List of Export Controlled Chemicals, Chemical Agent Precursors, Propellants, Explosives and Energetic Materials

ECCN 1C350 Chemicals that may be used as precursors for toxic chemical agents.

b. Australia Group-controlled precursor chemicals also identified as Schedule 2 chemicals under the CWC, as follows, and mixtures in which at least one of the following chemicals constitutes 30 percent or more of the weight of the mixture:

b.1. (C.A.S. #7784-34-1) Arsenic trichloride;

b.2. (C.A.S. #76-93-7) Benzilic acid;

b.3. (C.A.S. #78-38-6) Diethyl ethylphosphonate;

b.4. (C.A.S. #15715-41-0) Diethyl methylphosphonite;

b.5. (C.A.S.#2404-03-7) Diethyl-N,N-dimethylphosphoroamidate;

b.6. (C.A.S. #5842-07-9) N,N-Diisopropyl-beta-aminoethane thiol;

b.7. (C.A.S. #4261-68-1) N,N-Diisopropyl-beta-aminoethyl chloride hydrochloride;

b.8. (C.A.S. #96-80-0) N,N-Diisopropyl-beta-aminoethanol;

b.9. (C.A.S. #96-79-7), N,N-Diisopropyl-beta-aminoethyl chloride;

b.10. (C.A.S. #6163-75-3) Dimethyl ethylphosphonate;

b.11. (C.A.S. #756-79-6) Dimethyl methylphosphonate;

b.12. (C.A.S. #1498-40-4) Ethyl phosphonous dichloride [Ethyl phosphinyl dichloride;

b.13. (C.A.S. #430-78-4) Ethyl phosphonus difluoride [Ethyl phosphinyl difluoride];

b.14. (C.A.S. #1066-50-8) Ethyl phosphonyl dichloride;

b.15. [RESERVED]

b.16. [RESERVED]

b.17. [RESERVED]

b.18. (C.A.S. #464-07-3) Pinacolyl alcohol;

b.19. (C.A.S. #1619-34-7) 3-Quinuclidinol;

b.20. (C.A.S. #111-48-8) Thiodiglycol;

b.21. (C.A.S. #993-13-5) Methylphosphonic acid;

b.22. (C.A.S. #683-08-9) Diethyl methylphosphonate;

b.23. (C.A.S. #677-43-0) N,N-dimethylamino-phosphoryl dichloride;

b.24. (C.A.S. #676-98-2) Methylphosphonothioic dichloride.

c. Australia Group-controlled precursor chemicals also identified as Schedule 3 chemicals under the CWC, as follows, and mixtures in which at least one of the following chemicals constitutes 30 percent or more of the weight of the mixture:

c.1. (C.A.S. #762-04-9) Diethyl phosphite;

c.2. (C.A.S. #868-85-9) Dimethyl phosphate (dimethyl hydrogen phosphite);

c.3. (C.A.S. #10025-87-3) Phosphorus oxychloride;

c.4. (C.A.S. #10026-13-8) Phosphorus pentachloride;

c.5. (C.A.S. #7719-12-2) Phosphorus trichloride;

c.6. (C.A.S. #10025-67-9) Sulfur monochloride;

c.7. (C.A.S. #10545-99-0) Sulfur dichloride;

c.8. (C.A.S. #7719-09-7) Thionyl chloride;

c.9. (C.A.S. #102-71-6) Triethanolamine;

c.10. (C.A.S. #122-52-1) Triethyl phosphite;

c.11. (C.A.S. #121-45-9) Trimethyl phosphite

c.12. (C.A.S. #139-87-7) Ethyldiethanolamine.

