

**Chemical Weapon Precursors Controlled**  
**under the Import and Export Ordinance**  
 (from 1 November 2023)

<b>Schedule No.</b> <b><u>under CWC</u></b>	<b><u>Dual-Use Goods List Item 1C350 (CAS Registry No<sup>1</sup>)</u></b>
Schedule 2B	(1) Thiodiglycol (CAS 111-48-8);
Schedule 3B	(2) Phosphorus oxychloride (CAS 10025-87-3);
Schedule 2B	(3) Dimethyl methylphosphonate (CAS 756-79-6);
Schedule 1B	(4) Methyl phosphonyldifluoride (CAS 676-99-3) in the Munitions List;
Schedule 2B	(5) Methyl phosphonyl dichloride (CAS 676-97-1);
Schedule 3B	(6) Dimethylphosphite (DMP) (CAS 868-85-9);
Schedule 3B	(7) Phosphorus trichloride (CAS 7719-12-2);
Schedule 3B	(8) Trimethyl phosphite (TMP) (CAS 121-45-9);
Schedule 3B	(9) Thionyl chloride (CAS 7719-09-7);
-	(10) 3-Hydroxy-1-methylpiperidine (CAS 3554-74-3);
-	(11) N,N-Diisopropyl-(beta)-aminoethyl chloride (CAS 96-79-7);
-	(12) N,N-Diisopropyl-(beta)-aminoethane thiol (CAS 5842-07-9);
Schedule 2B	(13) 3-Quinuclidinol (CAS 1619-34-7);
-	(14) Potassium fluoride (CAS 7789-23-3);
-	(15) 2-Chloroethanol (CAS 107-07-3);
-	(16) Dimethylamine (CAS 124-40-3);
-	(17) Diethyl ethylphosphonate (CAS 78-38-6);
-	(18) Diethyl-N,N-dimethylphosphoramidate (CAS 2404-03-7);
Schedule 3B	(19) Diethyl phosphite (CAS 762-04-9);
-	(20) Dimethylamine hydrochloride (CAS 506-59-2);
-	(21) Ethyl phosphinyl dichloride (CAS 1498-40-4);
-	(22) Ethyl phosphonyl dichloride (CAS 1066-50-8);
-	(23) Ethyl phosphonyl difluoride (CAS 753-98-0) in the Munitions List;
-	(24) Hydrogen fluoride (CAS 7664-39-3);
-	(25) Methyl benzilate (CAS 76-89-1);
-	(26) Methyl phosphinyl dichloride (CAS 676-83-5);
-	(27) N,N-Diisopropyl-(beta)-amino ethanol (CAS 96-80-0);
Schedule 2B	(28) Pinacolyl alcohol (CAS 464-07-3);
Schedule 1B	(29) See the Munitions List for O-Ethyl-2-di-isopropylaminoethyl (QL) methylphosphonite (CAS 57856-11-8);
Schedule 3B	(30) Triethyl phosphite (CAS 122-52-1);
Schedule 2B	(31) Arsenic trichloride (CAS 7784-34-1);
Schedule 2B	(32) Benzilic acid (CAS 76-93-7);
-	(33) Diethyl methylphosphonite (CAS 15715-41-0);

