

MANUFACTURE, STORAGE AND IMPORT OF HAZARDOUS CHEMICAL RULES

S.O. 966(E).-In exercise of the powers conferred by Section 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules, namely .-

1. Short title and commencement.

- (1) These rules may be called the Manufacture, Storage and import of Hazardous Chemical Rules, 1989.
- (2) They shall come into force on the date of their publication in the official Gazette.

2. Definitions.

In these rules, unless the context otherwise requires.-

- (a) "Act" means the Environment (Protection) Act, 1986 (29 of 1986);
- (b) "Authority" means an authority mentioned in Column 2 of Schedule 5;
- (c) "export" with its grammatical variations and cognate expression, means taking out of India to a place outside India;
- (d) "exporter" means any person under the jurisdiction of the exporting country and includes the exporting country who exports hazardous chemical;
- (e) "hazardous chemical" means-
 - (i) any chemical which satisfies any of the criteria laid down in Part I of Schedule I and is listed in Column 2 of Part II of this Schedule;
 - (ii) any chemical listed in Column 2 of Schedule 2;
 - (iii) any chemical listed in Column 2 of Schedule 3;
- (f) "import" with its grammatical variations and cognate expression, means bringing into India from a place outside India;
- (g) "importer" means an occupier or any person who imports hazardous chemicals;
- (h) "industrial activity" means-
 - (i) an operation of process carried out in an industrial installation referred to in Schedule 4 involving or likely to involve one or more or hazardous chemicals and includes on-site storage or on-site transport which is associated with that

operation or process, as the case may be; or

(ii) isolated storage; or

(iii) pipeline;

(i) "isolated storage" means storage of a hazardous chemical, other than storage associated with an installation on the same site specified in Schedule 4 where that storage involves at least the quantities of that chemical set out in Schedule 2;

(j) "major accident" means an occurrence including any particular major emission, fire or explosion involving one or more hazardous chemicals and resulting from uncontrolled developments in the course of an industrial activity or due to natural events leading to serious effects both immediate or delayed, inside or outside the installation likely to cause substantial loss of life and property including adverse effects on the environments;

(k) "pipeline" means a pipe (together with any apparatus and works associated therewith) or system of pipes (together with any apparatus and work associated therewith) for the conveyance of a hazardous chemical other than a flammable gas as set out in Column 2 of Part II of Schedule 3 at a pressure of less than 8 bars absolute: the pipeline also includes inter-state pipe

(l) "Schedule" means Schedule appended to these rules;

(m) "site" means any location where hazardous chemicals are manufactured or processed, stored, handled, used, disposed of and includes the whole of an area under the control of an occupier and includes pier, jetty or similar structure whether floating or not;

(n) "Threshold quantity" means,-

(i) in the case of a hazardous chemical specified in Column 2 of Schedule 2, the quantity of that chemical specified in the corresponding entry in Columns 3 & 4;

(ii) in the case of hazardous chemical specified in Column 2 of Part I of Schedule 3, the quantity of that chemical specified in the corresponding entry in Columns 3 & 4 of that part;

(iii) in the case of substances of a class specified in Column 2 of Part 11 of Schedule 3, the total quantity of all substances of that class specified in the corresponding entry in Column 3 & 4 of that part

3. Duties of authorities.

Subject to the other provisions of these rules, the authority shall perform duties as specified in Column 3 of Schedule 5.

4. General responsibility of the occupier during industrial activity.

(1) This rule shall apply to,-

(a) an industrial activity in which a hazardous chemical, which satisfies any of the criteria laid down in Part I of Schedule I and is listed in Column 2 of Part II of this Schedule is or may be involved; and

(b) isolated storage in which there is involved a threshold quantity of a hazardous chemical listed in Schedule 2 in Column 2 which is equal to or more than the threshold quantity specified in the Schedule for that chemical in Column 3 thereof.

(2) An occupier who has control of an industrial activity in term of sub-rule (1) shall provide evidence to show that he has,-

(a) identified the major accident hazards; and

(b) taken adequate steps to -

(i) prevent such major accidents and o limit their consequences to persons and the environment;

(ii) provide to The persons working on the site with the information, training and equipment including antidotes necessary to ensure their safely.

5. Notification of Major accident.

(1) Where a major accident occurs on a site or in a pipe line, the occupier shall forthwith notify the concerned authority as identified in Schedule S of that accident, and furnish thereafter to the concerned authority a report relating to the accidents in installments, if necessary, in Schedule 6.

(2) The concerned authority shall on receipt of the report in accordance with sub-rule I of this rule shall undertake a full analysis of the major accident and send the requisite information to the Ministry of Environment and Forests through appropriate channel.

(3) Where an occupier has notified a major accident to the concerned authority under respective legislation, he shall be deemed to have complied with the requirements as per sub-rule I of this rule.

6. Industrial activity to which rules 7 to 15 apply.

(1) Rules 7 to 15 shall apply to,-

(a) an industrial activity in which there is involved a quantity of hazardous chemical listed in Column 2 of Schedule 3 which is equal to or more than the quantity specified in the entry for that chemical in Columns 3 & 4 (Rules 10-12 only for Column 4) and

(b) isolated storage in which there is involved a quantity of a hazardous chemical listed in Column 2 of Schedule 2 which is equate to or more than the quantity specified in the entry for that chemical in Column 1

(2) For the purposes of rules 7 to 15, or

(a) "new industrial activity" means an industrial activity which-

(i) commences after the date of coming into operation of these rules; or

(ii) if commenced before that date is an industrial activity in which a modification has been made which is likely to cover major accident hazards and that activity shall be deemed to have commenced on the date on which the modification was made;

(b) an "existing industrial activity" means an industrial activity which is not a new industrial activity

7. Notification of sites.

(1) An occupier shall not undertake any industrial activity unless he has submitted A written report to the concerned authority containing the particulars

specified in Schedule 7 at least 3 months before commencing that activity or before such shorter time as the concerned authority may agree and for the purpose of this paragraph an activity in which subsequently there is or is liable to be a threshold quantity or more of an additional hazardous chemical shall be deemed to be a different activity and shall be notified accordingly

(2) No report under sub-rule (1) need to be submitted by the occupier if he submits a report under rule 10(1)

8. Updating of the site notification following changes in the threshold quantity.

Where an activity has been reported in accordance with rule 7(1) and the occupier makes a change in it (including an increase or decrease in the maximum threshold quantity of a hazardous chemical to which this rule applies which is or is liable to be at the site or in the pipeline or at the cessation of the activity, which affects the particulars specified in that report or any subsequent report made under this rule the occupier shall forthwith furnish a further report to the concerned authority.

