

MANUFACTURE, STORAGE AND IMPORT OF HAZARDOUS CHEMICALS RULES 1989

787] No. 787) REGISTERED NO. D. (DON.) 127 Che Gazette of gjwdia EXTRAORDINARY EART 3.....-Sub-Setiæ (iD PUBLISHÜ) BY AUTHORITY 27, 6, NEW DELHI, MONDAY, NOVEMBER 27, 198)/AGRAHAYANA 6, 1911 Separate is iven to this Part in order thM K may be Ned as o separate co*adon (q) 1989 966(a) (t«qr) fnq, 1986 (19" 29) 6, 8 e, 5 Gr fnq t, frqq, (\$) (€x«q) *fhq, 1986 (i 986 341 GI/89 'fnft' f*qfa fafä (e) "qf«æqq (ii) (iii) 3 * (1) 'THE GAZETIE OF INDIA (i) 4 it ff<tz NfQT t; (li) (iii) : , qfräqe-qq fqfrnfrt , (i) 2 -fkfh«z (ii) a 2 Qtr ii (iii) 3 [PAR t' J, L.-SEG. 3 (il)l (w) (I) (q) (i) fhl qft frqsri Vt, (3) wrftr- 6 7 15 (1) 1 15 ffi, W') &fiTM 3 -vr 3 (ii)l 12 4 Xfift-e if fqfhfä-tz # I (i) tif (ii) 4fK t, it fnr frti(7 ii fifi-ur I \$,fuyzretr 10(1) f-«ri th (l) fxqy: (f 231* ql. t) ftfqfzq±f fm#i qfirgrår 3 7 fqfmftz-zii nrfrtr,OT Rftf 90 ftT G (z) (ii) qx frFl#f 91) -m ärtr (1) qfz 90 10 ß.qri; h, fRQ: RfR Ff 90 (L) 10 3iY_ frfQK 3 friti sqFT fit.fivT ii t, 30 . (l) qwt, 10 f+itrz t tt#r 13, Orr fkf 4 THE GAZETTE OF INDIA : EXTRAORDINARY [PART 3 (ii)l Hqqr qrqr fqq f*rq 11) qc trc qrtr t 90 14. fq ffi 10 t, 15. CJ RTftm-o•r qf&z Rift, r,Ql' R" finr I (2) fmü &fit«: 90 fq (1) 7 t 16 ufqf« it 17. (1) (I qr8fi. qiFzr qr Kit (Tf«fiRå t ufrq 9 Ritz I (5) f*qR wrtqr fiqr 18. q-tlTä:--O) (i) (ii) (iii) (iv) (v) dtr•, fäT t, qr fäg qiqor tff 10 fä•q 1988 Trg 1989 19. xrfüvvrr (fqj 7Nrf&fä t fGtrr qrqr gfær«r f*ig I 20. :— 17 i g ß) tlir(fhq t i (i) (ii) 5 20 23 ftqor 20 50 : qpi 50 EdT) 50 (Qwr fho qntrfQ6 1-50 1. 1- zoo 201- 2000 (iii) 65 t qtrrq Or) 2 l. 4. 5. 7. 8. 9. 10. 12. (qQ 13. 2 17, 19. 20. 21. g•trüfr 23. qtr*rRt 25. 27. (3) 28. 29. 30. 31. 32. 6 1 34. 36. 37. 38, 39, .11, 42. 47 _ 49. 50. 51. 52. 56. 57. 59. 65. 69. 72. 73. 74. 77, 79. 81. 8.3. 85. 2 THE GAZETTE OF INDIA : EXTRAORDINARY 2 90. 2 4 97. 98. [PART 11—SEC. 3 (ii)] (2 -Tftü«r«) fr.14 2 2 1-1 3 (31. sir Flitfæ, 88. 89. 91. 92. 93. 94. 95. 96. 100. 101, 1 02. 103. 104. 105. 107. 108. 109. 110. 111. 112. 113. 16. 117. 119. 120, 121. 123. 125. k 27. 1 29. 1 30. 135. 1 36. t 37. 1 39. 141. 142. 1 4.3. ö:rx 2 .17. 149, 1 50. 151. 152. 11--rrou a(ii)] 1-2 .3-5 4 (2 1 56. 157. 158, 159. 160. 16 t. 163. 164. 1 65. 167. 168. 170. 171, 1 72. 173. 1 74. 175. 1 76. 1 78. 181. 183. 184. 185. 186, 187. 18R. 199. 90. 191. 192. 193. 194, 195. 196. 1 97. 1 99 202. 203. 204. 205. 207. 208. 211. 213. 2, 3, 7, 8, 2 14. 2 15. 21 d. 3, 6, 6, 9, 2 17. 219. 220. 222. 225. 229. 230. 232- 233. 23 235 230. 237. 238- 239. 240. 241. 245. 246. 247. 250. 252. qi-TX) qmra :fik .) 8 1 253. 254 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 2 THE GAZETTE OF INDIA : EXTRAORDINARY 1 308. 309. 310. 311. 312* 313. 314. 31 5' 316. 317

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108-34-9 778+79-1 10102-18-8 7803-52-3 3689-24-5 1 0545-99-0 7783-80-4 107-49-43 80-1 2-6 297-97-2 3-8 107-0 2.8 107-18+6 7664-41•7 7664-41-7 7726-95-6 10 1-68-8 50-00-0 7647-01,0 14 1 114. 115. 116. 1 17. 116. 120, 121. 123. 124. 1 25. 126. 127. 128. 129. 1-30. 131: 1031-620 132. 133. 135. 136. \ 37. 1 38. 139. 1 40. | 43. 45. 147. 1 48