d. Other Australia Group-controlled precursor chemicals not also identified as Schedule 1, 2, or 3 chemicals under the CWC, as follows, and mixtures in which at least one of the following chemicals constitutes 30 percent or more of the weight of the mixture:

d.1. (C.A.S. #1341-49-7) Ammonium hydrogen fluoride;

d.2. (C.A.S. #107-07-3) 2-Chloroethanol;

d.3. (C.A.S. #100-37-8) N,N-Diethylaminoethanol;

d.4. (C.A.S. #108-18-9) Di-isopropylamine;

d.5. (C.A.S. #124-40-3) Dimethylamine;

d.6. (C.A.S. #506-59-2) Dimethylamine hydrochloride;

d.7. (C.A.S. #7664-39-3) Hydrogen fluoride;

d.8. (C.A.S. #3554-74-3) 3-Hydroxyl-1-methylpiperidine;

d.9. (C.A.S. #76-89-1) Methyl benzilate;

d.10. (C.A.S. #1314-80-3) Phosphorus pentasulfide;

d.11. (C.A.S. #75-97-8) Pinacolone;

d.12. (C.A.S. #151-50-8) Potassium cyanide;

d.13. (C.A.S. #7789-23-3) Potassium fluoride;

d.14. (C.A.S. #7789-29-9) Potassium bifluoride;

d.15. (C.A.S. #3731-38-2) 3-Quinuclidone;

d.16. (C.A.S. #1333-83-1) Sodium bifluoride;

d.17. (C.A.S. #143-33-9) Sodium cyanide;

d.18. (C.A.S. #7681-49-4) Sodium fluoride;

d.19. (C.A.S. #1313-82-2) Sodium sulfide;

d.20. (C.A.S. #637-39-8) Triethanolamine hydrochloride;

d.21. (C.A.S. #116-17-6) Tri-isopropyl phosphite;

d.22. (C.A.S. #2465-65-8) O,O-diethyl phosphorothioate;

d.23. (C.A.S. #298-06-6) O,O-diethyl phosphorodithioate;

d.24. (C.A.S. #16893-85-9) Sodium hexafluorosilicate.

ECCN 1C355 Chemical Weapons Convention (CWC) Schedule 2 and 3 chemicals and families of chemicals not controlled by ECCN 1C350 or by the Department of State under the ITAR.

a. CWC Schedule 2 chemicals and mixtures containing Schedule 2 chemicals:

a.1. Toxic chemicals, as follows, and mixtures containing toxic chemicals:

a.1.a. PFIB: 1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene (C.A.S. 382-21-8) and mixtures in which PFIB constitutes more than 1 percent of the weight of the mixture;

a.1.b. [RESERVED]

a.2. Precursor chemicals, as follows, and mixtures in which at least one of the following precursor chemicals constitutes more than 10 percent of the weight of the mixture:

a.2.a. 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.

Note: 1C355.a.2.a does not control Fonofos: O-Ethyl S-phenyl ethylphosphonothiolothionate (C.A.S. 944-22-9).

a.2.b. FAMILY: N,N-Dialkyl (Me, Et, n-Pr or i-Pr) phosphoramidic dihalides;

a.2.c. FAMILY: Dialkyl (Me, Et, n-Pr or i-Pr) N,N-dialkyl (Me, Et, n-Pr, or i-Pr)-phosphoramidates;

a.2.d. FAMILY: N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethyl-2-chlorides and corresponding protonated salts;

a.2.e. FAMILY: N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-ols and corresponding protonated salts;

Note: 1C355.a.2.e. does not control N,N-Dimethylaminoethanol and corresponding protonated salts (C.A.S. 108-01-0) or N,N-Diethylaminoethanol and corresponding protonated salts (C.A.S. 100-37-8).

a.2.f. FAMILY: N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-thiols and corresponding protonated salts.

b. CWC Schedule 3 chemicals and mixtures containing Schedule 3 chemicals:

b.1. Toxic chemicals, as follows, and mixtures in which at least one of the following toxic chemicals constitutes 30 percent or more of the weight of the mixture:

b.1.a. Phosgene: Carbonyl dichloride (C.A.S. 75-44-5);

b.1.b. Cyanogen chloride (C.A.S. 506-77-4);

b.1.c. Hydrogen cyanide (C.A.S. 74-90-8);

b.1.d. Chloropicrin: Trichloronitromethane (CAS 76-06-2).

b.2. Precursor chemicals, as follows, and mixtures in which at least one of the following precursor chemicals constitutes 30 percent or more of the weight of the mixture:

b.2.a. [RESERVED];

b.2.b. Methyldiethanolamine (C.A.S. 105-59-9).