9. Transitional provisions.

Where-

(a) at the date of coming into operation of these rules an occupier is in control of an existing industrial activity which is required to be reported under rule 7(1); or

(b) within 6 months after that date an occupier commence any such new industrial activity; it shall be a sufficient compliance with that rule if he reports to the concerned authority as per the particulars in Schedule 7 within 3 months after the date of coming into operation of these rules or within such longer time as the concerned authority may agree in writing.

10. Safety reports.

(1) Subjects to the following paragraphs of this rule, an occupier shall not undertake any industrial activity to which this rule applies, unless he has prepared a safety report on that industrial activity containing The information

specified in Schedule 8 and has sent a copy of that report to the concerned authority at least ninety days before commencing that activity.

(2) In the case of a new industrial activity which an occupier commences, or by virtue of sub-rule (2) (a) (ii) of rule 6 is deemed to commence, within 6 months after coming into operation of these rules, it shall be sufficient compliance with sub-rule (1) of this rule if the occupier sends to the concerned authority a copy of the report required in accordance with that sub-rule within ninety days after the date of coming into operation of these rules.

(3) In the case of an existing industrial activity, until five years from the date of coming into operation of these rules, it shall be sufficient compliance with sub-rule (1) of this rule if the occupier on or before ninety days from the date of the coming into operation of these rules sends to the concerned authority in information specified in Schedule 7 relating to that activity.

11. Updating of reports under rule 10.

(1) Where an occupier has made a safety report in accordance with sub-rule (1) of rule 10 he shall not make any modification to the industrial activity to which that safety report relates which could materially affect the particulars in that report, unless he has made a further report to take account of those modifications and has sent a copy of that report to the concerned authority at least 90 days before making those modifications.

(2) Where an occupier has made a report in accordance with rule 10 and sub-rule (1) of this rule and that industrial activity is continuing the occupier shall within three years of the date of the last such report, make a further report which shall have regard in particular to new technical knowledge which has affected the particulars in the previous report relating to safety and hazard assessment and shall within 30 days or in such longer time as the concerned authority may agree in writing, send a copy of the report to the concerned authority

12. Requirements for further information to be sent to the authority.

(1) Where, in accordance with rule 10, an occupier has sent a safety report relating to an industrial activity to the concerned authority, the concerned authority may, by a notice served on the occupier, require him to provide such additional information as is specified in the notice and the occupier shall send

that information to the concerned authority within such time as is specified in The notice or within such extended time as the authority may subsequently specify

13. Preparation of on-site emergency plan by the occupier.

(1) An occupier shall prepare and keep up-to-date an on-site emergency plan detailing how major accidents will be dealt with on the site on which the industrial activity is carried on and that plan shall include the name of The person who is responsible for safety on the site and the names of those who are authorised to take action in accordance with the plan in case of an emergency

(2) The occupier shall ensure that the emergency plan prepared in accordance with sub-rule (1) takes into account any modification made in the industrial activity and that every person on the site who is affected by the plan-is informed of its relevant provisions.

(3) The occupier shall prepare the emergency plan required under sub-rule

(a) in the case of a new industrial activity before that activity is commenced;

(b) in the case of an existing industrial activity within 90 days of coming into operation of these rules.

14. Preparation of off-site emergency plan by the authority.

(1) It shall be the duty of the concerned authority as identified in Column 2 of Schedule 5 to prepare and keep up-to-date an adequate off-site emergency plan detailing how emergencies relating to a possible major accident on that site will be dealt with and in preparing that plan the concerned authority shall consult the occupier, and such other persons as it may deem necessary.

(2) For the purpose of enabling The concerned authority to prepare the emergency plan required under sub-rule (1), the occupier shall provide the concerned authority with such information relating to the industrial activity under his control as the concerned authority may require, including the nature, extent

and likely effects off-site of possible major accidents and the authority shall provide the occupier with any information from the off-site emergency plan which relates to his duties under rule 13.

(3) The concerned authority shall prepare its emergency plan required under sub-rule (1),-

(a) in the case of a new industrial activity, before that activity is commenced;

(b) in the case of an existing industrial activity, within six months of coming into operation Of these rules.

15. Information to be given to persons liable to be affected by a major accident.

(1) The occupier shall take appropriate steps to inform persons outside the site either directly or through District Emergency Authority who are likely to be in an area which may be affected by a major accident about-

(a) the nature of the major accident hazard; and

(b) the safety measures and the "Do's' and 'Don'ts" which should be adopted in the event of a major accident

(2) The occupier shall take the steps required under sub-rule (1) to inform persons about an industrial activity, before that activity is commenced, except, in the case of an existing industrial activity in which case the occupier shall comply with the requirements of sub-rule (1) within 90 days of coming into operation of these rules.

16. Disclosures of information.

(1) Where for the purpose of evaluating information notified under rule 5 or 7 to 15, the concerned authority discloses that information to some other person that other person shall not use that information for any purpose except for the purpose of the concerned authority disclosing it, and before disclosing the information the concerned authority shall inform that other person of his obligations under this paragraph.