49. THE GAZETTE OF EXTRAORDINARY 2 1 19.FfT' (âitqN) — qqrq' (VI 10 2, (qir«r tPART 11— 3 5 20 50 50 5 5 6 5 50 zq 4 20 50 250 aq 2300 n SEC. 3(ii)] 7446-09-5 151. 153. 1,-1 (qtm 80 80) (?ffm (qfmr 77 (qtm 90 rfr) (qtm2 80 fi) (qtm2 so *fff) 2, 80 fi«) 50) fs-g+sftßq (qimr 80 Rfrr) 75 Rfüt8) (qtgetr 60 (qtmr 60 xft(fi) q<Tâ fâq (2, 4, qq) 12. 6 3006-868 2372-21 G 927-07 19910-65-7 14666-78 5 22397-33-7 7782-44-7 1 338-23-4 3720 6-2 0-5 7775-09•9 -18810-58-7 28260-81-9 9004-70-0 156 157. 158. 159. 1 60. 1 03. 164. 1 63. 167. 68. 1 69. 170. 171. 1 72. 173, 174. 175, 178. 177. 178. 79. 2 (2, 4, ftRr«) 21 20 I 55 Qffr 3 10 Z7 4 5000 15 6 7008-81-3 628-9 6-6 20920-45-5 628-86-4 831-52 7 606-35-9 35960-60•5 129-66-8 28905- (1) u'n: fi-,qr qp: 28 90 16 1 THE GAZETTE OF INDIA : EXTRAORDINARY 5 2 [PART 11 SEC. 3(ii)] (q) t) (K) (6) 6) i. (#40T) q•fhiT, 1986 2 (frfüDT) 947 (1) 2(r•) (ii) (iii) (iii) 10 12 (iv) 13 t 3(ii)] 0) 4. 1948 B. firm) 7. -1972 1983 fhF 50) fh•-ä 341101/89—3 17 (2) 7-9 I (3) 12 (4) 13 (3) 'fhqq 12 (4) 13 qfi (1) 5(1) 6(2) (3) 10 12 (4) fa•q 1 q I xrfüMQ q•rorfR6 Ff qfâfhqq, 1972 xr«ray q•fi.lfhtrq «hfrzør, 1983 14 i 18 THE GAZETTE OF INDIA :EXTRAORDINARY ffi ' (2) 1987 fh•g Q) qvt«or qfM [PART II—SEC. 3 (ii)] 3(ii)] fir : 19 (7) t-tg (T) 1 2. qa•r 3. 2, (ii) 5. crt, t, t I (ii) W) fir (firH O: OT) «q•rrui fWxrqrRT 1. ;trvr 2. qtr q-TT crä 4- G%Tt, 20 THE GAZETTE OF NDIA EXTRAORDINARY 3, Rf*qrqi (q) fÄ Rf%qt (s) (q•m, q«rå, qtm*, qta l) (q) qr«t (q) (U) 7. nfq.4--) q•ftü-z (q) (q) fÄg 11--SBC. 3(ii)] [m 11--<" 3(ii)] (q) 10. qx 21 (u) (v) (q) 1. 2 vrrq•r« t, trraiQf7 fffT xrfq«r,• 9 gqfæ 3 4 @360ü 22 THE GAZETrE OF INDIA : EXTRAORDINARY w 60 [PART 11—sEc. 30] 50 9. qtFi 3(ii)] urr, I fqfwsz 18(5) tfirq] 1. 23 3. 4. 5 (5) MINISTRY OF ENVIRONMENT AND FORESTS (Department of Environment, Forests and Wildlife) NOTIFICATION New Delhi, the 27th November, 1989 S.O. 966 exercise of the powers conferred by Sections 6, 8 and 25 of the Environment (Pro- tection) Act, 1986 (29 of 1986), the Central Govern- ment hereby makes the following rules, namely 1. Short title and commencement.— (1) These rules may be called the M.anufacture, Storage and Import of Hazardous Chemicals Rules, 1989. (2) They shall come into force on the date of thor 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 export9 hazardous cliemical ; (e) "hazardous chemical" means, (i) any chemical which satisfies any of the criteria laid down in Part I of Schedule (iii) (f) [17) (I and is listed in Column 2 of Part 11 of this Schedule ; any chemical listed in Column 2 01 Sche- dule 2; any chemical listed in Column l) of Schedule 3; 'import", with its grammatical variations and cognate expression, means bringing into India from a place outside India ; (g) "importer" means an occupier or any per- son who imports hazardous chemicals (h) "industrial activity" means, (i) an operation or procesg carried out in an industrial installation referred to in Schedule 4 involving or likely to involve one or more hazardous chemicals and includes on-site storage or on-site trans- port which is associated with that opera- tion or process, as the case may be : or isolated storage ; or (iii) pipeline ; "isolated storage" rneans storage of a hazar.. dous chemical, other than storage associat- ed with an installation on the same site specified in Schedule 4 where that storage *involves atleast the quantities of that chemi- cal set out in Schedule 2 'major accident" means Ian occurrence in- cluding any particular major emission, 24 THE GAZETTE OF INDIA : EXTRAORDINARY [PART II—SFC. 3(ii)] fire or explosion involving one or more Inzardous chemicals and resulting from uncontrolled developments in the course of an industrial activity or due to natural events leading to serius clTects both iln- mediate 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 v•.dth any apparatus and works associated there- with) or system of pipes (together with any apparatus and works associated there- with) for the convcyance of a hazardous chemical other than a flammable gas as set out in Column 2 of Part 11 of Sche- dule 3 at a pressure of less than 8 bars absolute ; the pipeline also includes inter- state pipelines ; 'Schedule" means Schedule appended to these rules ; 'site" means any location where hazardous chemicals are Inanufacturecl 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 hazardous chemical specified in Column 2 of Schedule 2, the quantity of that chemical specified in the corresponding entry in Columns 3 & 4 of that part ; (ii) in the case of a 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 II 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 1 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 in Column 3 thereof. (2) An occupier who has control of an industrial activity in terms 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 to 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 safety

5. Notification of major accident.—(1) Where a major accident occurs on a site, the occupier shall forthwith notify the concerned authority as identified in Schedule 5 of that accident, and furnish thereafter to the concerned authority a report relating to the accidents in instalments, if necessary, in Schedule 5. (2) The concerned authority shall on receipt of the report in accordance with sub-rule 1 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) Notwithstanding 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 1 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 a 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 isolated storage in which there is involved a quantity of a hazardous chemical listed in Column 2 of Schedule 2 which is equal to or more than the quantity specified in the entry for that chemical in Column 4. (2) For the purposes of rules 7 to 15,— (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 site.(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 not less than 3 months before commencing that activity or before such shorter time as the concerned authority may agree and for the purposes 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). B. Updating of the site notification following changes in the threshold quantity—Whenever 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 or is liable to be at the site or in places which 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 (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 commences 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) Subject 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 that 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 a 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, 3411 01/89—4 : marat 23 (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 a 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 the 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 safety report relating to which that 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 IA—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 responsible for safety on the site and the names of those who are authorised to take action 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 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 (a) in the case before that shall prepare the emergency plan required under sub-rule (1) of a new industrial activity, activity is 26 THE GAZETTE OF INDIA : EXTRAORDINARY [PART II-SEC. 3(ii)] (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 plans 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 concerned authority 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 11. (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 ; (b) the safety measures and the 'Dos' and 'Don'ts' which should be adopted in 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 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 terms of sub-rule 1 of this rule, shall attempt to obtain or develop information in the form of safety data sheet as specified in Schedule 9. The information shall be accessible upon request (or 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 sheet 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 the manufacturer or importer of the hazardous chemical ; (c) the physical, chemical and toxicological data as per the criteria given at Part I of Schedule I. (5) In terms of sub-rule 4 of this rule where it is impractical to label a chemical in view of the size of the container or the nature of the package, provision should be made for other effective means like tagging or accompanying documents

18. Import of hazardous chemicals, —(1) This rule shall apply to 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) (ii) (iii) (iv) (v) the name and address of the person receiving the consignment in India ; the port of entry in India ; mode of transport from the exporting country to India ; the quantity of chemical(s) being imported; and 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, 3(ii)] (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 within the port premises. (5) Any person importing hazardous chemicals shall maintain the records of the hazardous chemicals imported as specified in Schedule IO 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. "The importer of the hazardous chemical or 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

