphides;

(c) bleaching powder is manufactured or chlorine gas is produced in chloralkali plants;

(d) (i) gas tar or coal tar or bitumen or shale oil asphalt or any residue of such tar is deistilled or is used in any process of chemicals manufacture;

(ii) tar based synthetic colouring matters or their intermediates are produced;

(e) nitric acid is used in the manufacture of nitro compounds;

(f) explosives are produced with the use of nitro compounds;

(g) aliphatic or aromatic compounds or their metallic and non-metallic derivatives or substituted derivatives, such as chloroform, ethylene glycol, formaldehyde, benzyle chloride, phenol, methyl ethyl keytone peroxide, cobalt carbonyl, tungsten carbide etc. are manufactured or recovered.

APPENDIX 'B'

Concerning special bathing accommodation in pursuance of Para 4 Part-IV.

1. Nitro or amino processes

2. All chrome processes.

3. Process of distilling gas or coal tar or processes of chemical manufacture in which tar is used.

4. Processes involving manufacturing, manipulation, handling or recovery of cyanogen compound, cyanide compound, cyanate compounds.

5. Processes involving manufacture of bleaching powder or production of chlorine gas in chloralkali plants.

6. Manufacture, manipulation or recovery of nickel and its compounds.

7. All processes involving the manufacture, manipulation or recovery of aliphatic or aromatic compounds or their derivatives or substituted derivatives.

APPENDIX 'C'

Ambulance

Ambulance should have the following equipments:—

General

— An wheeled stretcher with folding and adjusting devices; Head of the stretcher must be capable of being tilted upword;

— Fixed suction unit with equipments;
— Fixed oxygen supply with equipments;
— pillow with case;
— Sheets;
— Towels;
— Blankets;
— Emeis bag;
— Bed Pan;
— Urinal;
—Glass;

Safety equipments:—

— Flares with life of 30 minutes;
— Flood lights;
— Flash lights;
— Fire extinguisher dry powder type;
— Insulated gauntlets.

Emergency Care equipments:—

Resucilation:

— Portable suction unit;

— Portable oxygen unit;

— Bag valve mask, hand operated artificial ventilation unit;

— Airways;

— Mouth gags;

— Tracheostomy adaptors;

— Short spine board;

— I. V. Fluids with administration unit;

— B. P. Manometer;

— Cugg;

— Stethoscope.

Immobilization:—

— Long & Short padded boards;

— Wire ladder splints;

— Triangular bandage;

— Long & Short spine boards;

Dressings:—

— Gauge pads 4″×4″

— Universal dressing 10″×36″

— Roll of aluminium foils;

— Soft roller bandages 6″×5 yards;

— Adhesive tape in 3″ rolls;

— Safety pains;

— Bandage sheets;

— Burn sheet.

Poisoning:—

— Syrup of Ipeace;
— Activated charcoal; Prepacketed in doses.
— Snake bite Kits;
— Drinking water.

Emergency medicines:—

— As per requirement (Under the advice of medical officer only).

29. For the existing paragraph 9 and 10 of Schedule XI of rule 100 of the said rules, the following shall be substituted, namely:—

9. **Medical facilities and records of examinations and tests.**—(1) The occupier of every factory in which manufacture of pottery is carried on, shall:—

(a) employ a qulified medical practitioner who is in the opinion of the Chief Inspector capable by virtue of his qualification, training and experience, conducting a thorough medical check up against the hazards involved and to diagnose and treat the industrial diseases which are likely to creep in such type of process and,

(b) provide to the said medical practitioner 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 practitioner shall be maintained in a seperate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector."

10. **Medical examination by the Certifying Surgeon.—**

(1) Every worker employed in any process mentioned under paragraphs 3, shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for lead in urine and blood, ALA in urine, haemoglobin content stippling of cells and pulmonary functions tests and chest X-rays for workers engaged in processes mentioned in clauses (i) and (xiv) of paragraph 2 and pulmonary function tests and chest X-rays for the others. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) All persons employed in any of the processes included under sub-paragraph (2) (i) and (xiv) shall be examined by a Certifying Surgeon once in every three calendar months. Those employed in any other processes mentioned in the remaining sub-paragraphs of paragraph 2 shall be examined by a Certifying Surgeon once in every twelve calendar months. Such examinations in respect of the workers shall include all the tests as specified in sub-paragraph (1) except Chest X-Rays which will be once in 3 years.