17. Collection, Development and Dissemination of Information.

(1) This rule shall apply to an industrial activity in which a hazardous chemical which satisfies any of the criteria laid down in part I of Schedule I and is listed in Column 2 of Part II of this Schedule is or may be involved.

(2) An occupier, who has control of an industrial activity in term of sub-rule 1 of this rule, shall arrange to obtain or develop information in the form of safety data sheet as specified in Schedule 9. The information shall be accessible upon request for reference.

(3) The occupier while obtaining or developing a safety data sheet as specified in Schedule 9 in respect of a hazardous chemical handled by him shall ensure that the information is recorded accurately and reflects the scientific evidence used in making the hazard determination. In case, any significant information regarding hazard Of a chemical is available, it shall be added to the material safety data shet as specified in Schedule 9 as soon as practicable.

(4) Every container of a hazardous chemical shall be clearly labelled or marked to identify,-

(a) the contents of the container,

(b) the name and address of manufacturer or importer Of the hazardous chemical;

(c) the physical, chemical and toxicological data as per the criteria given at Part I of Schedule 1.

(5) In terms of sub-rule 4 Of this rule where it is impracticable to label a chemical in view of the size of the container or the nature of the package, provision should be made for other effective means like tagging or accompanying documents.

18. Import of hazardous chemicals.

(1) This rule shall apply to a chemical which satisfies any of the criteria laid

down in Part I of Schedule I and is listed in Column 2 of Part II of this Schedule.

(2) Any person responsible for importing hazardous chemicals in India shall provide at the time of import or within thirty days from the date of import to the concerned authorities as identified in Column 2 of Schedule 5 the information pertaining to-

(i) the name and address of the person receiving the consignment in India;

(ii) the port of entry in India;

(iii) mode of transport from the exporting country to India

(iv) The quantity of chemical(s) being imported; and

(v) complete product safety information.

(3) If the concerned authority at the State is satisfied that the chemical being imported is likely to cause major accident, it may direct the importer to take such steps including stoppage of such imports as the concerned authority at the State may deem it appropriate.

(4) The concerned authority at the State shall simultaneously inform the concerned Port Authority to take appropriate steps regarding safe handling and storage of hazardous chemicals while off-loading the consignment with the port premises.

(5) Any person importing hazardous chemicals shall maintain the records of the hazardous chemicals imported as specified in Schedule 10 and the records so maintained shall be open for inspection by the concerned authority at the State or the Ministry of Environment and Forests or any officer appointed by them in this behalf.

(6) The importer of the hazardous chemical of a person working on his behalf shall ensure that transport of hazardous chemicals from port of entry to the ultimate destination is in accordance with the Central Motor Vehicles Rules, 1989 framed under the provisions of the Motor Vehicles Act, 1988.

19. Improvement notices.

(1) If the concerned authority is of the opinion that a person has contravened the provisions of these rules, the concerned authority shall serve on him a notice (in this para referred to as "an improvement notice") requiring that person to remedy the contravention or, as the case may be, the matters occasioning it within such period as may be specified in the notice.

(2) A notice served under sub-rule (1) shall clearly specify the measures to be taken by the occupier in remedying said contraventions.

20. Power of the Central Government to modify the Schedule.

The Central Government may, at any-time, by notification in the Official Gazette, make suitable changes in the Schedules.

[SCCHEDULE 1 : Indicative Criteria and List of Chemicals](#)

[SCCHEDULE 2 : Isolated storage at Installations other than those covered by Schedule 4](#)

[SCCHEDULE 3 : List of Hazardous Chemicals for Application of Rules 5 and 7 to 15](#)

[SCCHEDULE 4: Industrial Activity](#)

[SCCHEDULE 5: Competent Authority & their duties](#)

[SCCHEDULE 6 : Information to be Furnished Regarding Notification of a Major Accident](#)

[SCCHEDULE 7 : Information to be Furnished for the Notification of Sites](#)

[SCCHEDULE 8 : Information to be Furnished in a Safety Report](#)

[SCCHEDULE 9 : Safety Data Sheet](#)

[SCCHEDULE 10: Format for maintaining records of hazardous chemicals imported](#)

Ministry of Environment and Forests

New Delhi, the 19th January, 2000

NOTIFICATION

S.O.57(E) --Whereas certain draft rules further to amend the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 were published under the notification of the Government of India in the Ministry of Environment and Forests number S.O. 25(E) dated 21st January, 1999 inviting objections and suggestions from all persons likely to be affected thereby before the expiry of

the period of sixty days from the date on which the copies of the Gazette containing the said notification are made available to the public;

And whereas copies of the said Gazette were made available to the public on the 4th March, 1999;

And whereas objections and suggestions received from the public in respect of the said draft rules have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by sections 6,8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules further to amend the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989, namely: -

the Manufacture, Storage and Import of Hazardous Chemical (Amendment) Rules, 2000.

1. (1) These rules may be called the Manufacture, Storage and Import of Hazardous Chemical (Amendment) Rules, 2000.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. In the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 (hereinafter referred to as the said rules), in rule 2,-

i. in clause (e) for the words and figure "Schedule-1 and is" the words and figure "Schedule-1 or" shall be substituted;

ii. for clause (j), the following clauses shall be substituted, namely;-

'(j) "major accident" means - an incident involving loss of life inside or outside the installation, or ten or more injuries inside and/or one or more injuries outside or release of toxic chemicals or explosion or fire or spillage of hazardous chemicals resulting in on-site or off-site emergencies or damage to equipment leading to stoppage of process or adverse affects to the environment;

(ja) "major accident hazards (MAH) installations" means - isolated storage and industrial activity at a site handling (including transport through carrier or

pipeline) of hazardous chemicals equal to or , in excess of the threshold quantities specified in, column 3 of schedule 2 and 3 respectively;'

3. In rule 4 of the said rules in sub-rule (1), -

(i) in clause (a), for the words "and is listed", the words "or listed" shall be substituted;

(ii) for clause (b), the following clause shall be substituted, namely:-

"(b) isolated storage of a hazardous chemical listed in Schedule 2 in a quantity equal to or more than the threshold quantity specified in column 3, thereof."