90. Power of the Central Government to modify the Schedules—The Central Government may, at any time, by notification in the Official Gazette, make such suitable changes in the Schedules. **SCHEDULE 1** [See rule 2(e)(i), 4(2)(i), Indicative Criteria and List of PART 1 (a) Toxic Chemicals : 17 and 18] Chemicals (b) Flammable chemicals : (R) flammable gases : chemicals which in the gaseous state at normal pressure and mixed with air become flammable and the boiling point of which at normal pressure is 20 °C or below ; (ii) highly flammable liquids : chemicals which have a flash point lower than 230 °C and the boiling point of which at normal pressure is above 20 °C (iii) flammable liquids : chemicals which have a flash point lower than 65 °C and which remain liquids under pressure, where particular processing conditions, such as high pressure and high temperature, may create major accident hazards. (c) Explosives : Chemicals which may explode under the ordinary name, heat or photo-chemical conditions or which are more sensitive to shocks or friction than dinitrobenzene

PART 11 LIST OF HAZARDOUS AND TOXIC CHEMICALS Name of the Chemical Sl. No 1 2 I. Acetone Acetone Cyanohydrin 2

3. Acetyl Chloride Acetylene (Ethyne) 4. Acrolein (2-Propenal) 5. Acrylonitrile 6

7. Aldicarb Aldrin 8. Alkyl Phthalate 9

10. Allyl Alcohol Allylamine 11. Alpha N-methyl Thiourea (Antu) 12. Aminodiphenyl-, 4 13. Aminophenol-2 14. Amiton 15. Ammonia Ammonium Nitrate Ammonium Nitrates in fertilizers Ammonium Sulfamate Chemicals having the following values of acute toxicity which, owing to their physical and chemical properties, capable of producing major accident hazards. and are Sl. of No. Toxicity 1. Extremely toxic 2. Highly toxic Medium to High Medium lethal Medium dose by the oral dose lethal by the dermal concentration route (dermal route (oral toxicity) LD50 (mg/kg body weight of test animals) toxicity) inhalation LD50 (mg/kg body weight of test animals) (four hours) body weight of LC50 (mg/l test animals) inhalation 1 50 201 in test animals) 1—200 2000 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33, 34

35. Anabasis Aniline Anisidine-p Antimony and Compounds Antimony Hydride (Stibine) Arsenic Hydride (Arsine) Arsenic Pentoxide, (Arsenic) (v) Acids and Salts Arsenic Trioxide, Arsenious (iii) Acids and Salts Asbestos Azinphos-Ethyl Azinphos-Methyl Barium Azide Benzene Benzidine Salts Benzoquinone [PART 11]—SLC. GAZETTE OF INDIA : EXTRAORDINARY 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 74. 75. 76. 77. 78, 79. Benzoyl Chloride Benzoyl Peroxide Benzyl Chloride Benzyl Cyanide Beryllium (Powders, Compounds) Biphenyl Bis (2-Chloromethyl) Ketone Bis (2, 4, 6-Trinitrophenyl) Amino Bis (2-Chloroethyl) Sulphide Bis (Chloromethyl) Ether Bis (tert-Butylperoxy) Butane, -2, 2 Bis (tert-Butylperoxy) Cyclohexane, 1, 4, 8. Bis-, 2 TRIBROMOPHENOXY-Ethane 89. 90. 91. 92. 93. 94. 95. 96. 97. 98

99. Chlormequat Chloride Chloroacetaldehyde Chloroacetaldehyde Chloroaniline, -4 Chlorobenzene Chlorodiphenyl Chloroepoxypropane Chloroethanol 1 Bisphenol Boron and Compounds Bromine Bromine Pentafluoride Bromoform Butadiene-1, 3 Butane Butanethiol Butanone-2 Butoxy Ethanol Butyl Glycidyl Ether Butyl Peroxyacetate, tert Butyl Peroxyisobutyrate, tert Butyl Peroxyisopropyl Carbonate, tert 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123

124. Chloroethyl Chloroformate Chlorofluorocarbons Chloroform Chloroformyl-, 4, Morpholine Chloromethane Chloromethyl Ether Chloromethyl Methyl Ether Chloronitrobenzene Chloroprene Chlorosulphonic Acid Chlorotrinitrobenzene Chloroxuron Chromium and Compounds Cobalt and Compounds Copper and Compounds Coumafuryl Coumaphog Coumatetralyl Cresols Crimidine Cumene Butyl Peroxymaleate, tert Butyl Peroxypivalate, -tert Butyl Vinyl Ether Butyl-n-Mercaptan Butylamine C 9-Aromatic Hydrocarbon Cadmium and Compound Cadmium Oxide (fume) Calcium Cyanide Captan 73. Captan Carbaryl (Sevin) Carbofuran Carbon Disulphide Carbon Monoxide Carbon Tetrachloride Carbofuran Carbophenothion Cellulose Nitrate Fraction 80- 81. 82. 83. 84, 85. 87

88. Chlorates (used in explosives) Chlordane Chlorfenvinphos C'lllorinated Benzenes Chlorino
86.Chlorine Di Oxide Chlorine Chlorine Oxide Trifluoride Cyanoph08 Cyanothoate Cyanuric Fluoride
 Cyclohexane Cyclohexanol Cyclohexanone 125. Cycloheximide 126. Cyclopentadiene 127. Cyclorntane
 128. Cyclotetramethylenctetranitramine 129. Cyclotrimethylene Trinitramine 130. DDT 131.
 Decabromodiphenyl Oxide 132. Demeton 133. Di-Igobutyl Peroxide 134. Din-Propyl Peroxydicarbonate
 135. Di-sec-Butyl Peroxydicarbonate 136. Dialif08 137. Diazodinitrophenol 138. Diazomethane 139.
 Dibenzyl Peroxydicarbonate Dichloroacetylene 140

141. Dichlorobenzene-o **142.**Dichlorobenzene-p 29 143. 144. 146. 147. 148. 149. 151. 152. 153. 154.
 155. 156. 157. 158. 159. 160, 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175.
 176. 177. 178. 179. 180. 182. 183

184. Dichloroethane Dichloroethyl Ether **145.**Dichlorophenol, -2, 4 Dichlorophenol, -2, 6
 Dichlorophenoxy Acetic Acid, Dichloropropane, -1, 2 Dichlorosalicylic Acid, -3, 5 150. Dichlorvos
 (DDVP) Dicrotophos Dieldrin Dicoxybutgne Diethyl Peroxydicarbonate Diethylene Glycol Dintrate
 Diethylene Triamine -2, 4 Diethyleneglycol Butyl Ether/ Diethyleneglycol Butyl 96. 97. 198. 199. 200.
 201. 03. -,04. VOS. 206. 207. ".08. 209. 211. 212. 213, 2.14. 215. 216. 217. 218. 219. 220. 221. 223. 224.
 225. 226. 228