(3) The certifying Surgeon after examining a worker shall issue Certificate of Fitness in Form 30. 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-paragraph (1) and (2), including the nature and the results of the tests, shall olso be entered by the

Certifying Surgeon in a health register in Form No. 19.

(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 the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance threin would involve special danger to the health of the worker, he shall make a 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 person is unfit for work in the said processes.

(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 said processes unless the Certifying Surgeon after further examination, again certifies him fit for employment in those processes."

30. **In Schedule XII of rule 100 of the said rule.—(i)** For the existing paragraph 10 of the said schedule the following shall be substituted, namely:—

"10. **Medical facilities and records of examinations and tests.**—(1) The occupier of every factory to which the schedule applies shall:—

(a) Employ a qualified medical practitioner who is in the opinion of the Chief Inspector capable by virtue of his qualification Training and experience, conducting a thorough medical check up against the hazards involved and to diagnose and treat the industrial disease which

are likely to creep in such type of processes and

(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examinations and appropriate test 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."

(ii) after the existing paragraph 10 of the said schedule, the following shall be added namely:—

"**10 A-Medical examination by Certifying Surgeon.**— (1) Every worker employed in a lead process shall be examined by a Certifying Surgeon within a 15 days of his first employment such examination shall include tests for lead in urine and blood ALA in urine, haemoglobin, stippling of cells and steadiness test. No worker shall be allowed to work after 15 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 process shall be re-examied by a Certifying Surgeon at least once in every six calendar months. Such re-examination shall, wherever the Certifying Surgeon considers appropriate, include tests as specified in sub-paragraph (1).

(3) The Certifying Surgeon after examining a worker shall issue a certificate of Fitness in Form 30. 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 managers of the factory. The record of each examination carried out

under sub-paragraph (1) and (2), including the nature and the results of the tests, shall also be entered by the certifying Surgeon in a health register in Form 19.

(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 the opinion that worker is no longer fit for employment in the said process on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should include the period for which he considers that the said person is unfit for work in the said processes.

(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 said processes unless the Certifying Surgeon, after further examination; again certifies him fit for employment in these processes."

31. **In Schedule XVII of rule 100 of the said rules.—**

(i) in clause (a) of paragraph 6 of the said schedule for the expression containers and when they are to be transported the expression "containers for through pipes and when they are to be transported in containers," shall be substituted.

(ii) in clause (a), of paragraph 7 of the said schedule for the expression "suitable tilting or lifting device", the expression "tilting lifting; or pumping arrangements" shall be substituted.

32. For the paragraph 13 & 14 of schedule XVIII of rule 100 of the said rule, the following shall be substituted;

namely:—

"13. **Medical facilities and records of examinations and tests.**—(1) The occupier of every factory to which the schedule applies, shall—

(a) Employ a qualified medical practitioner who is in the opinion of the Chief Inspector capable by virtue of his qualification training and experience conducting a thorough medical check up against the hazards involved and to diagnose and treat the industrial disease which are likely to creep in such type of processes and;

(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examinations and appropriate test carried out by the said medical practitioner shall be maintained in separate register approved by the Chief Inspector of Factories, which shall be kept readily available for Inspection by the Inspector."

"14. **Medical Examination by the Certifying Surgeon.**—(1) Every worker employed in the said processes shall be examined by the Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for detection of methemoglobin in blood (Haematological tests) paranitrophenol in urine, pulmonary function tests and C.N.S. tests. No worker shall be allowed to work after 15 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 re-examined by the Certifying Surgeon at least once in every six calendar months and such re-examination shall, wherever the

Certifying Surgeon considers appropriate, include all the tests specified in sub-paragraph (1).

(3) The certifying Surgeon after examining a worker, shall issue a certificate of Fitness in Form 30. 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 the nature and the results of these tests, shall also be entered by the Certifying Surgeon in a health register in Form 19.

(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 the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make 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 to work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapaciated in the opinion of the certifying surgeon, in which case the person affected shall be suitably rehabiliated.

(6) No person who has been found unfit to wok as said in 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 thoes processes."

33. **In Schedule XIX of rule 100 of the said rules:—**

(i) For clause (b) of paragraph 5 of the said schedule, the

following shall be substituted, namely:—

"(b) No machinery or equipment in any 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."

(ii) In sub-paragraph (c) of paragraph 13 of the said schedule after the words "inert gas" and before the words "before opening" the words "or steam" shall be inserted.

