

**Scheduled Chemicals Controlled by  
the Chemical Weapons (Convention) Ordinance**

The following are chemicals included in Schedules 1, 2 and 3 or Annex on chemicals to the Chemical Weapons (Convention) Ordinance.

**Schedule 1**

A. <u>Toxic chemicals</u> :	(CAS registry number)
(1) O-Alkyl ( $\leq C_{10}$ , incl. cycloalkyl) alkyl (Me, Et, n-Pr or i-Pr)-phosphonofluoridates e.g. Sarin : O-Isopropyl methylphosphonofluoridate	(107-44-8)
Soman : O-Pinacolyl methylphosphonofluoridate	(96-64-0)
(2) O-Alkyl ( $\leq C_{10}$ , incl. cycloalkyl) N,N-dialkyl (Me, Et, n-Pr or i-Pr) phosphoramidocyanidates e.g. Tabun : O-Ethyl N,N-dimethyl phosphoramidocyanidate	(77-81-6)
(3) O-Alkyl (H or $\leq C_{10}$ , incl. cycloalkyl) S-2-dialkyl (Me, Et, n-Pr or i-Pr)-aminoethyl alkyl (Me, Et, n-Pr or i-Pr) phosphonothiolates and corresponding alkylated or protonated salts e.g. VX : O-Ethyl S-2-diisopropylaminoethyl methyl phosphonothiolate	(50782-69-9)
(4) Sulfur mustards :	
2-Chloroethylchloromethylsulfide	(2625-76-5)
Mustard gas : Bis(2-chloroethyl)sulfide	(505-60-2)
Bis(2-chloroethylthio)methane	(63869-13-6)
Sesquimustard :	
1,2-Bis(2-chloroethylthio)ethane	(3563-36-8)
1,3-Bis(2-chloroethylthio)-n-propane	(63905-10-2)
1,4-Bis(2-chloroethylthio)-n-butane	(142868-93-7)
1,5-Bis(2-chloroethylthio)-n-pentane	(142868-94-8)
Bis(2-chloroethylthiomethyl)ether	(63918-90-1)
O-Mustard : Bis(2-chloroethylthioethyl)ether	(63918-89-8)
(5) Lewisites :	
Lewisite 1 : 2-Chlorovinylchloroarsine	(541-25-3)
Lewisite 2 : Bis(2-chlorovinyl)chloroarsine	(40334-69-8)
Lewisite 3 : Tris(2-chlorovinyl)arsine	(40334-70-1)
(6) Nitrogen mustards :	
HN1 : Bis(2-chloroethyl)ethylamine	(538-07-8)
HN2 : Bis(2-chloroethyl)methylamine	(51-75-2)
HN3 : Tris(2-chloroethyl)amine	(555-77-1)
(7) Saxitoxin	(35523-89-8)
(8) Ricin	(9009-86-3)
(8A) P-alkyl (H or $\leq C_{10}$ , incl. cycloalkyl) N-(1-(dialkyl( $\leq C_{10}$ incl. cycloalkyl)amino)) alkylidene(H or $\leq C_{10}$ , incl. cycloalkyl) phosphoramidic fluorides and corresponding alkylated or protonated salts e.g. N-(1-(di-n-decylamino)-n-decylidene)-P-decylphosphoramidic fluoride	(2387495-99-8)
Methyl-(1-(diethylamino)ethylidene)phosphoramidofluoridate	(2387496-12-8)
(8B) O-alkyl (H or $\leq C_{10}$ , incl. cycloalkyl) N-(1-(dialkyl( $\leq C_{10}$ , incl. cycloalkyl)amino)) alkylidene(H or $\leq C_{10}$ , incl. cycloalkyl) phosphoramidofluoridates and corresponding alkylated or protonated salts e.g. O-n-Decyl N-(1-(di-n-decylamino)-n-decylidene)phosphoramidofluoridate	(2387496-00-4)
Methyl (1-(diethylamino)ethylidene)phosphoramidofluoridate	(2387496-04-8)
Ethyl (1-(diethylamino)ethylidene)phosphoramidofluoridate	(2387496-06-0)