229. Ethylene Glycol Dinitrate Ethylene Oxide Ethyleneimine Ethylihiocyanate Fensulphothion
Fluenetil Huoro, -4, -2-Hydroxybutyric Acid and Salts, Esters, Amides Fluoroacetic Acid and Salts,
Esters, Amidee Fluorobutyric Acid, -4, and Salts, Esters, Amides Fluorocrotonic Acid, -4, and Salts,
Esters, Amides Formaldehyde Glyconitrile (Hydroxyacetonitrile) Guany12 -1, -4-
Nitrosaminoguanyl-1-Tetrazene Heptachlor Haxachloro Cyclopentadieno Hexachlorocyclohexane
Hexachlorocy cloamethane Acetate Diethylenetriamine (DETA) Diglycldyl Ether
Dihydroperoxypropane, -2, 2 Diisobulyryl Peroxide Dimefox Dimethoate Dimethyl
Phosphoramidocyönidic Dimethyl Phthalate Dimethylcavbomyl Dimethylnitrosamine
Dinitrophenol, Salts Dinitrotoluene Dintro-o-Cresol Dioxane Dioxathion Dioxolane Diphacânone
Diphosphoramide Octamethyl Dipropylene Glycolmethylether Disulfoton Acid Hexafluoropropene
Hexametylphosphoramide Hexamethyl, cyclononane Hexamethylenediamine Hexane
Hexanitrostlbene, -2, 2, 4, 4, 6, 6 Hexavalent Chromium Hydrazino Hydrazine Nitrate Acid 2, 4, S-
Texbroxa- Hydrogen Hydrogen Hydrogen 227.Hydrogen Hydrogen Hydrogen 230. Hydrogen 231. -
 '33. 34. '35. 237. 138. 39. 140. '42. 043 744. 245. 246

247. Bromide (Hydrobromic Acid) Chloride (Liquified Gas) Cyanide Fluoride Selenide Sulphide
Endosulfan Endrin Epichlorohydrine 181.EPN Epoxypropane, 1, 2 Ethion Ethyl Carbamate 185. Ethyl
 Ether 186. Ethyl Hexanol, -2 Ethyl Mercaptan 187. 188. 189. 190. 191. 193. 194

195. Ethyl Methacrylate Ethyl Nitrate Ethylamine Ethylene 192.Ethylene Ethylene Ethylene Ethylene
 Chlorohydrine Diamine Dibromide Dichloride Hydroquinone Iodine Isobenzan Isodi'jn Isophorone
 Diisocyanato 236. Isopropyl Ether Juglone (5-Hydroxynaphthalene-1, 4-Dione) Lead (inorganic fumes &
 dusts) Lead 2, 4. 6-Trinitroresorcinoxido (Lead Styphnate) Lead Azide Leptophos Lindane Liquified
 Petroleum Gas (LPG) Maleic Anhydride Manganese & Compounds Mercapto Benzothiazole Mercury
 Alkyl 30 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 260. 262, 264. 265. 266. 268. 269. 270. 271.
 272. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285, 286. 287. 288. 289. 290. 291. 292. 293. 294.
 295. 296. 297. 298. 299. 300, 301. 302

303. THE GAZETTE OF [NDIA EXFRAORDINARY Mercury Fu!minat\$ Mercury Methyl
Methacrylic Anhydride Methacrylonitrile Methacryloyl Chloride Methomidophoe
Methanesuphonyl Fluoride Methanethiol Methoxy E,Lhan01 (2-Melhyl cellosolve)
Methoxyelhyllmercuric Acetate Acrylate Amylketone Bromide (Bromomethane) Chloride
Choloroform Cyciohexene Ethyl Ketone Peroxide Hyd razine Isobutyl Ketone Tsobutyl Ketone
Peroxide Isocyanate isothiocyante Mercaptun Methacrylate Parathion Phosphonic Dichloride
304.305. Oo-Diethyl 306. OO-Diethyl 307. OO-methyl 308. OO-Diethyl Oxyarnyl PART 3(ii S-
 Ethylsulphonylnethyl q S-Ethylsulphonylmethyl Phosphorothloale s-Ethylthiomethyl Phosphero!hioate
 S-Isopropyltniomethyl Phosphorodilnuate S-l'ropylthiomethyl Phophorodithioate 258. MethYl 259.
 Methyl Alcohol Methyl 261. Methyl Methyl 263. Methyl Methyl Methyl Methyl 267. Methyl Methyl
 Methyl Methyl Methyl Mclhyl 273. Methyl 274. Methyl 309. 310. 311. 312. 313. 314. 315. 316. 317, 316.

319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338 339. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355

356. Oxydisulfoton Oxygen (Liquid) Oxygen 1)7Tl fluoride Ozone Paroxon (Diethyl 4-Nitrophenyl Phosphate) IPlarquat Parathion Parathion Niethyl P,u-is green (Bis Aceto Hexametaarsenite Tetracopper) Methyl-N, 2, 4, 6-Tetranitroaniline Methylene Chloride Methylenebis,4, 4, (2-Chloroaniline) Methyltrichlorosilane Mevinphos Molybdenum & Compound N N-Methyl-N, 2, 4, 6-N-Tetranitroaniline Naphtha (.Coal Tar) Naphthylamine, 2 Nickel & Compounds Nickel Tetracarbonyl Nitroaniline-O Nitroaniline-P Nitrobenzene obcnzene-P N;trocyclohexane Nitroethane Nitrogen Dioxide Nitrogen Oxide Nitrogen Trifluoride Nitroglycerine N itrophenol-P Nitropropane-I Nitropropane-2 Nitrosodimethylamine Nitrotoluene Octabromophenyl Oxide Oleum Oleylamine Pentaborane Pentabromodiphenyl Oxide Pentabromophenol Pentachloro Naphthalene Pentachloroethane Pentachlorophenol Pentaerythritol Tetranitrate Pentane Peracetic Acid Perchloroethylene Perchloromethyl Mercaptan Petanone, 2. 4-Methyl Phenol Phenyl Glycidal Ether Phenylene p-Diamine Phenylmercury Acetate Phorate Phosacetim Phosalone Phosolan Phosgene (Carbonyl Chloride) Phosmet Phosphamidon Phosphine (Hydrogen Phosphide) Phosphoric Acid and Esters Phosphoric Acid, Bromoethyl Bromo (2, Isopropyl) Bromoethyl Ester Phosphoric Acid, Bromoethyl Bromo (2, Isopropyl) Chloroethyl Ester 2-Dimethyl- 2-Dimethyl- Bosphoric Acid. Chloroethyl Bromo (2, 2-Dimethoxypropyl) Chloroethylester Phosphorous & Compounds Phostalan Picric Acid (2, 4, 6-Trinitrophenol) Polybrominated Biphenyls Potassium Arsenite Potassium Chlorate Promurit (1-(3, 4-Dichlorophenyl) -3-Triazene-thiocarbonyl) Propanesultone-1, 3 P copen,- I ,-2-Chloro-1,3-Di-O-Diacetate Propylene Dichloride 357. 358. 359. 360 II- 3(ii)] Propylene Oxide Isopropyl Jencir,ne Pyrazoxon Selenium Hexafluoride Sernicarbaryl-I Hydrochloride 361. 362 363, 364. 365. 366. 367- 368. 369

