

Chemical Weapon Precursors Controlled under the Import and Export Ordinance

<u>Schedule No. under CWC</u>	<u>Dual-Use Goods List Item 1C350 (CAS Registry No¹)</u>
Schedule 2	(1) Thiodiglycol (<i>111-48-8</i>);
Schedule 3	(2) Phosphorus oxychloride (<i>10025-87-3</i>);
Schedule 2	(3) Dimethyl methylphosphonate (<i>756-79-6</i>);
Schedule 1	(4) Methyl phosphonyldifluoride (<i>676-99-3</i>);
Schedule 2	(5) Methyl phosphonyl dichloride (<i>676-97-1</i>);
Schedule 3	(6) Dimethylphosphite (<i>868-85-9</i>);
Schedule 3	(7) Phosphorus trichloride (<i>7719-12-2</i>);
Schedule 3	(8) Trimethyl phosphite (<i>121-45-9</i>);
Schedule 3	(9) Thionyl chloride (<i>7719-09-7</i>);
-	(10) 3-Hydroxy-1-methylpiperidine (<i>3554-74-3</i>);
Schedule 2	(11) N, N-Diisopropyl-(beta)-aminoethyl chloride (<i>96-79-7</i>);
Schedule 2	(12) N, N-Diisopropyl-(beta)-aminoethane thiol (<i>5842-07-9</i>);
Schedule 2	(13) 3-Quinuclidinol (<i>1619-34-7</i>);
-	(14) Potassium fluoride (<i>7789-23-3</i>);
-	(15) 2-Chloroethanol (<i>107-07-3</i>);
-	(16) Dimethylamine (<i>124-40-3</i>);
Schedule 2	(17) Diethyl ethylphosphonate (<i>78-38-6</i>);
Schedule 2	(18) Diethyl-N,N-dimethylphosphoramidate (<i>2404-03-7</i>);
Schedule 3	(19) Diethyl phosphite (<i>762-04-9</i>);
-	(20) Dimethylamine hydrochloride (<i>506-59-2</i>);
Schedule 2	(21) Ethyl phosphinyl dichloride (<i>1498-40-4</i>);
Schedule 2	(22) Ethyl phosphonyl dichloride (<i>1066-50-8</i>);
Schedule 1	(23) Ethyl phosphonyl difluoride (<i>753-98-0</i>);
-	(24) Hydrogen fluoride (<i>7664-39-3</i>);
-	(25) Methyl benzilate (<i>76-89-1</i>);
Schedule 2	(26) Methyl phosphinyl dichloride (<i>676-83-5</i>);
Schedule 2	(27) N, N-Diisopropyl-(beta)-amino ethanol (<i>96-80-0</i>);

Note ¹ The CAS Registry No. is a universal identification number assigned to a specific chemical substance by the Chemical Abstract Service. Since synonyms are common for chemicals, traders and carriers are advised to make reference to the CAS Registry No. in the identification of controlled chemicals.

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Schedule 2	(28) Pinacolyl alcohol (464-07-3);
Schedule 1	(29) o-Ethyl-2-diisopropylaminoethyl methylphosphonite (57856-11-8);
Schedule 3	(30) Triethyl phosphite (122-52-1);
Schedule 2	(31) Arsenic trichloride (7784-34-1);
Schedule 2	(32) Benzilic acid (76-93-7);
Schedule 2	(33) Diethyl methylphosphonite (15715-41-0);
Schedule 2	(34) Dimethyl ethylphosphonate (6163-75-3);
Schedule 2	(35) Ethyl phosphinyl difluoride (430-78-4);
Schedule 2	(36) Methyl phosphinyl difluoride (753-59-3);
-	(37) 3-Quinuclidone (3731-38-2);
Schedule 3	(38) Phosphorus pentachloride (10026-13-8);
-	(39) Pinacolone (75-97-8);
-	(40) Potassium cyanide (151-50-8);
-	(41) Potassium bifluoride (7789-29-9);
-	(42) Ammonium hydrogen fluoride (1341-49-7);
-	(43) Sodium fluoride (7681-49-4);
-	(44) Sodium bifluoride (1333-83-1);
-	(45) Sodium cyanide (143-33-9);
Schedule 3	(46) Triethanolamine (102-71-6);
-	(47) Phosphorus pentasulphide (1314-80-3);
-	(48) Di-isopropylamine (108-18-9);
-	(49) Diethylaminoethanol (100-37-8);
-	(50) Sodium sulphide (1313-82-2);
Schedule 3	(51) Sulphur monochloride (10025-67-9);
Schedule 3	(52) Sulphur dichloride (10545-99-0);
-	(53) Triethanolamine hydrochloride (637-39-8);
Schedule 2	(54) N, N-Diisopropyl-(Beta)-aminoethyl chloride hydrochloride (4261-68-1);

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Dual-Use Goods List Item 1C450 (CAS Registry No.)