(iii) After paragraph 17 of the said schedule, the following paragraph shall be added, namely:—

"18. **Exemption:**—If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes of for any other reasons, all or any of the provisions of this schedule is not necessary for the protection of the workers in factory, the Chief Inspector may by a certificate in writing (which he may in his discreation revoke at any time) exempt such factory from all or any of such provision subject to condition, if any, as he may specify therein."

34. **In Schedule XX of rule 100 of the said rules:—**

(i) For paragraph 6 of the said schedule, the following shall be substituted, namely:—

"6. **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 who is in the opinion of the Chief Inspector capable by virtue of his qualification, training and experience, conducting a thorough medical check up against the hazards involved and to diagnose and treat the Industrial diseases which are likely to creep in such type of processes, and

(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The recard 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.

(ii) after paragraph 6 of the said schedule, the following shall be added, namely:—

"6A. **Medical examination by the Certifying Surgeon**.—(1) Every worker employed in any manganese process shall be medically examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include, tests for detection of serum calcium, serum phosphate and manganese in blood and urine and also include steadiness tests and other neuro-muscular coordination tests. No workers shall be allowed to work after 15 days of his first employment in the factory unless certified for such employment by the Certifying Surgeon.

(2) Every worker employed in a manganese process shall be re-examined by a Certifying Surgeon at least once in every three calendar months and such examination shall wherever the Certifying Surgeon considers appropriate, include all the tests in sub-paragraph (1).

(3) The Certifying Surgeon after examining worker, shall issue a certificate of fitness in Form 30. 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 the nature and

the results of these tests, shall also be entered by the Certifying Surgeon in a health register in Form 19.

(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 the opinion that the worker is no longer fit for employment in the said process on the ground that continuance therein would involve special danger to the health of the worker, he shall make 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 to work in the said process.

(6) No person who has been found unfit to work as said in 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."

35. **In Schedule XXI of rule 100 of the said rules.**— (i) Sub-paragraph (a), (b) and (c) of paragraph 3 of the said schedule shall be renumbered as (b), (c) and (d) and before the sub-paragraph (b) as so renumbered, the following sub-paragraph shall be inserted, namely:—

"(a) Use of benzene and substances containing benzene is prohibited in the following processes:—

(i) Manufacture of varnishes, paints and thinners, and

(ii) cleaning and degreasing operations."

(ii) For paragraph 13 of the said schedule, the following shall be substituted, namely:—

"13. **Medical facilities and records of examinations and tests.**—(1) The occupier of every factory to

which the schedule applies shall—

(a) employ a qualified medical practitioner who is in the opinion of the Chief Inspector capable by virtue of his qualification, training and experience, conducting a thorough medical checkup against the hazards involved and to diagnose and treat the industrial diseases which are likely to creep in such type of processes; and

(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in 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 kept readily available for inspection by the Inspector."

(iii) After paragraph 13 of the said schedule, the following shall be added, namely:—

"(1) Every worker employed in processes mentioned in paragraph 1, shall be examined by the Certifying Surgeon within 15 days of his first employment, such examination shall include tests for detection of phenol in urine and determination if urinary sulphide ratio and C.N.S. and haemotological tests. No. worker shall be allowed to work after 15 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 twelve calendar months and such examination shall, wherever the Certifying surgeon considers appropriate, include the tests specified in sub-paragraph (1). Further, every worker shall also be examined once in every three calendar months by the factory medical officer.

(3) The certifying surgeon after examining a worker, shall issue a Certificate of fitness in Form No. 30.

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 the nature and the results of these tests, shall also be entered by the Certifying Surgeon in a health register in Form 19.

(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 the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his finding 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 person is unfit to work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapaciated 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 as said in 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."

36. **In Schedule-XXIII of rule 100 of the said rules.—**

(i) sub-paragraph (v) of paragraph 1 of said schedule shall be deleted.

(ii) For paragraph 7 and 8 of the said schedule, the following shall be substituted, namely:—

"7. **Medical facilities and records of examination and test.**—(1) the occupier of every

factory to which the schedule applies, shall—

(a) empoly a qualified medical practitioner who is in the opinion of the Chief Inspector capable by virtue of his qualification, training and experience, conducting a thorough medical check up against the hazards involved and to diagnose and treat the industrial disease which are likely to creep in such type of process, and;

(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in 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."