- (34) Dimethyl ethylphosphonate (CAS 6163-75-3);
- (35) Ethyl phosphinyl difluoride (CAS 430-78-4);
- (36) Methyl phosphinyl difluoride (CAS 753-59-3);
- (37) 3-Quinuclidone (CAS 3731-38-2);
- Schedule 3B (38) Phosphorus pentachloride (CAS 10026-13-8);
- (39) Pinacolone (CAS 75-97-8);
- (40) Potassium cyanide (CAS 151-50-8);
- (41) Potassium bifluoride (CAS 7789-29-9);
- (42) Ammonium hydrogen fluoride or ammonium bifluoride (CAS 1341-49-7);
- (43) Sodium fluoride (CAS 7681-49-4);
- (44) Sodium bifluoride (CAS 1333-83-1);
- (45) Sodium cyanide (CAS 143-33-9);
- Schedule 3B (46) Triethanolamine (CAS 102-71-6);
- (47) Phosphorus pentasulphide (CAS 1314-80-3);
- (48) Di-isopropylamine (CAS 108-18-9);
- Schedule 2B (49) Diethylaminoethanol (CAS 100-37-8);
- (50) Sodium sulphide (CAS 1313-82-2);
- Schedule 3B (51) Sulphur monochloride (CAS 10025-67-9);
- Schedule 3B (52) Sulphur dichloride (CAS 10545-99-0);
- (53) Triethanolamine hydrochloride (CAS 637-39-8);
- (54) N,N-Diisopropyl-(beta)-aminoethyl chloride hydrochloride (CAS 4261-68-1);
- (55) Methylphosphonic acid (CAS 993-13-5);
- (56) Diethyl methylphosphonate (CAS 683-08-9);
- (57) N,N-Dimethyl aminophosphoryl dichloride (CAS 677-43-0);
- (58) Triisopropyl phosphite (CAS 116-17-6);
- Schedule 3B (59) Ethyl diethanolamine (CAS 139-87-7);
- (60) O,O-Diethyl phosphorothioate (CAS 2465-65-8);
- (61) O,O-Diethyl phosphorodithioate (CAS 298-06-6);
- (62) Sodium hexafluorosilicate (CAS 16893-85-9);
- (63) Methyl phosphonothioic dichloride (CAS 676-98-2);
- (64) Diethylamine (CAS 109-89-7);
- (65) N,N-Diisopropylaminoethanethiol hydrochloride (CAS 41480-75-5);
- (66) Methyl dichlorophosphate (CAS 677-24-7);

- (67) Ethyl dichlorophosphate (CAS 1498-51-7);
- (68) Methyl difluorophosphate (CAS 22382-13-4);
- (69) Ethyl difluorophosphate (CAS 460-52-6);
- (70) Diethyl chlorophosphite (CAS 589-57-1);
- (71) Methyl chlorofluorophosphate (CAS 754-01-8);
- (72) Ethyl chlorofluorophosphate (CAS 762-77-6);
- (73) N,N-Dimethylformamidine (CAS 44205-42-7);
- (74) N,N-Diethylformamidine (CAS 90324-67-7);
- (75) N,N-Dipropylformamidine (CAS 48044-20-8);
- (76) N,N-Diisopropylformamidine (CAS 857522-08-8);
- (77) N,N-Dimethylacetamidine (CAS 2909-14-0);
- (78) N,N-Diethylacetamidine (CAS 14277-06-6);
- (79) N,N-Dipropylacetamidine (CAS 1339586-99-0);
- (80) N,N-Dimethylpropanamidine (CAS 56776-14-8);
- (81) N,N-Diethylpropanamidine (CAS 84764-73-8);
- (82) N,N-Dipropylpropanamidine (CAS 1341496-89-6);
- (83) N,N-Dimethylbutanamidine (CAS 1340437-35-5);
- (84) N,N-Diethylbutanamidine (CAS 53510-30-8);
- (85) N,N-Dipropylbutanamidine (CAS 1342422-35-8);
- (86) N,N-Diisopropylbutanamidine (CAS 1315467-17-4);
- (87) N,N-Dimethylisobutanamidine (CAS 321881-25-8);
- (88) N,N-Diethylisobutanamidine (CAS 1342789-47-2);
- (89) N,N-Dipropylisobutanamidine (CAS 1342700-45-1);

*Notes:*

1. 1C350 does not control “chemical mixtures” containing one or more of the chemicals specified in entries 1C350(2), (6), (7), (8), (9), (10), (14), (15), (16), (19), (20), (24), (25), (30), (37), (38), (39), (40), (41), (42), (43), (44), (45), (46), (47), (48), (49), (50), (51), (52), (53), (58), (59), (60), (61), (62), (64), (66), (67), (68), (69), (70), (71), (72), (73), (74), (75), (76), (77), (78), (79), (80), (81), (82), (83), (84), (85), (86), (87), (88) and (89) in which no individually specified chemical constitutes more than 30% by the weight of the mixture.
2. 1C350 does not control products identified as consumer goods packaged for retail sale for personal use or packaged for individual use.

