

**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. Toxic chemicals : (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) phosphonamidic fluorides and corresponding
alkylated or protonated salts
e.g. N-(1-(di-n-decylamino)-n-decylidene)-P-decylphosphonamidic
fluoride (2387495-99-8)
Methyl-(1-(diethylamino)ethylidene)phosphonamidofluoridate (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- α -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- α -picolinyl)-N,N-dimethylammonio]decane dibromide (77104-62-2)
- (b) Bisquaternaries of dimethylcarbamoyloxy pyridines: 1,n-Bis[N-(3-dimethylcarbamoxy- α -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- α -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) |