370. Sodium Arsenite Sodium Azide Sodium Chloride Sodium Cyanide Sodium Picramate Sodium Selenite Styrene.1, Sulfate-p Sulphur Dichloride Sulphur Dioxide Sulphur Trioxide Sulphuric Acid 2-Tetrachloroethane 397. 398. 399. 400. 401. 402. 403. 404. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 31 Tri-, -1 (Cyclohexyl) Stannyl-I H-1, 2, -I-Trizole Trianilino, -I, 3, 5, 2, 4, 6-Trinitrobenzene Tribromophenol, 2, 4, 6 Trichloro Acetyl Chloride Trichloro Ethane Trichloro Naphthalene Trichloro (chloromethyl) Silane Trichlorodichlorophenylsilane Trichloroethane, 1, I, 1 Trichloroethyl Silane Trichloroethylene Trichloromethylnaphthyl Chloride Trichlorophenol, 2, 2, 6 -Trichlorophenol, 2, 4, S Triethylamine Triethylenemelamine Trimethyl Chlorosilane Trimethylolpropane Phosphite 371. 372. 373. 374. 375. 376 377. 378. 379. 381

382. Sulfoxide, 3-Chloropropyl Octyl Telluride Tellurium Hexafluoride Tepp Te rbufos Tetrabromobisphenol-A 380. Tetrachlorob 2, 2, 5, 6, 2, 2-Tetraethyl I-cad Tetrafluoroethane 5-Cyclohexadiene-1, 2, 3, 7, 8 (PCDD) 4- 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 431. 432. 433

434. Trinitroaniline Trinitroanisole, 2,24, 6 Trinitrobenzene Trinitrobenzoic Acid Trinitroresorcinol, 2, 4, 6 (Styphnic Acid) Trinitrotoluene Triorthoerythritol Phosphate Triphenyltin Chloride Turpentine Uranium & Compounds 383.384. 385. 386. 387. 388. 389. 390. 391. 392. 394

395. Tetramethylenedisulphotetramine Tetramethyl Lead Tetranitromethane Thallium & Compound Thionazin Thionyl Chloride Tirpate Toluene Toluene-24-Diisocyanate 393. Toluidine-O Toluene 2, 6-Diisocyanate Trans-I, 4-Chlorobutene Vanadium & Compounds Vinyl Chloride Vinyl Fluoride Vinyl Toluene 430. Warfarin Xylene Xylidine Zinc & Compounds Zirconium & Compounds SCHEDULE 2 [See rule 40 and Isolated Storage at Installations other than those covered by Schedule 4. (a) Threshold quantities set out below relate to each installation or group of installations belonging to the same occupier where the distance between installations is not sufficient to avoid, in foreseeable circumstances, any aggravation of major accident hazards. These threshold quantities apply in any case to each group of installations belonging to the same occupier where the distance between the installations is less than 500 metres. 32 THE GAZETTE OF INDIA : EXTRAORDINARY PART (b) For the purpose of determining the threshold quantity of a hazardous chemical at an isolated storage, account shall also be taken of any hazardous chemical which is : (i) in that part of any pipeline under the control of the occupier having control of the site, which is within 500 metres of that site and connected to it; (ii) at any other site

1. Chemical 2

57. THE GAZETTE OF INDIA : EXTRAORDINARY 2. Cycloheximide Demeton Dialifos 00-Diethyl S-ethylsulphinylmethyl pho s- phorothioate OO-Diethyl 1 S-ethylsulphonylmethyl 3. 100 kg 100 kg 100 kg 100 kg 100 kg 100 kg 1 kg I kg It 100 kg 100 kg 100 kg 100 kg I kg I kg I kg 1 kg I kg 1 kg 1 kg 1 kg 1 kg 1 kg 1 kg 100 kg 4. phosphorothioate OO-Diethyl 1 S -ethyl thiomethyl Phosphorothioate OODiethyl S-isopropylthiomethyl OO-Diethyl 1 S -propylthiomethyl phosphorodithioate Dimefox phosphorodithioate Dimethylcarbamoyl chloride Dimethylnitrosamine Dimethyl phosphoramidocyanidic acid D iphacinone Disulfoton 37. EPN Ethion Fensulfothion Fluenetil Fluoroacetic acid Fluoroacetic acid, salts Fluoroacetic acid, esters Fluoroacetic acid, amides 4-Fluorobutyric acid 4-Fluorobutyric acid, salts 4-Fluorobutyric acid, esters 4-Fluorobutyric acid, amides 4-Fluorocrotonic acid 4-Fluorocrotonic acid, salts 4-Fluorocrotonic acid, esters 4-Fluorocrotonic acid, amides 4-Fluoro-2-hydroxybutyric acid 4-Fluoro-2-hydroxybutyric acid, salts 4-Fluoro-2-hydroxybutyric acid, esters 4-Fluoro-2-hydroxybutyric acid, amides Glycolonitrile (Hydroxyacetonitrile) 11 SEC, 3(ii)] 66-81 8065-48-3