**Schedule No.  
under CWC**

**Dual-Use Goods List Item 1C450 (CAS Registry No.<sup>1</sup>)**

(a) Toxic chemicals, as follows :

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

(b) Toxic chemical precursors, as follows :

- |             |   |
|-------------|---|
| Schedule 2B | (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;<br>except :<br>Fonofos : O-Ethyl S-phenyl ethylphosphonothiolothionate (CAS 944-22-9);   |
| Schedule 2B | (2) N,N-Dialkyl [methyl, ethyl or propyl (normal or iso)] phosphoramidic dihalides, other than N,N-Dimethyl aminophosphoryl dichloride which is controlled by 1C350(57);  |
| Schedule 2B | (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 2B | (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 2B | (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 (CAS 96-80-0) and N,N-Diethylaminoethanol (CAS 100-37-8) which are controlled by 1C350; except :<br>(a) N,N-Dimethylaminoethanol (CAS 108-01-0) and corresponding protonated salts;<br>(b) Protonated salts of N,N-Diethylaminoethanol (CAS 100-37-8); |
| Schedule 2B | (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 (CAS 5842-07-9) and N,N-Diisopropylaminoethanethiol hydrochloride (CAS 41480-75-5) which are controlled by 1C350;
- Schedule 3B (7) See 1C350 for Ethyldiethanolamine (CAS 139-87-7);
- Schedule 3B (8) Methyldiethanolamine (CAS 105-59-9);

*Notes:*

1. 1C450 does not control “chemical mixtures” containing one or more of the chemicals specified in entries 1C450(a)(4), (5), (6) and (7) and (b)(8) in which no individually specified chemical constitutes more than 30% by the weight of the mixture.
2. 1C450 does not control products identified as consumer goods packaged for retail sale for personal use or packaged for individual use.

**Schedule No.  
under CWC**

**Munitions List Item 7(b) (CAS Registry No.<sup>1</sup>)**

(1) CW nerve agents:

- Schedule 1A (a) O-Alkyl (equal to or less than C<sub>10</sub>, including cycloalkyl) alkyl (Methyl, Ethyl, n-Propyl or Isopropyl)-phosphonofluoridates, such as:
- Sarin (GB): O-Isopropyl methylphosphonofluoridate (CAS 107-44-8); and
- Soman (GD): O-Pinacolyl methylphosphonofluoridate (CAS 96-64-0);
- Schedule 1A (b) O-Alkyl (equal to or less than C<sub>10</sub>, including cycloalkyl) N,N-dialkyl (Methyl, Ethyl, n-Propyl or Isopropyl) phosphoramidocyanidates, such as:
- Tabun (GA): O-Ethyl N,N-dimethylphosphoramidocyanidate (CAS 77-81-6);
- Schedule 1A (c) O-Alkyl (H or equal to or less than C<sub>10</sub>, including cycloalkyl) S-2-dialkyl (Methyl, Ethyl, n-Propyl or Isopropyl)-aminoethyl alkyl (Methyl, Ethyl, n-Propyl or Isopropyl) phosphonothiolates and corresponding alkylated and protonated salts, such as:
- VX: O-Ethyl S-2-diisopropylaminoethyl methyl phosphonothiolate (CAS 50782-69-9);
- Schedule 1A (d) P-alkyl (H or equal to or less than C<sub>10</sub>, incl. cycloalkyl) N-(1-(dialkyl (equal to or less than C<sub>10</sub>, incl. cycloalkyl) amino)) alkylidene (H or equal to or less than C<sub>10</sub>, incl. cycloalkyl) phosphonamidic fluorides and corresponding alkylated or protonated salts, such as:
- (1) N-(1-(di-n-decylamino)-n-decylidene)-P-decylphosphonamidic fluoride (CAS 2387495-99-8);