"8. **Medical examination by the Certifying Surgeon—**

(1)Every worker employed in the processes mentioned in paragraph 1 shall be examined by the Certifying Surgeon within 15 days of his first employment. Such examination in respect of Halogenated pesticides shall include test for determination of the chemical in blood and in fat tissues EEG abnormalities and memory tests. In respect of organo phosphorous compounds, such examination shall include test for depression of cholinesterase in plasma and red blood cells. No worker shall be allowed to work after 15 days of his first employment in the factory unless cerified fit

for such employment by the Certifying Surgeon.

(2) Every worker employed in the said process shall be re-examined by a Certifying Surgeon at least once in every six calendar months. Such examination shall, wherever the certifying Surgeon considers appropriated, include the test specified in sub-paragraph (1). Further every worker employed in the said processes shall also be examined once in every three months by the factory medical officer.

(3) The Certifying Surgeon after examining a worker shall issue a Certificate of fitness in Form No. 30, The record of examination & 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 these tests, shall also be entered by the Certifying Surgeon in a health register in Form. 19.

(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 the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a 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 person is unfit to work in the said processes.

(6) No person who has been found unfit to work as said in 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."

37. In rule 100 of the said rules;—

(i) after item No. 23 in sub-rule (1), the following item shall be inserted, namely:—

"24. Operations involving high Noise levels.

25. Manufacture of Rayon by Viscose Process.

26. Highly Flammable Liquid and Flammable Compressed Gases.

27. Operation in Foundries.

(ii) after schedule XXVI the following new schedule shall be added, namely:—

"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 processes are carried on:—

(a) the production of iron castings or, as the case may be, steel castings by castings in moulds made of sand, loam, moulding composition or other mixture of materials, or by shell moulding, or by centrifugal casting and any process incidental to such production;

(b) the production of non-ferrous castings by casting metal in moulds made of sand, loam, metal, moulding composition or other material or mixture of materials or by shell mouldings, die-

casting (including pressure die-casting), centrifugal casting of 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 or other similar products, and the stripping thereof,

but shall not apply with respect to:—

(a) any process with respect to the smelting and manufacture of lead and the Electric Accumulators;

(b) any process for the purposes of a printing works; or

(c) any smelting 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 leadbased 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 respirators" means a respirator of a type approved by the Chief Inspector;

(b) "cupola or furnance" 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 castings after 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 shall moulding or by centrifugal casting in metal moulds lined with sand, or die casting including pressure die casting, 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, knock out operations and dressing or fettling operation;

(e) "knock- out operations" means all methods of removing casting 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 furnance 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 more than 5 percent 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 fireclay

(d) Sillimanite

(e) Calcined or fuses alumina

(f) Olivine

(g) Natural sand

(2) Dust or other matter deposited from a fettling or blasting processes 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 requirement 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, metal scrap or other materials or residues, suitable bins, bunkers or other receptacles shall be provided for the purpose of such storage.

5. **Construction of floors.**—(1) Floors of indoor work-places 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 work place 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

praticable, be maintained in an even and firm condition.

6. **Cleanliness of indoor workplaces.**—(1) All accessible parts of the walls of every indoor work place in which the processes are carried on and of everything affixed to those wall shall be effectively cleaned by a suitable method to a height of not less than 4.2 metre 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 of this paragraph including the date (which shall be not less than five months or more than nine months after the last immediately preceding washing, cleaning or other treatment).

(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 one other than parts which are of sand; and the parts which are of sand shall 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 on 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 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 work-room to which this paragraph applies constructed, reconstructed or converted for use as such after the making of this schedule and, so far as reasonably practicable, in every other work-room to which this paragraph applies, sufficient and clearly defined main/gangways shall be provided and properly maintained which:—

(a) shall have as 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 used exclusively at least 600 millimetres wider than the over-all width or 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 simaltaneous travel in both directions by men carrying hand shanks, at least 1.8 m. in width.

(2) In workroom to which this paragraph applies 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 bull ladles by not more than two men per ladle, shall be at least 460 millimetres wide, but where any moulds alongside the aisle are more than 510 millimetres above the floor of the aisle. The aisle shall not be less than 600 millimeters wide;

(d) if molten metal is carried in hand ladles or bull ladles by more than two men per ladle, shall be at least 760 millimetres no correction regd. wide;

(e) if molten metal is carried in crane, trolley or truck ladles, shall be of the width adequate for the safe performance of the work.

