

"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;]

SCHEDULE 2

[See rule 2(e)(ii),4(1)(b), 4(2) (1) and 6 (1) (b)]

ISOLATED STORAGE AT INSTALLATIONS OTHER THAN THOSE COVERED BY SCHEDULE 4

(a) The threshold quantities set out below relate to each installation or group of installation belonging to the same occupier where the distance between installation is not sufficient to avoid, in foreseeable circumstances, any aggravation of major accident hazards. These threshold quantities apply in any case to each group of installations belonging to the same occupier where the distance between the installations is less than 500 metres.

(b) For the purpose of determining the threshold quantity of 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 under the control of the same occupier any part of the boundary of which is within 500 meters of the said site; and
- (iii) in any vehicle, vessel, aircraft or hovercraft, under the control of the same occupier which is used for storage purpose either at the site or within 500 metres of it;

but no account shall be taken of any hazardous chemical which is in a vehicle, vessel, aircraft or a hovercraft used for transporting it.

S.No	Chemicals	Threshold Quantities (tonnes)	
		¹ [For application of rules 4,5,7 to 9 and 13 to 15]	[For application of rule 10 to 12]
1	2	3	4
1.	Acrylonitrile	350	5,000
2.	Ammonia	60	600
3.	Ammonium nitrate (a)	350	2,500
4.	Ammonium nitrate fertilizers (b)	1,250	10,000
5.	Chlorine	10	25
6.	Flammable gases as defined in Schedule 1, paragraph (b) (i)	50	300
³ [7.	Extremely flammable liquids as defined in Schedule 1, paragraph (b) (ii)	5000	50,000]
8.	Liquid oxygen	200	2000
9.	Sodium chlorate	25	250
10.	Sulphur dioxide	20	500
11.	Sulphur trioxide	15	100
⁴ [12.	Carbonyl chloride	0.750	0.750
13.	Hydrogen Sulphide	5	50
14.	Hydrogen Fluoride	5	50
15.	Hydrogen Cyanide	5	50
16.	Carbon disulphide	20	200
17.	Bromine	50	500
18.	Ethylene oxide	5	501
19.	Propylene oxide	5	50

¹ Substituted by Rule 10(i) (a) of the MSIHC (Amendment) Rules, 2000 notified by S.O.57(E), dated 19.1.2000 ;

² Substituted by Rule 10(i) (b), ibid;

³ Substituted entry 7 by Rule 10(ii), ibid ;

⁴ Inserted entries 12 to 27 by Rule 11 of the MSIHC (Amendment) Rules, 1994 notified vide S.O.2882,dated 3.10.1994.

S.No	Chemicals	Threshold Quantities (tonnes)	
		¹ [For application of rules 4,5,7 to 9 and 13 to 15]	[For application of rule 10 to 12]
1	2	3	4
20.	2-Propenal (Acrolein)	20	200
21.	Bromomethane (Methyl bromide)	20	200
22.	Methyl isocyanate	0.150	0.150
23.	Tetraethyl lead or tetramethyl lead	5	50
24.	1,2 Dibromoethane (Ethylene dibromide)	5	50
25.	Hydrogen chloride (liquefied gas)	25	250
26.	Diphenyl methane di-isocyanate (MDI)	20	200
27.	Toluene di-isocyanate (TDI)	10	100]
¹ [28.	Very highly flammable liquids as defined in Schedule 1, paragraph (b) (iii)	7,000	7,000]
29.	Highly flammable liquids as defined in Schedule 1, paragraph (b) (iv)	10,000	10,000
30.	Flammable liquids as defined in Schedule - 1, paragraph (b) (v)	15,000	1,00,000]

- (a) This applies to ammonium nitrate and mixtures of ammonium nitrates where the nitrogen content derived from the ammonium nitrate is greater than 28 per cent by weight and to aqueous solutions of ammonium nitrate where the concentration of ammonium nitrate is greater than 90 per cent by weight.
- (b) This applies to straight ammonium nitrate fertilizers and to compound fertilizers where the nitrogen content derived from the ammonium nitrate is greater than 28 per cent by weight (a compound-fertilizer contains ammonium nitrate together with phosphate and/or potash).

¹ Inserted entries 28, 29 and 30 by 10(iii) of the HSIHC (Amendment) Rules, 2000 notified by S.O.57(E), dated 19.1.2000.