- (2) Methyl-(1-(diethylamino) ethylidene) phosphoramidofluoridate (CAS 2387496-12-8);
- Schedule 1A (e) O-alkyl (H or equal to or less than C<sub>10</sub>, incl. cycloalkyl) N-(1-(dialkyl (equal to or less than C<sub>10</sub>, incl. cycloalkyl) amino)) alkylidene (H or equal to or less than C<sub>10</sub>, incl. cycloalkyl) phosphoramidofluoridates and corresponding alkylated or protonated salts, such as:
- (1) O-n-DecylN-(1-(di-n-decylamino)-n-decylidene) phosphoramidofluoridate (CAS 2387496-00-4);
- (2) Methyl-(1-(diethylamino) ethylidene) phosphoramidofluoridate (CAS 2387496-04-8);
- (3) Ethyl-(1-(diethylamino) ethylidene) phosphoramidofluoridate (CAS 2387496-06-0);
- Schedule 1A (f) Methyl-(bis (diethylamino) methylene) phosphoramidofluoridate (CAS 2387496-14-0);
- Schedule 1A (g) Carbamates (quaternaries and bisquaternaries of dimethylcarbamoyloxypyridines):
- (1) Quaternaries of dimethylcarbamoyloxypyridines:  
1-[N,N-dialkyl (equal to or less than C<sub>10</sub>)-N-(n-(hydroxyl, cyano, acetoxy) alkyl (equal to or less than C<sub>10</sub>)) ammonio]-n-[N-(3-dimethylcarbamoxy- $\alpha$ -picolinyl)-N,N-dialkyl (equal to or less than C<sub>10</sub>) ammonio] decane dibromide (n=1-8), such as:  
1-[N,N-dimethyl-N-(2-hydroxy) ethylammonio]-10-[N-(3-dimethylcarbamoxy- $\alpha$ -picolinyl)-N,Ndimethylammonio] decane dibromide (CAS 77104-62-2);
- (2) Bisquaternaries of dimethylcarbamoyloxypyridines:  
1,n-Bis[N-(3-dimethylcarbamoxy- $\alpha$ -picolyl)-N,N-dialkyl (equal to or less than C<sub>10</sub>) ammonio]-alkane-(2,(n-1)-dione) dibromide (n=2-12), such as:  
1,10-Bis[N-(3-dimethylcarbamoxy- $\alpha$ -picolyl)-N-ethyl-N-methyl ammonio] decane-2,9-dione dibromide (CAS 77104-00-8);
- (2) CW vesicant agents:
- Schedule 1A (a) Sulfur mustards, such as:
- (1) 2-Chloroethylchloromethylsulfide (CAS 2625-76-5)
- (2) Bis (2-chloroethyl) sulfide (CAS 505-60-2)
- (3) Bis (2-chloroethylthio) methane (CAS 63869-13-6)
- (4) 1,2-Bis (2-chloroethylthio) ethane (CAS 3563-36-8)
- (5) 1,3-Bis (2-chloroethylthio)-n-propane (CAS 63905-10-2)
- (6) 1,4-Bis (2-chloroethylthio)-n-butane (CAS 142868-93-7)
- (7) 1,5-Bis (2-chloroethylthio)-n-pentane (CAS 142868-94-8)
- (8) Bis (2-chloroethylthiomethyl) ether (CAS 63918-90-1)
- (9) Bis (2-chloroethylthioethyl) ether (CAS 63918-89-8);

Schedule 1A	(b) Lewisites, such as : (1) 2-chlorovinyl dichloroarsine (CAS 541-25-3) (2) Tris (2-chlorovinyl) arsine (CAS 40334-70-1) (3) Bis (2-chlorovinyl) chloroarsine (CAS 40334-69-8)
Schedule 1A	(c) Nitrogen mustards, such as : (1) HN1 : bis (2-chloroethyl) ethylamine (CAS 538-07-8) (2) HN2 : bis (2-chloroethyl) methylamine (CAS 51-75-2) (3) HN3 : tris (2-chloroethyl) amine (CAS 555-77-1)
Schedule 2A	(3) CW incapacitating agents, such as : 3-Quinuclidinyl benzilate (BZ) (CAS 6581-06-2);
-	(4) CW defoliants, such as: (a) Butyl 2-chloro-4-fluorophenoxyacetate (LNF); (b) 2,4,5-trichlorophenoxyacetic acid (CAS 93-76-5) mixed with 2,4-dichlorophenoxyacetic acid (CAS 94-75-7) (Agent Orange) (CAS 39277-47-9);

**Schedule No.  
under CWC**

**Munitions List Item 7(c) (CAS Registry No. <sup>1</sup>)**

Schedule 1B	(1) Alkyl (Methyl, Ethyl, n-Propyl or Isopropyl) Phosphonyl Difluorides, such as : DF : Methyl Phosphonyldifluoride (CAS 676-99-3);
Schedule 1B	(2) O-Alkyl (H or equal to or less than C <sub>10</sub> , 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 O-2-di-isopropylaminoethyl methylphosphonite (CAS 57856-11-8);
Schedule 1B	(3) Chlorsoarin : O-Isopropyl methylphosphonochloridate (CAS 1445-76-7);
Schedule 1B	(4) Chlorosoman : O-Pinacolyl methylphosphonochloridate (CAS 7040-57-5).

**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.

**Remarks:** 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. 60G) for up-to-date information in relation to scope of products subject to licensing requirements.