1031 1-84-9 2588-05-8 2588-06-9 2600-69-3 78-52-4 3309-68-0 79-44-7 62-75-9 639 7-41-9 298-04-4 2104-64.5 563-12-2 115-90-2 4301-50-2 144-49-0 462-23-7 37759-72-1 107-16-4 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 3 (ii)] 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin Hexamethylphosphoramide Hydrogen selenide Isobenzan Isodrin Juglone (5-Hydroxynaphthalene 1, 4-dione) 4,'-M ethylenebis (2-chloroaniline) Methyl isocyanate Mevinphos 2-Naphthylamine Nickel (metal, oxides, carbonates, sulphide, as powders) Nickel tetracarbonyl Oxydisulfoton Oxygen difluoride Paraoxon (Diethyl 4-nitrophenyl phos- phate) Parathion Parathion-methyl Pentaborane Phorate Phosacetim Phosgene (carbonyl chloride) Phosphamidon Phosphine (Hydrogen phosphide) Promurit (1-(3, 4-Dichlorophenyl)-3-trinazenethiocarboxamide) 1, 3-Propanesultone 1-Propen-2-chloro-1, 3-diol diacetate Pyrazoxon Selenium hexafluoride Sodium selenite Stibine (Antimony hydride) Sulfotep Sulphr dichloride Tellurium hexafluoride TEPP 2, 3, 7, 8-Tetrachlorodibenzo-p•dioxin (TCDD) Tetramethylenedisulphotetramine Thionazin Tirpate (2, 4-Dimethyl-1, 3-dithiolane-2-carboxaldehyde O-methylcarbamoyloxime)) Trichloromethanesulphenyl chloride I-Tri I 2, 4- triazole 3. 100 kg I kg 100 kg IOO kg 100 kg 100 kg It 100 kg 100 kg 100 kg 100 kg 100 kg 100 kg 100 kg 100 kg 750 kg 100 kg 100 kg 100 kg I kg 100 kg 100 kg 100 kg 100 kg 100 kg It 100 kg 100 kg 1 kg I kg 100 kg 100 kg 100 kg IOO kg 4. 750 kg 35 5. 19408-74-3 680-31-9 7783-07-5 297-78-9 465-73-6 481-39-0 624-83-9 7786-34-7 13463-9-3 2497-07-6 7783-41-7 311-45-5 298-00-0 19624-22-7 298-02-2 4104-14-7 75-44-5 13171-21-6 7803-51-2 5836-73-7 1120-71-4 10118-72-6 108-34-9 7783-79-1 10102-18-8 78 03-52-3 3689-24-5 10545-99-0 7783-80-4 107-49-3 1746-01-6 297-97-2 26419-73-8 594-42-3 41083-11-8 36 1. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111.112. 113. 114. 116. 117. 118, 119. 120. 121. 122. 123. 124. 125. 126. 127. 128, 129. THE GAZETTE OF INDIA : EXTRAORDINARY 2. Triethylenemelamine Warfarin GROUP 2-TOXIC SUBSTANCES Acetone cyanohydrin (2-Cyanopropan-2-O l) Acrolein (2-Propenal) Acrylonitrile Allyl alcohol (Propen•l-ol) Allylamine Ammonia Bromine Carbon disulphide Chlorine Diphenyl methane di-socyanate (MDI) Ethylene dibromide (l, 2-Dibromoethane) Ethyleneimine Formaldehyde (concentration \$ 900/0) Hydrogen chloride (liquified gas) Hydrogen cyanide Hydrogen fluoride Hydrogen sulphide Methyl bromide (Bromomethane) Nitrogen oxides Propyleneimine Sulphur dioxide Sulphur trioxide Tetraethyl lead Tetramethyl lead Toluene di-isocyanate (TDI) GROUP 3—HIGHLY REACTIVE SUB STANCES Acetylene (ethyne) a. Ammonium nitrate (l) b. Ammonium nitrate in form of ferti- liser (2) 2, 2-Bis (tert-butylperoxy) butane (cocentration 70%) 1, I-Bic (tert-butylperoxy) cyclohexane (concentration— 8 tert-Butyl peroxyacetate (concentration S 3. 200 t 20 t 20 t 200 t 200 t 50 t 40 t 20 t 20 t 5t 50 t 5t 25 t 20 t 50 t 50 t 20 t 15 t 5t 350 t 1 250 t 5t 5t 4. 200 t 500 t 200 t 25 t 250 t 20 t 50 t 50 t 250 t 75 t 2 500 t PART 11— SEC. 3(Ii)] 5. 75-86-5 107-02-8 107-13-1 107-18-6 7664-41-7 7726-95-6 7782-50-5 101-68-8 106-93-4 151-56-4 50-00-0 7647-01-0 74-908 7664-39-3 7783-06-4 74-83-9 11104-93-1 75-55-8 7446-09-5 7446-11-9 78-00-2 75-74-1 584-84-9 75-01-4 74-86-2 6484-52-2 2167-23-9 3006-86-8 3006-86- 8 1. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 3(ii)] 5t 37 2. tert-Butyl peroxyisobutyrate (concentra- tionA8 tert-Butyl peroxy isopropyl carbonate (concentration— 8 tert-Butyl peroxy maleate (concentration tert-Butyl peroxy pivalate (concentration 77%) Dibenzyl peroxydicarbonate (concentra- tion— 900/0 Di-sec-butyl peroxydicarbonate concentra- 80 Diethyl peroxydicarbonate (collcentration 2, 2-Dihydroperoxypropane (concentra- tion—æ300/0) Di-isobutyl peroxide (Concentration Di-n-propyl peroxydicarbonate (conccn- tration—80 0 0) Ethylene oxide Ethyl nitrate oxacyclononane (concentration—75 0/) Hydrogen Liquid oxygen Methyl ethyl ketone peroxide (concentra- tion—60 0/0) Methyl isobutyl ketone peroxide (concentration 60%) Peracetic acid (concenLration 6000) Propylene oxide Sodium chlorate GROUP 4— EXPLOSIVE SUBSTANCES Barium azide Bis (2, 4, 6,trinitrophenyl) amine Chlorotrinitrobenzene Cellulose nitrate (containing 12.6% Nitro- gen) Cyclotetramethylenetetranitramine Cyclotrimethylenetrinitramine Diazodinitrophenol Diethylene glycol dinitrate Dinitrophenol,salts Ethylene glycol dinitrate 3. 50 t 50 t 50 t 5t 50 t 50 t 200 t 50 t 50 t 25 t 50 t 50 t 50 t 50 t 50 t 50 t 50 t 4. 50 t 50 t 5. 109-13-7 2372-21-6 1931-2-0 927-07-1 2144-45-8 19910-5-0 14666-78-5 2614-76-8 3437-84-1 16066-38-9 75-21-8 625-58-1 22397-33-7 1333-74-0 7782-44-7 1338-23-4 37206.20-5 79-21-0 75-56-9 7775-09-9 18810-58-7 131-73-7 28260-61-9 9004-70-0 2691-41-0 121-82-4 7008-81-3 693-21-0 628-96-6 38 1. 160. 161. 162 163. 164. 165. 166. 167. 168. 169. 170. 171.172. 173. 174. 175. 176. 177. 178. 79

1. THE GAZETTE OF INDIA : EXTRAORDINARY 2.3. I -Guanyl-4-nitrosamine, I -tetrazene 2, 2', 4, 4' 6, 6'-Hexanitrostilbene 50 t Hydrazine nitrate 50 t Lead azide 50 t Lead styphnate (Lead 2, 4, 6-trinitroresorcinol) 50 t Mercury fulminate (N-Methyl-N, 2, 4, 6-tetranitroaniline 50 t Nitroglycerine Pentaerythritol tetranitrate 50 t Picric acid (2,4, 6-Trinitrophenol) 50 t Sodium picramate 50 t Styphnic acid 50 t (2, 4, 6-Trinitroresorcinol) 1, 3, 5-Triamino-2, 4, 6-trinitrobenzene 50 t 50 t 2, 4, 6-Trinitroanisole 50 t Trinitrobenzene 50 t Trinitrobenzoic acid 50 t Trinitroresorcinol 50 t 2, 4, 6-Trinitrophenol 50 t 2, 4, 6-Trinitrotoluene 50 t PART-11 [PART 11 5. 109-27-3 20062-22-0 13464-97-6 13424-46-9 15245-44-0 20820-45-5 628-86-4 479-45-8 55-63-0 831-52-7 3058-38-6 2695242-1 606-35-9 25377-32-6 35860-50-5 129-66-8 28905-71-7 4732-14-3 1 18-96-7 5. SEC. 3(ii)] 4. 50 t Classes of Substances not specifically named in Part-I 2. GROUP 5-FLAMMABLE SUBSTANCES 1. 2. 3. Flammable gases : Substances which in the gaseous state at normal pressure and mixed with air become flammable and the boiling point of which at normal pressure is 200C or below; Highly flammable liquids : Substances which have a flash point lower than 210 C and the boiling point of which at normal pressure is above 200C; Flammable liquids : Substances which have a flash point lower than 550C and which remain liquid under pressure, where particular processing conditions, such as high pressure and, high temperature, may create major accident hazards. 3. 15 t 1000 t 4. 200 t 50 t 39 (I) This applies to ammonium nitrate and mixtures of ammonium nitrate where the nitrogen content derived from the ammonium nitrate is greater than 28 % by weight and aqueous solutions of ammonium nitrate where the concentration of ammonium nitrate is greater than 90 by weight. (2) This applies to straight ammonium nitrate fertilizers and to compound fertilizers where the nitrogen content derived from the ammonium nitrate is greater than 28% by weight (a compound fertilizer contains ammonium nitrate together with phosphate and/or potash). [Installations for the production, using for this purpose, among others : SCHEDULE 4 [See rule 2 (h) processing or treatment of organic or inorganic chemicals (c) (d) (e) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r) (s) (t) 3. 4. 5. 6. alkylation Amination by ammonolysis carbonylation condensation dehydrogenation esterification halogenation and manufacture of halogens hydrogenation hydrolysis oxidation polymerization sulphonation desulphurization, manufacture and transformation of sulphur-containing compounds nitration and manufacture of nitrogen-containing compounds manufacture of phosphorous-containing compounds formulation of pesticides and or pharmaceutical products distillation extraction solvation mixing Installations for distillation, refining or other processing of petroleum or petroleum products. Installations for the total or partial disposal of solid or liquid substances by incineration or chemical decomposition. Installations for production, processing or treatment of energy gases, for example, LPG, LNG, SNG. Installations for the dry distillation of coal or lignite. Installations for the production of metals or non-metals by a wet process or by means of electrical energy. 40 S. No. 1 THE GAZETTE OF INDIA : EXTRAORDINARY SCHEDULE - 5 (see Rules 2(b) and 3)] [PART 11-SEC. 3 (ii)] Authority(ies) with legal backing 2 1. Ministry of Environment and Forests under Environment (Protection) Act, 1986