4. In rule 6 of the said rules, in sub-rule (1), in clause (b) for the words and figure "Column 4", the words, figures and brackets "Columns 3 and 4 (rules 10-12 only for column 4)" shall be substituted. "

5. In rule 7 of the said rules, for the marginal heading "Notification of sites" the heading "Approval and Notification of sites" shall be substituted.

6. In rule 10 of the said rules, for the marginal heading "Safety Reports" the marginal heading "Safety reports and safety audit reports" shall be substituted.

7. In rule 17 of the said rules, in sub-rule (1) for the words "and is listed" the words "or listed " shall be substituted.

8. In rule 18 of the said rules, in sub-rule (1), for the words "and is listed" the words "or listed " shall be substituted.

9. In the said rules, for Schedule-1 and the entries relating thereto, the following Schedule and entries shall be substituted, namely :-

" SCHEDULE 1

[See rule 2e(i), 4(1)(a), 4(2), 17 and 18]

[Part - I]

(a) Toxic Chemicals: Chemicals having the following values of acute toxicity and

which owing to their physical and chemical properties, are capable of producing major accident hazards:

Sr. No	Toxicity	Oral toxicity LD50(mg/kg)	Dermal toxicity LD50(mg/kg)	Inhalation toxicity LC50(mg/l)
1.	Extremely toxic	> 5	<40	< 0.5
2.	Highly toxic	>5-50	>40-200	< 0.5 - 2.0
3.	Toxic	>50-200	> 200-1000	>2-10

(b) Flammable Chemicals:

i. flammable gases: Gases which at 20⁰C and at standard pressure of 101.3 KPa are:-

a. ignitable when in a mixture of 13 percent or less by volume with air, or

b. have a flammable range with air of at least 12 percentage points regardless of the lower flammable limits.

Note: - The flammability shall be determined by tests or by calculation in accordance with methods adopted by International Standards Organisation ISO Number 10156 of 1990 or by Bureau of Indian Standards ISI Number 1446 of 1985.

ii. extremely flammable liquids: chemicals which have flash point lower than or equal to 23⁰C and boiling point less than 35⁰C

(iii) very highly flammable liquids: chemicals which have a flash point lower than or equal to 23⁰C and initial boiling point higher than 35⁰C.

(iv) highly flammable liquids: chemicals which have a flash point lower than or equal to 60⁰C but higher than 23⁰C.

(v) flammable liquids: chemicals which have a flash point higher than 60⁰C but lower than 90⁰ C.

(c) Explosives: explosives means a solid or liquid or pyrotechnic substance (or a mixture of substances) or an article.

(a) which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings;

(b) which is designed to produce an effect by heat, light, sound, gas or smoke or a combination of these as the result of non-detonative self sustaining exothermic chemical reaction.

PART-II

LIST OF HAZARDOUS CHEMICALS

1. Acetaldehyde
2. Acetic acid
3. Acetic anhydride
4. Acetone
5. Acetone cyanohydrin
6. Acetone thiosemicarbazide
7. Acetonitrile
8. Acetylene
9. Acetylene tetra chloride
10. Acrolein
11. Acrylamide
12. Acrylonitrile
13. Adiponitrile
14. Aldicarb
15. Aldrin
16. Allyl alcohol
17. Allyl amine
18. Allyl chloride
19. Aluminium (powder)
20. Aluminium azide
21. Aluminium borohydride
22. Aluminium chloride
23. Aluminium fluoride
24. Aluminium phosphide
25. Amino diphenyl
26. Amino pyridine
27. Aminophenol-2

28. Aminopterin
29. Amiton
30. Amiton dialate
31. Ammonia
32. Ammonium chloro platinate
33. Ammonium nitrate
34. Ammonium nitrite
35. Ammonium picrate
36. Anabasine
37. Aniline
38. Aniline 2, 4, 6-Trimethyl
39. Anthraquinone
40. Antimonypentafluoride
41. Antimycin A
42. ANTU
43. Arsenic pentoxide
44. Arsenic trioxide
45. Arsenous trichloride
46. Arsine
47. Asphalt
48. Azinpho-ethyl
49. Azinphos methyl
50. Bacitracin
51. Barium azide
52. Barium nitrate
53. Barium nitride
54. Benzal chloride
55. Benzenamine 3-Trifluoromethyl
56. Benzene
57. Benzene sulfonyl chloride
58. Benzene 1-(chloromethyl)-4 Nitro
59. Benzene arsenic acid
60. Benzidine
61. Benzidine salts
62. Benzimidazole, 4, 5-Dichloro-2 (Trifluoromethyl)
63. Benzoquinone-P
64. Benzotrichloride
65. Benzoyl chloride
66. Benzoyl peroxide
67. Benzyl chloride
68. Beryllium (powder)
69. Bicyclo (2, 2, 1) Heptane-2 -carbon itri le

70. Biphenyl
71. Bis (2-chloroethyl) sulphide
72. Bis (Chloromethyl) Ketone
73. Bis (Tert-butyl peroxy) cyclohexane
74. Bis (Terbutylperoxy) butane
75. Bis (2,4,6-Trinitrophenylamine)
76. Bis (Chloromethyl) Ether
77. Bismuth and compounds
78. Bisphenol-A
79. Bitoscanate
80. Boron Powder
81. Boron trichloride
82. Boron trifluoride
83. Boron trifluoride comp. With methylether, 1: 1
84. Bromine
85. Bromine pentafluoride
86. Bromo chloro methane
87. Bromodialone
88. Butadiene
89. Butane
90. Butanone-2
91. Butyl amine tert
92. Butyl glycidal ether
93. Butyl isovalarate
94. Butyl peroxy malente tert
95. Butyl vinyl ether
96. Butyl-n-mercaptan
97. C. I. Basic green
98. Cadmium oxide
99. Cadmium stearate
100. Calcium arsenate
101. Calcium carbide
102. Calcium cyanide
103. Camphechlor Toxaphene)
104. Cantharidin
105. Captan
106. Carbachol chloride
107. Carbaryl
108. Carbofuran (Furadan)
109. Carbon tetrachloride
110. Carbon disulphide
111. Carbon monoxide