SCHEDULE 3

[See Rule 2(e)(iii), 5 and 6(1) (a)]

LIST OF HAZARDOUS CHEMICALS FOR APPLICATION OF RULES 5 AND 7 TO 15

- (a) The quantities set-out-below relate to each installation or group of installations belonging to the same occupier where the distance between the installations is not sufficient to avoid, in foreseeable circumstances, any aggravation of major-accident hazards. These quantities apply in any case to each group of installations belonging to the same occupier where the distance between the installations is less than 500 metres.

- (b) For the purpose of determining the threshold quantity of a hazardous chemical in an industrial installation, account shall also be taken of any hazardous chemicals which is :-
 - (i) in that part of any pipeline under the control of the occupier have control of the site, which is within 500 metres off that site and connected to it;

 - (ii) at any other site under the control of the same occupier any part of the boundary of which is within 500 metres of the said site ; and

 - (iii) in any vehicle, vessel, aircraft or hovercraft under the control of the same occupier which is used for storage purpose either at the site or within 500 metres of it;

but no account shall be taken of any hazardous chemical which is in a vehicle, vessel, aircraft or hovercraft used for transporting it.

PART - I
NAMED CHEMICALS

S. No.	Chemicals	Threshold	Quantity	CAS Number
		for application of Rules 5, 7-9 and 13-15	for application of Rules 10-12	
(1)	(2)	(3)	(4)	(5)
GROUP 1-TOXIC SUBSTANCES				
1.	Aldicarb	100kg		116-06-3
2.	4-Aminodiphenyl	1 kg		96-67-1
3.	Amiton	1 kg		78-53-5
4.	Anabasine	100 kg		494-52-0
5.	Arsenic pentoxide, Arsenic (V) acid & salts	500 kg		
6.	Arsenic trioxide, Arsenic (III) acid & salts	100 kg		
7.	Arsine (Arsenic hydride)	10kg		7784-42-1
8.	Azinphos-ethyl	100kg		2642-71-9
9.	Azinphos-methyl	100 kg		86-50-0
10.	Benzidine	1 kg		92-87-5
11.	Bezidine salts	1 kg		
12.	Beryllium (powders, compounds)	10 kg		
13.	Bis (2-chloroethyl) sulphide	1 kg		505-60-2
14.	Bis (chloromethyl) ether	1 kg		542-88-1
15.	Carbophuran	100 kg		1563-66-2
16.	Carbophenothion	100 kg		786-19-6
17.	Chlorefenvinphos	100 kg		470-90-6
18.	4-(Chloroformyl) morpholine	1 kg		15159-40-7
19.	Chloromethyl methyl ether	1 kg		107-30-2
20.	Cobalt (metal, oxide, carbonates, sulphides, as powders)	1 t		
21.	Crimidine	100 kg		535-89-7
22.	Cynthoate	100 kg		3734-95-0
23.	Cycloheximide	100 kg		66-81-9
24.	Demeton	100 kg		8065-48-3
25.	Dialifos	100 kg		10311-84-9
26.	OO-Diethyl S-ethylsulphinylmethyl phosphorothiate	100 kg		2588-05-8
27.	OO-Diethyl S-ethylsulphonylmethyl phosphorothiate	100 kg		2588-06-9
28.	OO-Diethyl S-ethylthiomethyl Phosphorothioate	100 kg		2600-69-3