2. Chief Controller Imports & Exports under Import & Export (Control) Act, 1947

3. Central Pollution Control Board or State Pollution Control Board under Environment (Protection) Act, 1986 as the case may be.Duties and corresponding Rule 3 (i) Notification of hazardous chemicals as per Rules 2(e) (i) 2(e) (ii) & 2(e) (iii) Import of hazardous chemicals as per Rule 17. (1) Enforcement of directions and procedures in respect of isolated storage of hazardous chemicals, regarding. (i) Notification of major accidents as per Rules 5(1) and 5(2) (ii) Notification of sites as per Rules 7 to 9. (iii) Safety reports in respect of isolated storages as per Rule 10 to 12. (iv) Preparation of on-site emergency plans as per Rule 13. (2) Import of hazardous Chemicals and enforcement of directions and procedures on import of hazardous chemicals as per Rule 17

4. Chief Inspector of Factories appointed under Enforcement of directions and procedures in respect of Factories Act, 1948

5. Chief Inspector of Dock Safety appointed under the Dock Workers (Safety, Health and Welfare) Act, 1986.of industrial installations and isolated storages dealing with hazardous chemicals and pipelines including inter-state pipelines regarding,— (i) Notification of major accidents as per Rule 5(1) and 5(2). (ii) Notification of sites as per Rules 7-9. (iii) Safety reports as per Rules 10 to 12. (iv) Preparation of on-site emergency plans as per Rule 13. (v) Preparation of off-site emergency plans in consultation with

District Collector or District Emergency Authority as per Sr. No. 9 of this schedule. Enforcement of directions and procedures in respect of industrial installations and isolated storages dealing with hazardous chemicals and pipelines inside a port regarding.— (i) Notification of major accidents as per Rules 5(1) and 5(2). (ii) Notification of sites as per Rules 7 to 9. (iii) Safety reports as per Rules 10 to 12. 1 6. 7. 8. 9. 3(ii)] 2 Chief Inspector of Mines appointed under the Mines Act, 1952. Atomic Energy Regulatory Board appointed under the Atomic Energy Act, 1972- Chief Controller of Explosives appointed under the Indian Explosives Act and Rules, 1983. District Collector or District Emergency Authority as per S. No. 9 of this Schedule. Enforcement of directions and procedures in respect of industrial installations and isolated storages dealing with the hazardous chemicals and pipelines including inter-state pipelines regarding. (i) Notification of major accidents Rule 5(1) and 5(2). (ii) Notification of sites as per Rules 7 to 9. (iii) Safety reports as per Rules 10 to 12. (iv) Preparation of on-site emergency plans as per Rule 13. (v) Preparation of off-site emergency plans in consultation with District Collector or District Emergency Authority as per S. No. 9 of this Schedule. Enforcement of directions and procedures as per the provisions of the Atomic Energy Act, 1972. Enforcement of directions and procedures as per the provisions of the Indian explosives Act and Rules, 1983. Preparation of off-site emergency plans as per Rule 14. Authority designated by the State Government. SCHEDULE 6 [See rule 5(1)] INFORMATION TO BE FURNISHED REGARDING NOTIFICATION OF A MAJOR ACCIDENT Report number.... of the particular accident. General data (a) Name of the site (b) Name and address of the manufacturer (Also state telephone/telex number) (i) Registration number (c) (ii) Licence number (As may have been allotted under any statute applicable to the site, e.g. the Factories Act) 341 1 .42 3. 4. 5. 6. (d) THE GAZETTE OF INDIA : EXTRAORDINARY (i) Nature of industrial activity (Mention what is actually manufactured, stored etc.) (ii) National Industrial Classification, 1987 at the four digit level. . —SEC

PART 11 3(ii) Type of major accident Explosion Substance(s) Emitted Description of the major accident (a) Date, shift and hour of the accident (b) Department/Section and exact place where the accident took place (c) The process/operation undertaken in the Department/Section where the accident took place. (Attached a flow chart, if necessary) (d) The circumstances of the accident and the dangerous substance involved. Emergency measures taken and measures envisaged to be taken to alleviate short term effects of the accident. Causes of the major accident. Known (to be specified) Not known Information will be supplied as soon as possible. Nature and extent of damage (a) Within the establishment—casualties persons exposed to the major accident— material damage danger is still present danger no longer exists Emission of dangerous substance Killed Injured Poisoned .3 (ii) I (b) Outside the establishment persons exposed to the major accident nna rial do to en vironment lthe danger is still present the danger no longer exists Data available for assessing the effects of the accident Oil persons and environment. Steps already taken or envisaged (a) to alleviate medium or long term effects of the accident. (b) to prevent recurrence of similar major accidents (c) Any other relevant information. 7. 8. 3. 4". 5

6. INFORMATION TO BE FURNISHED FOR THE OF PART SITES Particulars to be included in a notification of a site. The employer making the notification. The name and address of the full postal address of the site where the notifiable industrial activity will be carried on. The area of the site covered by the notification and of any adjacent site which is required to be taken into account by virtue of b(ii) of Schedules 2 and 3. The date on which it is anticipated that the notifiable industrial activity will commence, or if it has already commenced a statement to that effect. The name and maximum quantity liable to be on the site of each dangerous substance for which notification is being made. Organisation structure, namely organisation diagram for the proposed industrial activity and set up for ensuring safety and health. 44 THE GAZETTE. or : EXTRAORDINARY [PART 11--SEC