112. Carbophenothion
113. Carvone
114. Cellulose nitrate
115. Chloroicetic acid
116. Chlordane
117. Chlorofenvinphos
118. Chlorinated benzene
119. Chlorine
120. Chlorine oxide
121. Chlorine trifluoride
122. Chlormeplos
123. Chlormequat chloride
124. Chloroacetal chloride
125. Chloroacetaldehyde
126. Chloroaniline-2
127. Chloroaniline-4
128. Chlorobenzene
129. Chloroethyl chloroformate
130. Chloroform
131. Chloroformyl morpholine
132. Chloromethane
133. Chloromethyl methylether
134. Chloronitrobenzene
135. Chlorophacinone
136. Chlorosulphonic acid
137. Chlorothiophos
138. Chloroxuron
139. Chromic acid
140. Chromic chloride
141. Chromium powder
142. Cobalt carbonyl
143. Cobalt Nitrilmethylidyne compound
144. Cobalt (powder)
145. Colchicine
146. Copper and compounds
147. Copperoxydiloride
148. Counialuryl
149. Couniaphos
150. Couniatertralyl
151. Crimidine
152. Crotenaldehyde
153. Crotonaldehyde

154. Cumene
155. Cyano-en bromide
156. Cyano-en iodide
157. Cyariophos
158. Cyanothoate
159. Cyamiric fluoride
160. Cyclo hexylanline
161. Cyclohexane
162. Cyclobexatione
163. Cycloheximide
164. Cyclopentadiene
165. Cyclopentane
166. Cyclotetramethylenetetranitramine
167. Cyclotrimethylenetrinitramine
168. Cypermethrin
169. DDT
170. Decahorane (1:4)
171. Demeton
172. Demelon S-Methyl
173. Di-n-propyl peroxydicarbonate (Conc = 80%)
174. Dialifos
175. Diazodinitrophenol
176. Dibenzyl peroxydicarbonate (Conc > 90%)
177. Diborane
178. Dichloroacetylene
- 179, Dichlorobenzalkonium chloride
180. Dichloroethyl ether
181. Dichloromethyl phenylsilane
182. Dichlorophenol-2.6
183. Dichlorophenol-2.4
184. Dichlorophenoxy acetic acid
185. Dichloropropane-2,2
186. Dichlorosalicylic acid-3,5
187. Did-lo-rvos (DDVP)
188. Dicrotophos
189. Dieldrin
190. Diepoxy butane
191. Diethyl carbamazine citrate
192. Diethyl chlorophosphate
193. Diethyl ethanolamine
194. Diethyl peroxydicarbonate (Conc 330%)
195. Diethyl phenylene diamine

196. Diethylamine
197. Diethyleneglycol
198. Diethylene glycol dinitrate
199. Diethylene triamine
200. Diethleneglyrol butyl ether
201. Diglycidyl ether
202. Digitoxin
203. Dibydroperoxypropane (Conc- 30%)
204. Diisobutyl peroxide
205. Dinitox
206. Dimethoate
207. Dimethyl dichlorosilane
208. Dimethyl hydrazine
209. Dimethyl nitrosoamine
210. Dimethyl P phenylene diamine
211. Dimethyl phosphoramidic acid (TABUM)
212. Dimethyl phosphorochloridothioate
213. Dimethyl sulfolane (DMS)
214. Dimethyl sulphide
215. Dimethylamine
216. Dimethylaniline
217. Dimethylcarbonyl chloride
218. Dimetilan
219. Dinitro O-cresol
220. Dinitrophenol
221. Dinitrotoluene
222. Dinoseb
223. Dinoterb
224. Dioxane-p
225. Dioxathion
226. Dioxine N
227. Diphacinone
228. Diphosphoramide octagnethyl
229. Diphenyl methane di-isocyanate (MDI)
230. Dipropylene Glycol Butyl ether
231. Dipropylene glycolmethylether
232. Di-sec-butyl peroxydicarbonate (Conc > 80%)
233. Disulfoton
234. Dithiazamine iodide
235. Dithiobiurate
236. Endosulfan
237. Endothion

238. Endrin
239. Epichlorohydrine
240. LPN
- 241 Ergocalciferol
242. Ergotamine tartarate
243. Ethanesulfenyl chloride, 2 Oloro
244. Ethanol 1-2 dichloracolge
245. Ethion
246. Ethoprophos
247. Ethyl acetate
248. Ethyl alcohol
249. Ethyl benzene
250. Ethyl bis amine
251. Ethyl-bromide
252. Ethyl carbamate
253. Ethyl ether
254. Ethyl hexanol-2
255. Ethyl mercaptan
257. Ethyl methacrylate
258. Ethyl nitrate
259. Ethyl thiocyanate
260. Ethylamine
261. Ethylene
262. Ethylene chlorohydrine
263. Ethylene dibromide
264. Ethylene diamine
265. Ethylene diamine hydrochloride
266. Ethylene flourohydrine
267. Ethylene glycol
268. Ethylene glycol dinitrate
269. Ethylene oxide
270. Ethylenimine
271. Ethylene di chloride
272. Femamiphos
273. Fernitrothion
274. Fensulphothion
275. Pluemetil
276. Fluorine
277. Fluoro 2-hydroxy butyric acid amid salt ester
278. Fluoroacetamide
279. Fluoroacetic acid amide salts and esters
280. Fluoroacetylchloride