S. No.	Chemicals	Threshold	Quantity	CAS Number
		for application of Rules 5, 7-9 and 13-15	for application of Rules 10-12	
(1)	(2)	(3)	(4)	(5)
29.	OO-Diethyl S-isoprophylthiomethyl phosphorothiate	100 kg		78-52-4
30.	OO-Diethyl S-isopropylthiomethyl phosphorodithioate	100 kg		3309-68-0
31.	Dimefox	100 kg		115-26-4
32.	Dimethylcarbamoyl chloride	1 kg		79-44-7
33.	Dimethylnitrosamine	1 kg		62-75-9
34.	Dimethyl phosphorimidocynidic acid	1 t		63917-41-9
35.	Diphacinone	100 kg		82-66-6
36.	Disulfoton	100 kg		298-04-4
37.	EPN	100 kg		2104-64-5
38.	Ethion	100 kg		563-12-2
39.	Fensulfothion	100 kg		115-90-2
40.	Fluenetil	100 kg		4301-50-2
41.	Fluoroacetic acid	1 kg		144-49-0
42.	Fluoroacetic acid, salts	1 kg		
43.	Fluoroacetic acid, esters	1 kg		
44.	Fluoroacetic acid, amides	1 kg		
45.	4-Fluorobutyric acid	1 kg		462-23-7
46.	4-Fluorobutyric acid, salts	1 kg		
47.	4-Fluorobutyric acid, esters	1 kg		
48.	4-Fluorobutyric acid, amides	1 kg		
49.	4-Fluorobutyric acid	1 kg		37759-72-1
50.	4-Fluorocrotonic acid, salts	1 kg		
51.	4-Fluorocrotonic acid, esters	1 kg		
52.	4-Fluorocrotonic acid, amides	1 kg		
53.	4-Fluoro-2-hydroxybutyric acid, amides	1 kg		
54.	4-Fluoro-2-hydroxybutyric acid, salts	1 kg		
55.	4-Fluoro-2-hydroxybutyric acid, esters	1 kg		
56.	4-Fluoro-2-hydroxybutyric acid, amides	1 kg		
57.	Glycolonitrile (Hydroxyacetonitrile)	100 kg		107-16-4
58.	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	100 kg		194-8-74-3
59.	Hexmathylphosphoramide	1 kg		680-31-9
60.	Hydrogen selenide	10 kg		7783-07-5
61.	Isobenzan	100 kg		297-78-9
62.	Isodrin	100 kg		465-73-6
63.	Juglone (5-Hydroxynaphthalene 1,4 dione)	100 kg		481-39-0

S. No.	Chemicals	Threshold	Quantity	CAS Number
		for application of Rules 5, 7-9 and 13-15	for application of Rules 10-12	
(1)	(2)	(3)	(4)	(5)
64.	4,4-Methylenebis (2-chloroniline)	10 kg		101-14-4
65.	Mthyl isocynate	150 kg	150kg	624-83-9
66.	Mevinphos	100 kg		7786-34-7
67.	2-Naphthylamine	1 kg		91-59-8
68.	2-Nickel (metal, oxides, carbonates), sulphides, as powers)	1 t		
69.	Nickel tetracarbonyl	10 kg		13463-39-3
70.	Oxygendisulfoton	100 kg		2497-07-6
71.	Oxygen difluoride	10 kg		7783-41-7
72.	Paraxon (Diethyl 4-nitrophenyl phosphate)	100 kg		311-45-5
73.	Parathion	100 kg		56-38-2
74.	Parathion-methyl	100 kg		298-00-0
75.	Pentaborane	100 kg		19624-22-7
76.	Phorate	100 kg		298-02-2
77.	Phosacetim	100 kg		4104-14-7
78.	Phosgene (carbonyl chloride)	750 kg	750kg	75-44-5
79.	Phosphamidon	100 kg		13171-21-6
80.	Phosphine (Hydrogen phosphide)	100 kg		7803-51-2
81.	Promurit (1-(3,4 dichlorophenyl)-3-triazenthio-carboxamide)	100 kg		5836-73-7
82.	1,3-Propanesultone	1 kg		1120-71-4
83.	1-Propen-2-chloro-1,3diol diacetate	10 kg		10118-72-6
84.	Pyrazoxon	100 kg		108-34-9
85.	Selenium hexafluoride	10 kg		7783-79-1
86.	Sodium selenite	100 kg		10102-18-8
87.	Stibine (Antimony hydride)	100 kg		7803-52-3
88.	Sulfotep	100 kg		3689-24-5
89.	Sulphur dichloride	1 t		10545-99-0
90.	Tellurium hexafluoride	100 kg		7783-80-4
91.	TEPP	100 kg		107-49-3
92.	2,3,7,8,-Tetrachlorodibenzo-p-dioxin (TCDD)	1 kg		1746-01-6
93.	Tetramethylenedisulphotetramine	1 kg		80-12-6
94.	Thionazin	100 kg		297-97-2
95.	Tirpate (2,4-Dimethyl-1,3-dithiolane-2-carboxaldehyde O-methylcarbamoyloxime)	100 kg		26419-73-8