(3) Requirements of sub-paragraph (1) and (2) shall not apply to any workroom or part of a workman if, by reason of the nature of the work done therein, the floor of that work-room or, as the case may be, that part of a work room 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 lines passing through the delivery end of any spout of a cupola or furnance, 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 of maintenance of a cupola or furnace that work should be carried out within that distance of that work is 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 is 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 use of such fires is unavoidable.

(3) Mould stoves, core stoves and annealing furnace 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, affective and suitably 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 reasonably practicable, effective and suitable local exhaust ventilation is provided, or where compliance with this requirement is not reasonably practicable, a high standard of general ventilation is provided.

(5) All dressing or fettling 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 a 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 plant used for the purpose of extracting, suppressing or controlling dust or fumes shall be properly maintained.

(2) All ventilating plant 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 person 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 available for inspection by an Inspector. Any defect found on any such examination and test shall be immediately report 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) has been worn by a person shall be worn by another person if it has not since been thoroughly cleaned and desinfected.

(3) Persons who for any of their time—

(a) work at a spout of or attend to, a cupola or furnace in such circumstances that material thereform may come into contact with the body, being material at such a temperature that its contact with the body would cause a burn; or

(b) are engaged in, or in assisting with, the pouring of molten metal; or

(c) carry by 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 worn by them prevent, so far as reasonably practicable, risk of burns to this feet and ankles.

(4) Where appropriate, 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 less 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 wash place under cover with either—

(i) a trough with imperious surface fitted with a waste pipe without plug, and of sufficient length to allow at least 60 centimetre for every 10 such 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 centimetres; or

(ii) at least one 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 metres a part; 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 or persons and maintained in a clean and orderly condition.

14. **Disposal of dross and skimmings.**—Dross and skimmings 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 produhts 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 material) and equipment so left only temporarily or occasionally) shall be so arranged and placed as to avoid unnecessary risk. 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 roadways or pathways shall have a firm and even surface and shall, so far as reasonably practicable be kept free from obstruction.

17. **Medical facilities and records of examinations and tests.**—(1) The occupier of every factory to which the schedule applies, shall—

(a) employ a qualified medical practitioner who is in the opinion of the Chief Inspector capable by virtue of his qualifications, training and experience, conducting a thorough medical check-up against the hazards involved and to diagnose and treat the industrial diseases which are likely to creep in such type of process, and

(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in 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 alsowed to work after 15 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 atleast once in every twelve months. Such examination shall, wherever the Certifying Surgeon considers appropriate, include all the test as specified in sub-paragraph (1) except chest X-ray which will be once in 3 years.

(3) The Certifying Surgeon after examining a worker, shall issue a Certificate of Fitness in Form 30. 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-paragraph (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in health register in Form 19.

(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 the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a 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 person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapaciated 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 as said in sub-paragraph (5) above shall be re-employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certiifies him fit for employment in those processes.

19. **Exemption:**—If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or in frequency of the processes or for any other reason, all or any of the provisions at this schedule is not necessary for protection of the workers in the factory, the Chief Inspector may by a certificate in writing, which be 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.

38. In the existing rule 102 of the said rules, for the words "forthwith" the words "within a month" shall be substituted.

39. In rule 105 of the said rules the existing sub-rule (1), (2), (3) and (4) shall be deleted.

40. For the Form No. 23 appended to the said rules, the following shall be substituted, namely:—

"FORM 23

Prescribed under Rule 105 (i)

ANNUAL RETURN

For the year ending 31st December, 19.....

1. Registration number of Factory :
2. Name of Factory :
3. Name of Occupier :
4. Name of the Manager :
5. District :
6. Full postal address of Factory :
7. Nature of Industry :

Number of workers and particulars of employment

8. No. of days worked in the year :
9. No. of man-days worked during the year :
   (*a*) Men :
   (*b*) Women :
   (*c*) Children :
10. Average number of workers employed daily (see explanatory note) :
    (*a*) Adults (*i*) Men :
    (*ii*) Women :
    (*b*) Adolescents (*i*) Male :
    (*ii*) Female :
    (*c*) Children (*i*) Male :
    (*ii*) Female :
11. Total number of man-hours worked including overtime
    (*a*) Men :
    (*b*) Women :
    (*c*) Children :
12. Average number of hours worked per week (see explanatory note) :
    (*a*) Men :
    (*b*) Women :
    (*c*) Children :
13. (*a*) Does the factory carry out any process or operations declared as dangerous under section 87 (see Rule 100)

(*b*) If so, give the following information:—

Name of the dangerous process or operations carried on.	Average number of person employed daily in each of the processes or operations given in Col. 1
1	2
(*i*)	
(*ii*)	
(*iii*) etc.	