- (8C) Methyl-(bis(diethylamino)methylene)phosphonamidofluoridate (2387496-14-0)
- (8D) Carbamates (quaternaries and bisquaternaries of dimethylcarbamoyloxy pyridines)
- (a) Quaternaries of dimethylcarbamoyloxy pyridines:  
 1-[N,N-dialkyl( $\leq C_{10}$ )-N-(n-(hydroxyl, cyano, acetoxy)alkyl( $\leq C_{10}$ )) ammonio]-n-[N-(3-dimethylcarbamoxy- $\alpha$ -picolinyl)-N,N-dialkyl( $\leq C_{10}$ ) ammonio]decane dibromide (n=1-8)  
 e.g. 1-[N,N-dimethyl-N-(2-hydroxy)ethylammonio]-10-[N-(3-dimethylcarbamoxy- $\alpha$ -picolinyl)-N,N-dimethylammonio]decane dibromide (77104-62-2)
- (b) Bisquaternaries of dimethylcarbamoyloxy pyridines: 1,n-Bis[N-(3-dimethylcarbamoxy- $\alpha$ -picolyl)-N,N-dialkyl( $\leq C_{10}$ ) ammonio]-alkane-(2,(n-1)-dione) dibromide (n=2-12)  
 e.g. 1,10-Bis[N-(3-dimethylcarbamoxy- $\alpha$ -picolyl)-N-ethyl-N-methylammonio]decane-2,9-dione dibromide (77104-00-8)

B. Precursors :

- (9) Alkyl (Me, Et, n-Pr or i-Pr) phosphonyldifluorides  
 e.g. DF : Methylphosphonyldifluoride (676-99-3)
- (10) O-Alkyl (H or  $\leq C_{10}$ , incl. cycloalkyl) O-2-dialkyl  
 (Me, Et, n-Pr or i-Pr)-aminoethyl alkyl  
 (Me, Et, n-Pr or i-Pr) phosphonites and  
 corresponding alkylated or protonated salts  
 e.g. QL : O-Ethyl O-2-diisopropylaminoethyl  
 methylphosphonite (57856-11-8)
- (11) Chlorosarin : O-Isopropyl methylphosphonochloridate (1445-76-7)
- (12) Chlorosoman : O-Pinacolyl methylphosphonochloridate (7040-57-5)

**Schedule 2**

A. Toxic chemicals:

- (1) Amiton : O,O-Diethyl S-[2-(diethylamino)ethyl]  
 phosphorothiolate (78-53-5)  
 and corresponding alkylated or protonated salts
- (2) PFIB : 1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene (382-21-8)
- (3) BZ : 3-Quinuclidinyl benzilate (\*) (6581-06-2)

B. Precursors:

- (4) Chemicals, except for those listed in Schedule 1,  
 containing a phosphorus atom to which is bonded  
 one methyl, ethyl or propyl (normal or iso) group  
 but not further carbon atoms,  
 e.g. Methylphosphonyl dichloride (676-97-1)  
 Dimethyl methylphosphonate (756-79-6)  
 Exemption : Fonofos : O-Ethyl S-phenyl  
 ethylphosphonothiolothionate (944-22-9)
- (5) N,N-Dialkyl (Me, Et, n-Pr or i-Pr) phosphoramidic dihalides
- (6) Dialkyl (Me, Et, n-Pr or i-Pr) N,N-dialkyl  
 (Me, Et, n-Pr or i-Pr)-phosphoramidates
- (7) Arsenic trichloride (7784-34-1)
- (8) 2,2-Diphenyl-2-hydroxyacetic acid (76-93-7)
- (9) Quinuclidin-3-ol (1619-34-7)
- (10) N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethyl-2-chlorides  
 and corresponding protonated salts
- (11) N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-ols  
 and corresponding protonated salts  
 Exemptions : N,N-Dimethylaminoethanol (108-01-0)  
 and corresponding protonated salts  
 N,N-Diethylaminoethanol (100-37-8)  
 and corresponding protonated salts
- (12) N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-thiols  
 and corresponding protonated salts

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| (13) Thiodiglycol: Bis(2-hydroxyethyl)sulfide  | (111-48-8) |
| (14) Pinacolyl alcohol: 3,3-Dimethylbutan-2-ol | (464-07-3) |

### **Schedule 3**

#### A. Toxic chemicals :

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| (1) Phosgene : Carbonyl dichloride       | (75-44-5)  |
| (2) Cyanogen chloride                    | (506-77-4) |
| (3) Hydrogen cyanide                     | (74-90-8)  |
| (4) Chloropicrin : Trichloronitromethane | (76-06-2)  |

#### B. Precursors :

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|------------------------------|--------------|
| (5) Phosphorus oxychloride   | (10025-87-3) |
| (6) Phosphorus trichloride   | (7719-12-2)  |
| (7) Phosphorus pentachloride | (10026-13-8) |
| (8) Trimethyl phosphite      | (121-45-9)   |
| (9) Triethyl phosphite       | (122-52-1)   |
| (10) Dimethyl phosphite      | (868-85-9)   |
| (11) Diethyl phosphite       | (762-04-9)   |
| (12) Sulfur monochloride     | (10025-67-9) |
| (13) Sulfur dichloride       | (10545-99-0) |
| (14) Thionyl chloride        | (7719-09-7)  |
| (15) Ethyldiethanolamine     | (139-87-7)   |
| (16) Methyldiethanolamine    | (105-59-9)   |
| (17) Triethanolamine         | (102-71-6)   |