7. Information relating to the potential for major accidents, namely— (a) identification of major accident hazards; (b) the conditions or events which could be significant in bringing one about; (c) a brief description of the measures taken 8. Information relating to the site namely (a) a map of the site and its surrounding area to a scale large enough to show any features that may be significant in the assessment of the hazard or risk associated with the site. (i) area likely to be affected by the major accident, (ii) population distribution in the vicinity. (b) a scale plan of the site showing the location and quantities of all significant inventories of the hazardous chemicals; (c) a description of the process or

storage involving the hazardous chemicals and an indication of the conditions under which it is normally held ; (d) the maximum number of persons likely to be present on site

9. The arrangement for training of workers and equipment necessary to ensure safety of such work. PART Particulars to be included regarding pipeline— 1. The names and the address of the person making the notification. 2, The full postal address of the place from which the pipeline activity is controlled, addresses of the places where the pipeline starts and finishes and a map showing the pipeline route drawn to a scale of not less than 1 : 400000 3. The date on which it is anticipated that the notifiable activity will commence, or commenced a statement to that effect. 4. The total length of the pipeline, its diameter and normal operating pressure and the name and maximum quantity liable to be in the pipeline of each hazardous chemical for which notification is being made. SCHEDULE 8 [See rule INFORMATION TO BE FURNISHED IN A SAFETY REPORT 1. The name and address of the person furnishing the information

2. Description of the industrial activity, namely—(a) site, (b) construction design, (c) protection zones explosion protection, separation distances, (d) accessibility of plant, (e) maximum number of persons working on the site and particularly of those persons exposed to the hazard



3. Description of the processes, namely—(a) (b) (c) (d) (e) technical purpose of the industrial activity, basic principles of the technological process, process and safety-related data for the individual process stages, process descriptionj safety-related types of utilities. 11--<og 3(ii 45 4. 5. 6. 8. 9. IO. Description of the hazardous cheniicals, namely (a) chemicals (quantities, substance data, safety-related data, toxicological data and threshold values), (b) the



form in which the chemical may occur on or into which they may be transformed in the event of abnormal conditions, (c) the degree of purity the hazardous chemical Information on the preliminary hazard analysis, namely— (a) types of accident, (b) system elements or events that can lead to a major accident, (c) hazards, (d) safety—relevant components. Description of safety—relevant units, among others; (a) Special design criteria, (b) controls and alarms, (c) special relief systems, (d) quick-acting valves, (e) collecting tanks/dump tank, (f) sprinkler system, (g) fire, fighting etc. Information on the hazard assessment, namely— (a) identification of hazards, (b) the causes of major accidents, (c) assessment of hazards according to their occurrence frequency, (d) assessment of accident consequences, (e) safety systems, (f) known accident history. Description of information on organisational systems used to carry on the industrial activity safety, namely (a) maintenance and inspection schedules, (b) guidelines for the training of personnel, (c) allocation and delegation of responsibility for plant safety, (d) implementation of safety procedures. Information on assessment of the consequences of major accidents, namely— (a) assessment of the possible release of hazardous chemicals or of energy (b) possible dispersion of released chemical (c) assessment of the effects of the releases (size of the affected area, health effects, property damage). Information on the mitigation of major accidents, namely (a) fire brigade (b) alarm systems, (c) emergency plan containing system of organisation used to fight the emergency, the alarm and the communication routes, guidelines for fighting the emergency, information about hazardous possible incident sequence, chemicals, examples 01' THE GAZETTE OF INDIA : EXTRAORDINARY I-PART II—SEC (d) coordination with the District Emergency authority and its off-site emergency plan, (e) notification of the nature and scope of the hazard in the event of an accident, (f) antidotes in the event of a release of a hazardous chemical. SCHEDULE 9 (See Rule 17) SAFETY DATA SHEET 1. CHEMICAL IDENTITY Chemical Name Synonyms Formula Regulated Identification Shipping Name Codes/Label Hazardous Waste I.D. No. : C.A.S. No. Chemical Classification Trade Name C.A.S. No. Hazardous Ingredients 3.

Hazardous Ingredients 1

2. PHYSICAL AND CHEMICAL DATA Boiling Range/ Point Melting/Freezing Point Vapour Pressure mm Hg Solubility in water @ 30 °C FIRE AND EXPLOSION HAZARD DATA Flammability Yes/No T₅₀ Flash Point °C Flash Point Explosion Sensitivity to Impact Hazardous Polymerisation Hazchem No.. C.A.S. No. . Appearance Odour Other's 1 -e. lltlon Ten-perature Hazardous Combustion Products Combustible Liquid Explosive Explosion Sensitivity to Static Electricity Corrosive Material 47 Flammable Material Pyrophoric Material (oxidiser Organic Peroxide 4. REACTIVITY DATA Chemical Stability Incompatibility with other Material Reactivity Hazardous Reaction Products 5. HEALTH HAZARD DATA Routes of Entry Effects of Exposure/Symptoms Emergency Treatment TLV (ACGIH) Permissible Exposure Limit LD50 Health NFPA Hazard Signals 6. PREVENTIVE MEASURES Personnel Protective Equipment Handling and Storage Precautions In g/ m³ Others STEL Odour Threshold ppm Flammability Stability mg/m³ mg/m³* Spectral 7. EMERGENCY AND FIRST AID MEASURE FIRE FIRST AID. EXTINGUISHING

8. ADDITIONAL INFORMATION/REFERENCES 9. MANUFACTURER/SUPPLIERS DATA 48 FIRE EXPOSURE SPILLS 1. THE GAZETTE OF INDIA : EXTRAORDINARY Special Procedures Unusual Hazards First Aid Measures Antidotes/Dosages Steps to be taken Waste Disposal Method [PART 11—SEC. 3 (ii)] Name of Firm Mailing Address Telephone/Telex Nos. Telegraphic Address 10. DISCLAIMER Contact Person in Emergency Local Bodies involved Standard Packing Transport Details/Ref Other Information contained in this Material data sheet is believed to be reliable but no representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. It is upto the manufacturer/seller to ensure that the information contained in the material safety data sheet is relevant to the product manufactured/handled or sold by him as the case may be. The Government makes no warranties expressed or implied in respect of the adequacy of this document for any particular purpose. SCHEDULE 10 [See Rule 18(5)] (Format for maintaining records of hazardous chemicals imported) Name and address of the Importer : and Reference number 01 issuance of permission to import hazardous chemicals : 3. 4. 5. -CTTf : Description of hazardous chemicals : (a) Physical form : (b) Chemical form : (c) Total volume and weight (in kilogrammes/tonnes) description of purpose of import : Description of storage of hazardous chemicals: (a)

Date : (b) Method of storage : 49 Dr. G. SUNDARAM, Jt. secy. Printed by the Manager, Govt. of India Press, Ring Road, New Delhi-110064 and published by the Controller of Publications, Delhi-110054, 1989