LEAVE WITH WAGES

14. Total number of workers employed during the year :

(*a*) Men
(*b*) Women
(*c*) Children

15. Number of workers who were entitled to annual leave with wages during the year

(*a*) Men
(*b*) Women
(*c*) Children

16. Number of workers who were granted leave during the year

(*a*) Men
(*b*) Women
(*c*) Children

17. (*a*) Number of workers who were discharged, or dismissed from the service, or quit employment or were superannuate, or died while in service during the year :
(*b*) Number of such workers in respect of whom wages in lieu of leave were paid :

18. (*a*) Number of safety officers required to be appointed as per notification under section 40-B.
(*b*) Number of safety officers appointed :

AMBULANCE ROOM

19. Is there an ambulance room provided in the factory as required under section 45 ?

CANTEEN

20. (*a*) Is there a canteen provided in the factory as required under section 46 ? :
(*b*) Is the canteen provided/managed
(*i*) departmentally, or
(*ii*) through a contractor ?

SHELTERS OR REST ROOMS & LUNCH ROOMS

21. (*a*) Are there adequate and suitable shelters or rest rooms provided in the factory as required under section 47 ? :

(*b*) Are there adequate and suitable lunch rooms provided in the factory as required under section 47 ? :

CRECHES

22. Is there creche provided in the factory as required under section 48 ? :

23. (*a*) Number of Welfare Officers to be appointed as required under section 49 :

(*b*) Number of Welfare Officers appointed :

ACCIDENTS

24. (*a*) Total number of accidents (See explanatory notes) :

(*i*) Fatal
(*ii*) Non-fatal

(*b*) Accidents in which worker returned to work during the year to which this return relates

(*i*) Accidents (workers injured) occurring during the year in which injured workers returned to work during the same year

(*aa*) Number of accidents :
(*bb*) Man-days lost due to accidents :

(*ii*) Accidents (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 accidents :
(*bb*) Man-days lost due to accidents :

(*c*) Accidents (workers injured) occurring during the year in which injured workers did not return to work during the year to which the return relates :

(*i*) Number of accidents
(*ii*) Man-days lost due to accidents :

Certified that the information furnished above is to the best of my Knowledge and belief, Carrect.

Signature of the Manager.

Date :

Explanatory Notes :

1. The average number of workers employed daily should be calculated by dividing the aggregate number of attendance on working day (that is, man-days worked by the number of working days in the year. In reckoning attendance, by temporary as well as permanent employees should be counted, and all employees should be included, whether they are employed directly or under contractors. Attendance on separate shifts (e. g. night and day shifts) should be counted separately. Days on which the factory was closed for whatever cause and days on which the manufacturing processes were not carried on should not be treated as working days. Partial attendance for less than half a shift on a working days should be ignored, while attendance for half a shift or more on such day should be treated as full attendance.
2. For seasonal factories, the average number of workers employed during the working seasons and the off season should be given separately, similarly the number of days worked and average number of man-hours worked per week during the working and off-season should be given separately.
3. The average number of hours worked per week means the total actual hours worked by all workers during the year excluding the rest inverals but including overtime work divided by the product of total number of workers employed in the factory during the year and 52. In case the factory has not worked for the whole year, the number of weeks during which the factory worked should be used in place of the figure, 52.
4. Every person killed or injured should be treated as one separate accident. If in one occurrance six persons were injured or killed, it should be counted as six accidents.
5. In Item 24 (a), the number of accidents which took place during the year should be given in case of non-fatal accidents only those accident which

prevented workers from working for 48 hours or more, should be indicated."

41. After the existing Form No. 34 appended to the said rules the following shall be added, namely:—

"FORM 35

prescribed under sub-rule(4) of rule 65(I)

RECORD OF EYE EXAMINATION

Serial Number	Department/Work	Name of Worker	Sex	Age (on last birthday)
1	2	3	4	5

Occupation		Examination of eye sight		Sign. of Opthalmo-logist	Remarks
Nature	Date af employment	Date	Result		
6	7	8	9	10	11

By Order of the Governor,
बार. पी. तिवाडी,
Special Secretary to the Government.

Government Central Press, Jaipur.