281 Fluorobutyric acid amide salt esters
292. Fluorocrotonic acid amides salts esters
293. Fluorouracil
294. Fonofos
295. Formaldehyde
286. Formetanate hydrochloride
287. Formic acid
289. Formoparanate
289. Formothion
290. Fosthlotan
291. Fuberidazole
292. Furan
293. GAlium Trichloride
294. Glyconitrile (Hydroxyacetonitrile)
295. Guanyt-4-nitrosaminoguynyl- 1-tetrazene
296. Heptachlor
298. Hexachlorobenzene
299. Hexachlorocyclohexan (Lindane)
300. Hexachlorocyclopentadiene
301. Hexachlorodibenzo-p-dioxin
302. Hexachloronapthalene
303. Hexafluoropropanone sesquihydrate
304. Hexamethyl phosphoroamide
305. Hexamethylene diamine N N dibutyl
306. Hexane
307. Hexanitrostilbene 2 2 4 4 6 6
308. Hexene
309. Hydrogen selenide
310. Hydrogen sulphide
311. Hydrazipe
312. Hydrazine nitrate
313. Hydrochloric acid (Gas)
314. Hydrogen
315. Hydrogen bromide
316. Hydrogen cyanide
317. Hydrogen fluoride
318. Hydrogen peroxide
319. Hydroquinone
320. Indene
321. Indium powder
322. Indomethacin
323. Iodine

324. Iridium tetrachloride
325. Ironpentacarbonyl
326. Iso benzan
327. Isoamyl alcohol
328. Isobutyl alcohol
329. Isobutyro nitrile
330. Isocyanic acid 3 4-dichlorophenyl ester
331. Isodrin
331. Isofluorophosphate
333. Isophorone diisocyanate
334. Isopropyl alcohol
335. Isopropyl chlorocarbonate
336. Isopropyl formate
337. Isopropyl methyl pyrazolyl dimethyl carbamate
338. Juglone (5-Hydroxy Napthalene- 1, 4 dione)
339. Ketene
340. Lactonitrile
341. Lead arsenite
342. Lead at high temp (molten)
343. Lead azide
344. Lead styphanat
e 345. Leptophos
346. Lenisite
347. Liquified petroleum gas
348. Lithium hydride
349. N-Dinitrobenzene
350. Magnesium powder or ribbon
351. Malathion
352, Maleic anhydride
353. Malononitrile
354. Manganese Tricarbonyl cyclopentadiene
355. Mechlor ethamine
356. Mephospholan
357. Mercuric chloride
358. Mercuric oxide
359. Mercury acetate
360. Mercury fulminate
361. Mercury methyl chloride
362. Mesitylene
363. Methacrolein diacetate
364. Methacrylic anhydride
365. Methacrylonitrile

366. Methacryloyl oxyethyl isocyanate
367. Methanidophos
368. Methane
369. Methanesulphonyl fluoride
370. Methidathion
371. Methiocarb
372. Methonyl
373. Methoxy ethanol (2-methyl cellosolve)
374. Methoxyethyl mercuric acetate
375. Methyacrylol chloride
376. Methyl 2-chloroacrylate
377. Methyl alcohol
378. Methyl amine
379. Methyl bromide (Bromomethane)
380. Methyl chloride
381. Methyl chloroform
382. Methyl chloroformate
383. Methyl cyclohexene
384. Methyl disulphide
385. Methyl ethyl ketone peroxide (Conc. 60%)
386. Methyl formate
387. Methyl hydrazine
388. Methyl isobutyl ketone
389. Methyl isocyanate
390. Methyl isothiocyanate
391. Methyl mercuric dicyanamide
392. Methyl Mercaptan
393. Methyl Methacrylate
394. Methyl phencapton
395. Methyl phosphonic dichloride
396. Methyl thiocyanate
397. Methyl trichlorosilane
398. Methyl vinyl ketone
399. Methylene bis (2-chloroaniline)
400. Methylene chloride
401. Methylenebis-4, 4(2-chloroaniline)
402. Metolcarb
403. Mevinphos
404. Mezacarbate
405. Mitomycin C
406. Molybdenum powder
407. Monocrotophos

408. Morpholine
409. Muscinol
410. Mustard gas
411. N-Butyl acetate
412. N-Butyl alcohol
413. N-Hexane
414. N-Methyl-N, 2, 4, 6-Tetranitroaniline
415. Naphtha
416. Naphtha solvent
417. Naphthalene
418. Naphthyl amine
419. Nickel carbonyl/nickel tetracarbonyl
420. Nickel powder
421. Nicotine
422. Nicotine sulphate
423. Nitric acid
424. Nitric oxide
425. Nitrobenzene
426. Nitrocellulose (dry)
427. Nitrochlorobenzene
428. Nitrocyclohexane
429. Nitrogen
430. Nitrogen dioxide
431. Nitrogen oxide
432. Nitrogen trifluoride
433. Nitroglycerine
434. Nitropropane-1
435. Nitropropane-2
436. Nitroso dimethyl amine
437. Nonane
438. Norbormide
439. O-Cresol
440. O-Nitro Toluene
441. O-Toluidine
442. O-Xylene
443. O/P Nitroaniline
444. Oleum
445. OO Diethyl sulph. methyl phosphorothioate
446. OO Diethyl propylthio methyl phosphorothioate
447. OO Diethyl thioethylsulphinylmethylphosphorothioate
448. OO Diethyl ethylsulphonvimethylphosphorothioate
449. OO Diethyl ethylthiomethylphosphorothioate