S. No.	Chemicals	Threshold	Quantity	CAS Number
		for application of Rules 5, 7-9 and 13-15	for application of Rules 10-12	
(1)	(2)	(3)	(4)	(5)
96.	Trichloromethanesulphonyl chloride	100 kg		594-42-3
97.	1-Tri (cyclohexyl) stannyl 1H-1,2,4-Triazole	100 kg		41083-11-8
98.	Triethylenemelamine	10 kg		51-18-3
99.	Warfarin	100 kg		81-81-2
GROUP -2 TOXIC SUBSTANCES				
100	Acetone cyanohydrin (2-Cyanopropan-2-ol)	200 t		75-86-5
101	Acrolein (2-Propenal)	20 t	¹ [200t]	107-02-8
102	Acrylonitrile	20 t	200t	107-13-1
103	Allyl alcohol (Propen-1-ol)	200 t		107-18-6
104	Alylamine	200 t		107-11-9
105	Ammonia	50 t	500t	7664-41-7
106	Bromine	40 t	¹ [500t]	7726-95-6
107	Carbon disulphide	20 t	200t	75-15-0
108	Chlorine	10 t	25t	7782-50-5
109	Diphneyl ethane di-isocynate (MDI)	20 t	¹ [200t]	101-68-8
110	Ethylene dibromide (1,2-Dibromoethane)	5 t	¹ [50t]	106-93-4
111	Ethyleneimine	5 t		151-56-4
112	Formaldehyde (concentration <90%)	5 t	¹ [50t]	50-00-0
113	Hydrogen chloride (liquified gas)	25 t	250t	7647-01-0
114	Hydrogen cyanide	5 t	20t	74-90-8
115	Hydrogen fluoride	5 t	50t	7664-39-3
116	Hydrogen sulphide	5 t	50t	7783-06-4
117	Methyl bromide (Bromomethane)	20 t	¹ [200 t]	74-83-9
118	Nitrogen oxides	50 t		11104-93-1
119	Propyleneimine	50 t		75-55-8
120	Sulphur dioxide	20 t	250t	7446-09-5
121	Sulphur trioxide	15 t	75t	7446-11-9
122	Tetraethyl lead	5 t	² [200t]	78-00-2
123	Tetra methyl lead	5 t	¹ [100t]	75-74-1
124	Toluene di-isocynate (TDI)	10 t		584-84-9

¹ Inserted by Rule14 (a to h) of MSIHC (Amendment) Rules, 1994 notified vide notification S.O.2882, dated 3.10.1994.

² Inserted by Rule14 (a to h) of MSIHC (Amendment) Rules, 1994 notified vide notification S.O.2882, dated 3.10.1994.

S. No.	Chemicals	Threshold	Quantity	CAS Number
		for application of Rules 5, 7-9 and 13-15	for application of Rules 10-12	
(1)	(2)	(3)	(4)	(5)
GROUP 3-HIGHLY REACTIVE SUBSTANCES				
125	Acetylene (ethyne)	5 t		74-86-2
126	a. Ammonium nitrate (1) b. Ammonium nitrate in form of fertilizer (2)	350t 1250 t	2500t	6484-52-2
127	2,2 Bis (tert-butylperoxy) butane) (concentration >70%)	5 t		2167-23-9
128	1, 1-Bis(tert-butylperoxy) cyclohexane (concentration > 80%)	5 t		3006-86-8
129	tert-Butyle proxyacetate (concentration ≤70%)	5 t		107-71-1
130	tert-Butyle peroxy isobutyrate (concentration >80%)	5 t		109-13-7
131	Tert-Butyl peroxy isopropyl carbonate (concentration ≥80%)	5 t		2372-21-6
132	Tert-Butyl peroxyacetate (concentration ≥80%)	5 t		1931-62-0
133	Tert-Butyl peroxyisobutyrate (concentration ≥77%)	50 t		927-07-1
134	Dibenzyl peroxydicarbonate (concentration ≥90%)	5 t		2144-45-8
135	Di-sec-butyl peroxydicarbonate (concentration ≥80%)	5 t		19910-65-7
136	Diethyl peroxydicarbonate (concentration ≥30%)	50 t		14666-78-5
137	2,2-dihydroperoxypropane (concentration ≥30%)	5 t		2614-76-08
138	di-isobutyl peroxide (concentration ≥50%)	50 t		3437-84-1
139	Di-n-propyl peroxydicarbonate (concentration ≥80%)	5 t		16066-38-9
140	Ethylene oxide	5 t	50t	75-21-8
141	Ethyl nitrate	50 t		625-58-1
142	3,3,6,6,9,9 Hexamethyl - 1,2,4 5-tert oxacyclononane (concentration ≥75%)	50 t		22397-33-7
143	Hydrogen	2 t	50 t	1333-74-0