(a) Toxic chemicals, as follows :

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| Schedule 2 | (1) Amiton : O,O-Diethyl S-[2-(diethylamino)ethyl] phosphorothiolate (78-53-5) and corresponding alkylated or protonated salts; |
| Schedule 2 | (2) PFIB : 1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene (382-21-8); |
| Schedule 2 | (3) BZ : 3-Quinuclidinyl benzilate (6581-06-2); |
| Schedule 3 | (4) Phosgene : Carbonyl dichloride (75-44-5); |
| Schedule 3 | (5) Cyanogen chloride (506-77-4); |
| Schedule 3 | (6) Hydrogen cyanide (74-90-8); |
| Schedule 3 | (7) Chloropicrin : Trichloronitromethane (76-06-02); |

(b) Toxic chemical precursors, as follows :

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| Schedule 2 | (1) Chemicals, other than those controlled by the Munitions List or by 1C350, containing a phosphorus atom to which is bonded one methyl, ethyl, or propyl (normal or iso) group but not further carbon atoms;

except :

Fonofos : O-Ethyl S-phenyl ethylphosphonothiolothionate (944-22-9); |
| Schedule 2 | (2) N, N-Dialkyl [methyl, ethyl or propyl (normal or iso)] phosphoramidic dihalides; |
| Schedule 2 | (3) Dialkyl [methyl, ethyl or propyl (normal or iso)] N, N-Dialkyl [methyl, ethyl or propyl (normal or iso)]-phosphoramidates, other than Diethyl-N, N-dimethylphosphoramidate which is controlled by 1C350; |
| Schedule 2 | (4) N, N-Dialkyl [methyl, ethyl or propyl (normal or iso)] aminoethyl-2-chlorides and corresponding protonated salts, other than N, N-Diisopropyl-(beta)-aminoethyl chloride or N, N-Diisopropyl-(beta)-aminoethyl chloride hydrochloride which are controlled by 1C350; |
| Schedule 2 | (5) N, N-Dialkyl [methyl, ethyl or propyl (normal or iso)] aminoethane-2-ols and corresponding protonated salts, other than N, N-Diisopropyl-(beta)-aminoethanol (96-80-0) and N, N-Diethylaminoethanol (100-37-8) which are controlled by 1C350; except :

(a) N, N-Dimethylaminoethanol (108-01-0) and corresponding protonated salts;

(b) Protonated salts of N, N-Diethylaminoethanol (100-37-8); |

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- Schedule 2 (6) N, N-Dialkyl [methyl, ethyl or propyl (normal or iso)] aminoethane-2-thiols and corresponding protonated salts, other than N, N-Diisopropyl-(beta)-aminoethane thiol which is controlled by 1C350;
- Schedule 3 (7) Ethyldiethanolamine (139-87-7);
- Schedule 3 (8) Methyldiethanolamine (105-59-9);
- (c) Military agents, as follows :
- Schedule 1 (1) Alkyl phosphonofluoridates (e.g., the nerve agents sarin (107-44-8) and soman (96-64-0));
- Schedule 1 (2) Alkyl s-aminoethyl alkyl phosphonothiolates and corresponding alkylated or protonated salts (e.g., the nerve agent VX (50782-69-9));
- Schedule 1 (3) 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)
- Schedule 1 (4) 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)
- Schedule 1 (5) Alkyl phosphonyldifluorides;
- (e.g. DF-Methylphosphonyldifluoride (676-99-3));
- Schedule 1 (6) Chlorosarin (1445-76-7);
- Schedule 1 (7) Alkyl phosphoramidocyanidates (e.g., the nerve agent tabun (77-81-6));
- Schedule 1 (8) Alkyl s-aminoethyl alkyl phosphonites and corresponding alkylated or protonated salts (e.g., QL-O-Ethyl O-2-diisopropylaminoethyl methylphosphonite (57856-11-8), a key precursor for VX);

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| Schedule 1 | (9) 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) |
| Schedule 1 | (10) Ricin (9009-86-3); |
| Schedule 1 | (11) Saxitoxin (35523-89-8); |
| Schedule 1 | (12) Chlorosoman (7040-57-5); |

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Munitions List Item 7(b) (CAS Registry No.)

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| Schedule 1 | (1) Alkyl (Methyl, Ethyl, n-Propyl or Isopropyl Phosphonyl Difluorides, such as :
DF : Methyl Phosphonyldifluoride (676-99-3); |
| Schedule 1 | (2) O-Alkyl (H or equal to or less than C ₁₀ , including cycloalkyl) O-2-dialkyl (Methyl, Ethyl, n-Propyl or Isopropyl) aminoethyl alkyl (Methyl, Ethyl, n-Propyl or Isopropyl) phosphonite and corresponding alkylated and protonated salts, such as :
QL : O-Ethyl-2-di-isopropylaminoethyl methylphosphonite (57856-11-8); |
| Schedule 1 | (3) Chlorsoarin : O-Isopropyl methylphosphonochloridate (1445-76-7); |
| Schedule 1 | (4) Chlorosoman : O-Pinakolyl methylphosphonochloridate (7040-57-5). |

Note : The products list is for reference only and may be subject to change from time to time. Traders are advised to refer to the schedules promulgated in the Imports and Exports (Strategic Commodities) Regulations (Cap. 60) for up-to-date information in relation to scope of products subject to licensing requirements.