450. Organo rhodium complex
451. Orotic acid
452. Osmium tetroxide
453. Oxabain
454. Oxamyl
455. Oxetane, 3, 3,-bis(chloromethyl)
456. Oxidiphenoxarsine
457. Oxy disuffoton
458. Oxygen (liquid)
459. Oxygen difluoride
460. Ozone
461. P-nitrophenol
462. Paraffin
463. Paraoxon (Diethyl 4 Nitrophenyphosphate)
464. Paraquat
465. Paraquat methosulphate
466. Parathion
467. Parathion methyl
468. Paris green
469. Penta borane
470. Penta chloro ethane
471. Penta chlorophenol
472. Pentabromophenol
473. Pentachloro naphthalene
474. Pentadecyl-amine
475. Pentaerythritol tetranitrate
476. Pentane
477. Pentanone
478. Perchloric acid
479. Perchloroethylene
480. Peroxyacetic acid
481. Phenol
482. Phenol, 2, 2-thiobis (4, 6-Dichloro)
483. Phenol, 2, 2-thiobis (4 chloro 6 methyl phenol)
484. Phenol, 3-(1-methyl ethyl)-methylcarbamato
485. Phenyl hydrazine hydrochloride
486. Phenyl mercury acetate
487. Phenyl silatrane
488. Phenyl thiourea
489. Phenylene P-diamine
490. Phorate
491. Phosazetin

492. Phosfolan
493. Phosgene
494. Phosmet
495. Phosphamidon
496. Phosphine
497. Phosphoric acid
498. Phosphoric acid dimethyl (4-methyl thio) phenyl
499. Phosphorothioic acid dimethyl S(2-Bis) Ester
500. Phosphorothioic acid methyl (ester)
501. Phosphorothioic acid, 00 Dimethyl S-(2-methyl)
502. Phosphorothioic, methyl-ethyl ester
503. Phosphorous
504. Phosphorous oxychloride
505. Phosphorous pentaoxide
506. Phosphorous trichloride
507. Phosphorous penta chloride
508. Phthalic anhydride
509. Phylloquinone
510. Physostigmine
511. Physostigmine salicylate (1:1)
512. Picric acid (2,4,6-trinitrophenol)
513. Picrotoxin
514. Piperdine
515. Piprotal
516. Pirinifos-ethyl
517. Platinous chloride
518. Platitnim tetrachloride
519. Pottasium arserute
520. Potassium chlorate
521. Potassium cyanide
522. Potassium hydroxide
523. Potassium nitride
524. Potassium nitrite
525. Potassium peroxide
526. Potassium silver cyanide
527. Powdered metals and mixtures
528. Promecarb
529. Promurit
530. Propanesultone
531. Propargyl alcohol
532. Propargyl bromide
533. Propen-2-chloro-1,3-diou diacetate

534. Propiolactone
535. Propionitrile
536. Propionitrile, 3-chloro
537. Propiophenone, 4-amino
538. Propyl chloroformate
539. Propylene dichloride
540. Propylene glycol, allylether
541. Propylene imine
542. Propylene oxide
543. Prothoate
544. Pseudosumene
545. Pyrazoxon
546. Pyrene
547. Pyridine
548. Pyridine, 2-methyl-3 -vinyl
549. Pyridine, 4-nitro-1 -oxide
550. Pyridine, 4-nitro- 1 -oxide
551. Pyriminil
552. Quinalphos
553. Quinone
554. Rhodium trichloride
555. Salcomine
556. Sarin
557. Selenious acid
558. Selenium Hexafluoride
559. Selenium oxychloride
560. Semicarbazide hydrochloride
561. Silane (4-amino butyl) diethoxy-meth
562. Sodium
563. Sodium anthra-quinone-1-sulphonaie
564. Sodium arsenate
565. Sodium arsenite
566. Sodium azide
- 567, Sodium cacodylate
568. Sodium chlorate
569. Sodium cyanide
570. Sodium fluoro-acetate
571. Sodium hydroxide
572. Sodium pentachloro-phenate
573. Sodium picramate
574. Sodium selenate
575. Sodium selenite

576. Sodium sulphide
577. Sodium tellorite
578. Stannane acetoxy triphenyl
579. Stibine (Antimony hydride)
580. Strychnine
581. Strychnine sulphate
582. Styphnic acid (2,4,6-trinitroresorcinol)
583. Styrene
584. Sulphotec
585. Sulphoxide 3-chloropropyl octyl
586. Sulphur dichloride
587. Sulphur dioxide
588. Sulphur monochloride
589. Sulphur tetrafluoride
590. Sulphur trioxide
591. Sulphuric acid
592. Tellurium (Powder)
593. Tellurium hexafluoride
594. TEPP (Tetraethyl pyrophosphate)
595. Terbufos
596. Tert-Butyl alcohol
597. Tert-Butyl peroxy carbonate
598. Tert-Butyl peroxy isopropyl
599. Tert-Butyl peroxyacetate (Conc \geq 70%)
600. Tert-Butyl peroxyisovalate(Conc \geq 77%)
601. Tert-Butylperoxyiso-butyrate
602. Tetrahydrofuran
603. Tetra methyl lead
604. Tetra nitromethane
605. Tetra-chlorodibenzo-p-dioxin, 1,2,3,7,8,(TCDD)
606. Tetraethyl lead
607. Tetrafluoroethyne
608. Tetramethylene disulphotetramine
609. Thallous oxide
610. Thallium carbonate
611. Thallium sulphate
612. Thallous chloride
613. Thallous malonate
614. Thallous sulphate
615. Thiocarbamide
616. Thiocyanic acid, 2-(Benzothiazolyethio) methyl
617. Thiofamox