S. No.	Chemicals	Threshold	Quantity	CAS Number
		for application of Rules 5, 7-9 and 13-15	for application of Rules 10-12	
(1)	(2)	(3)	(4)	(5)
144	Liquid Oxygen	200 t	¹ [2000t]	7782-41-7
145	Methyl ethyl ketone peroxide (concentration ≥60%)	5 t		1338-23-4
146	Methyl isobutyl ketone peroxide (concentration ≥60%)	50 t		37206-20-5
147	Peracetic acid (concentration ≥60%)	50 t		79-21-0
148	Propylene oxide	5 t	¹ [50t]	75-56-9
149	Sodium chlorate	25 t		7775-09-9
GROUP 4-EXPLOSIVE SUBSTANCES				
150	Barium azide	¹ [100] kg		18810-58-7
151	Bis(2,4,6 -trinitrophenyl) amine	50 t		131-073-7
152	Chlorotrinitro benzene	50 t		28260-61-9
153	Cellulose nitrate (containing 12.6% Nitrogen)	50 t		9004-70-0
154	Cyclotetramethyleneteraniramine	50 t		2691-41-0
155	Cyclotrimethylenetiraniramine	50 t		121-82-1
156	Diazodinitrophenol	10 t		7008-81-3
157	Diethylene glycol dinitrate	10 t		693-21-0
158	Dinitrophenol, salts	50 t		
159	Enthylene glycol dinitrate	10 t		628-96-6
160	1-Gyanyl-4-nitrosaminoguanyl-1-tetrazene	¹ [100 kg]		109-27-3
161	2, 2, 4, 4, 6, 6, -Hexanitostibene	50 t		20062-22-0
162	Hydrazine nitrate	50 t		13464-97-6
163	Lead azide	¹ [100 kg]		13424-46-9
164	Lead Styphnate (Lead 2,4,6-trinitroresorcinoxide)	50 t		15245-44-0
165	Mercury fulminate	10 t		20820-45-5 628-86-4
166	N-Methyl-N,2,4,6-tetranitroaniline	50 t		497-45-8
167	Nitroglycerine	10 t	10t	55-63-0
168	Pentacrythritol tetra nitrate	50 t		78-11-5

¹ Substituted by Rule 11(i) of the MSIHC (Amendment) Rules, 2000 notified vide S.O.57(E), dated 19.1.2000.

S. No.	Chemicals	Threshold	Quantity	CAS Number
		for application of Rules 5, 7-9 and 13-15	for application of Rules 10-12	
(1)	(2)	(3)	(4)	(5)
169	Picric acid, (2,3,6-Trinitrophenol)	50 t		88-89-1
170	Sodium picramate	50 t		831-52-7
171	Styphnic acid (2,4,6-Trinitroresorcinol)	50 t		82-71-3
172	1,3,5-Triamino-2,4,6-Trinitrobenzene	50 t		3058-38-6
173	Trinitroaniline-	50 t		26952-42-1
174	2,4,6-Trinitroanisole	50 t		606-35-9
175	Trinitrobenze	50 t		25377-32-6
176	Trinitrobenzoic acid	50 t		35860-50-5 129-66-8
177	Trinitrocresol	50 t		28905-71-7
178	2,4,6-Trinitrophenitole	50 t		4732-4-3
179	2,4,6-Trinitrotoluene	50 t	50 t	118-96-7

[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]

- (1) This applies to ammonium nitrate and mixtures of ammonium nitrate where the nitrogen content derived from the ammonium nitrate is greater than 28% by weight and aqueous solutions of ammonium nitrate where the concentration of ammonium nitrate is greater than 90% by weight.

- (2) This applied 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).