618. Thiometon.
619. Thionazin
620. Thionyl chloride
621. Thioplienol
622. Thiosenlicarbazide
623. Thiourea (2-chloro-phenyl)
624. Thiourea (2-methyl phenyl)
625. Tirpate (2.4-diinetlivi-1,3-di-thiolane)
626. Titanium powder
627. Titanium tetra-chloride
628. Toluene
629. Toluene 2.4-di isocyanate
630. Toluene 2,6-di isocyanate
631. Trans-1,4-di chloro-butene
632. Tri nitro anisole
633. Tri (Cyclohexyl) methylstannyl 1,2,4 triazole
634. Tri (Cyclohexyl) stannyl- I H- 1,2,3-triazole
635. Triaminotrinitrobenzene
636. Triamphos
637. Triazophos
638. Tribromophenol 2,4,6
639. Trichloro naphthalene
640. Trichloro chloromethyl silane
641. Trichloroacetyl chloride
642. Trichlorodichlorophenylsilane
643. Trichloroethyl silane
644. Tricbloroethylene
645. Trichloromethane sulphenyl chloride
646. Trichloronate
647. Trichlorophenol 2, 3, 6
648. Trichlorophenol 2, 4, 5
649. Trichlorophenyl silane
650. Trichlorophon
651. Triethoxy silane
652. Triethylamine
653. Triethylene melamine
654. Trimethyl chlorosilane
655. Trimethyl propane phosphite
656. Trimethyl tin chloride
657. Trinitro aniline
658. Trinitro benzene
659. Trinitro benzoic acid

- 660. Trinitro phenetole
- 661. Trinitro-m-cresol
- 662. Trinitrotoluene
- 663. Tri orthocresyl phosphate
- 664. Triphenyl tin chloride
- 665. Tris (2-chloroethyl) amine
- 666. Turpentine
- 667. Uranium and its compounds
- 668. Valinomycin
- 669. Vanadium pentaoxide
- 670. Vinyl acetate monomer
- 671. Vinyl bromide
- 672. Vinyl chloride
- 673. Vinyl cyclohexane dioxide
- 674. Vinyl fluoride
- 675. Vinyl norbornene
- 676. Vinyl toluene
- 677. Vinylidene chloride
- 678. Warfarin
- 679. Warfarin sodium
- 780. Xylene dichloride
- 681. Xylidine
- 682. Zinc dichloropentanitrile
- 683. Zinc phosphate
- 684. Zirconium & compounds

10. In Schedule 2 of the said rules,-

i. Under the sub-heading " Threshold quantities (tonnes)",-

a. for the existing entries, the following shall be substituted, namely:- " For application of rules 4,5,7 to 9 and 13 to 15";

b. for existing entries, the following shall be substituted, namely:- "For application of rules 10 to 12";

(ii). for serial number 7 and the entries relating thereto the following serial number and entries shall be substituted, namely:-

7	Extremely flammable liquids as defined in Schedule 1, paragraph (b) (ii)	5000	50,000"
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i. after serial number 27 and the entries relating

thereto, the following serial numbers and entries shall be inserted, namely:-

" 2 8	Very Highly flammable liquids as defined in Schedule 1, paragraph (b) (iii)	7,000	7,000
2 9	Highly Flammable liquids as defined in Schedule 1, paragraph (b)(iv)	10.000	10,000
3 0	Flammable liquids as defined in Schedule-1, paragraph(b)(v)"	15,000	1,00,000

10. In schedule 3 of the said rules,-

i. in PART-1, in Group-4 relating to Explosive substances against serial numbers 150,160, 163, 164, and 165, in column 3 , for the existing entries, the figures and letter "100 kg" shall respectively be substituted.

ii. for Part-II and the entries relating thereto the following shall be substituted, namely:-

" PART -II

Classes of substances as defined in PART-I, Schedule-1 and not specifically named in PART-I of this Schedule.

1	2	3	4
Group 5 - Flammable substances			
1.	Flammable Gases	15T	200T
2.	Extremely flammable liquids	1000T	5000T
3.	Very Highly flammable liquids	1500T	10000T
4.	Highly Flammable liquids which remains liquid under pressure	25T	200T
5.	Highly Flammable liquids	2500T	20000T

6.	Flammable liquids	5000T	50000T"
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10. In Schedule 4 of the said rules, in serial number 4 after the words "production, processing" the word "use" shall be inserted.

11. In Schedule 5 of the said rules, -

i. against serial number 3, in column 2, for the words "State Pollution Control Board" the words "State Pollution Control Board or Committee" shall be substituted;

ii. against serial number 5, in column 3, for the words "inside a port", the words "inside a port {covered under the Dock Workers (Safety, Health and Welfare) Act, 1986}" shall be substituted;

iii. against serial number 6, in column 3, the words "and pipelines including inter-state pipelines" shall be omitted.

iv. against serial number 7, in column 3, for the existing entries, the following entries shall be substituted, namely:-

"Enforcement of directions and procedures regarding: -

a. Notification of major accidents as per rule 5(1) and 5(2)

(b) Approval and Notification of Sites as per rule 7;

(c) Safety report and safety audit reports as per rule 10 to12;

a. acceptance of On-Site Emergency plans as per rule 13;

(e) assisting the District Collector in the preparation of Off-Site emergency plans as per serial number 9 of this Schedule;

i. against serial number 8, in column 3, after the brackets, letter and words, "(b) The Calcium Carbide Rules, 1987," the following shall be inserted, namely:-

"and in respect of Industrial installation and isolated storages dealing with hazardous chemicals and pipelines including inter-state pipelines regarding:-

a. Notification of major accidents as per rule 5;

b. Approval and notification of Sites as per rule 7;

c. Safety report and safety audit reports as per rules 10 to 12;

(d) acceptance of On-Site Emergency plans as per rule 13;

a. assisting the District Collector in the preparation of Off-Site

emergency plans as per serial number 9 of this Schedule."

(vi) against serial number 10 , in column 2, for the words brackets and letters "Directorate of Explosive Safety (DES)", the words, brackets and letters "Centre for Environment and Explosive Safety (CEES)" shall be substituted.

(Dr. V. Rajagopalan)
Jt. Secretary to the Govt. of India
{F. Number 17-4/90- HSMD}

Note:- The principal rules were published in the Gazette of India vide number S.O. 966(E), dated 27.11.89 and subsequently amended vide:-

- (i) GSR 584 dated 9.6.90 ,
- (ii) S.O. 115(E) dated 5.2.90 and
- (iii) S.O. 2882 dated 3.10.94.