Category V—Explosives and Energetic Materials, Propellants, Incendiary Agents and Their Constituents

*(a) Explosives, and mixtures thereof:

(1) ADNBF (aminodinitrobenzofuroxan or 7-Amino 4,6-dinitrobenzofurazane-1-oxide) (CAS 97096–78–1);

(2) BNCP (cis-bis (5-nitrotetrazolato) tetra amine-cobalt (III) perchlorate) (CAS 117412–28–9);

(3) CL–14 (diamino dinitrobenzofuroxan or 5,7-diamino-4,6-dinitrobenzofurazane-1-oxide) (CAS 117907–74–1);

(4) CL–20 (HNIW or Hexanitrohexaazaisowurtzitane); (CAS 135285–90-4); chlathrates of CL–20 (see paragraphs (g)(3) and (4) of this category);

(5) CP (2-(5-cyanotetrazolato) penta aminecobalt (III) perchlorate); (CAS 70247–32–4);

(6) DADE (1,1-diamino-2,2-dinitroethylene, FOX7);

(7) DDFP (1,4-dinitrodifurazanopiperazine);

(8) DDPO (2,6-diamino-3,5-dinitropyrazine-1-oxide, PZO); (CAS 194486–77–6);

(9) DIPAM (3,3′-Diamino-2,2′,4,4′,6,6′-hexanitrobiphenyl or dipicramide) (CAS 17215–44–0);

(10) DNGU (DINGU or dinitroglycoluril) (CAS 55510–04–8);

(11) Furazans, as follows:

(i) DAAOF (diaminoazoxyfurazan);

(ii) DAAzF (diaminoazofurazan) (CAS 78644–90–3);

(12) HMX and derivatives (see paragraph (g)(5) of this category):

(i) HMX (Cyclotetramethylenetetranitramine; octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazine; 1,3,5,7-tetranitro-1,3,5,7-tetraza-cyclooctane; octogen, octogene) (CAS 2691–41–0);

(ii) Diflouroaminated analogs of HMX;

(iii) K–55 (2,4,6,8-tetranitro-2,4,6,8-tetraazabicyclo [3,3,0]-octanone-3, tetranitrosemiglycouril, or keto-bicyclic HMX) (CAS 130256-72–3);

(13) HNAD (hexanitroadamantane) (CAS 143850–71–9);

(14) HNS (hexanitrostilbene) (CAS 20062–22–0);

(15) Imidazoles, as follows:

(i) BNNII (Octohydro-2,5-bis(nitroimino) imidazo [4,5-d]Imidazole);

(ii) DNI (2,4-dinitroimidazole) (CAS 5213–49–0);

(iii) FDIA (1-fluoro-2,4-dinitroimidazole);

(iv) NTDNIA (N-(2-nitrotriazolo)-2,4-dinitro-imidazole);

(v) PTIA (1-picryl-2,4,5-trinitroimidazole);

(16) NTNMH (1-(2-nitrotriazolo)-2-dinitromethylene hydrazine);

(17) NTO (ONTA or 3-nitro-1,2,4-triazol-5-one) (CAS 932–64–9);

(18) Polynitrocubanes with more than four nitro groups;

(19) PYX (2,6-Bis(picrylamino)-3,5-dinitropyridine) (CAS 38082–89–2);

(20) RDX and derivatives:

(i) RDX (cyclotrimethylenetrinitramine), cyclonite, T4, hexahydro-1,3,5-trinitro-1,3,5-triazine, 1,3,5-trinitro-1,3,5-triaza-cyclohexane, hexogen, or hexogene) (CAS 121–82–4);

(ii) Keto-RDX (K–6 or 2,4,6-trinitro-2,4,6-triazacyclohexanone (CAS 115029–35–1);

(21) TAGN (Triaminoguanidinenitrate) (CAS 4000–16–2);

(22) TATB (Triaminotrinitrobenzene) (CAS 3058–38–6) (see paragraph (g)(7) of this category);

(23) TEDDZ (3,3,7,7-tetrabis(difluoroamine) octahydro-1,5-dinitro-1,5-diazocine;

(24) Tetrazoles, as follows:

(i) NTAT (nitrotriazol aminotetrazole);

(ii) NTNT (1-N-(2-nitrotriazolo)-4-nitrotetrazole);

(25) Tetryl (trinitrophenylmethylnitramine) (CAS 479–45–8);

(26) TNAD (1,4,5,8-tetranitro-1,4,5,8-tetraazadecalin) (CAS 135877-16–6)(see paragraph (g)(6) of this category);

(27) TNAZ (1,1,3-trinitroazetidine) (CAS 97645–24–4) (see paragraph (g)(2) of this category);

(28) TNGU (SORGUYL or tetranitroglycoluril) (CAS 55510–03–7);

(29) TNP (1,4,5,8-tetranitro-pyridazino [4,5-d] pyridazine) (CAS 229176–04–9);

(30) Triazines, as follows:

(i) DNAM (2-oxy-4,6-dinitroamino-s-triazine) (CAS 19899–80–0);

(ii) NNHT (2-nitroimino-5-nitro-hexahydro-1,3,5 triazine) (CAS 130400–13–4);

(31) Triazoles, as follows:

(i) 5-azido-2-nitrotriazole;

(ii) ADHTDN (4-amino-3,5-dihydrazino-1,2,4-triazole dinitramide)(CAS 1614–08–0);

(iii) ADNT (1-amino-3,5-dinitro-1,2,4-triazole);

(iv) BDNTA ([Bis-dinitrotriazole]amine);

(v) DBT (3,3′-dinitro-5,5-bi-1,2,4-triazole) (CAS 30003–46–4);

(vi) DNBT (dinitrobistriazole) (CAS 70890–46–9);

(vii) NTDNA (2-nitrotriazole 5-dinitramide) (CAS 75393–84–9);

(viii) NTDNT (1-N-(2-nitrotriazolo) 3,5-dinitro-triazole);

(ix) PDNT (1-picryl-3,5-dinitrotriazole);

(x) TACOT (tetranitrobenzotriazolobenzotriazole) (CAS 25243–36–1);

(32) Any explosive not listed elsewhere in paragraph (a) of this category with a detonation velocity exceeding 8,700m/s at maximum density or a detonation pressure exceeding 34 Gpa (340 kbar).

(33) Other organic explosives not listed elsewhere in paragraph (a) of this category yielding detonation pressures of 25 Gpa (250 kbar) or more that will remain stable at temperatures of 523K (250°C) or higher for periods of 5 minutes or longer;

(34) Diaminotrinitrobenzene (DATB) (CAS 1630–08–6);

(35) Any other explosive not elsewhere identified in this category specifically designed, modified, adapted, or configured (e.g., formulated) for military application.

*(b) Propellants:

(1) Any United Nations (UN) Class 1.1 solid propellant with a theoretical specific impulse (under standard conditions) of more than 250 seconds for non-metallized, or 270 seconds for metallized compositions;

(2) Any UN Class 1.3 solid propellant with a theoretical specific impulse (under standard conditions) of more than 230 seconds for non-halogenized, or 250 seconds for non-metallized compositions;

(3) Propellants having a force constant of more than 1,200 kJ/Kg;

(4) Propellants that can sustain a steady-state burning rate more than 38mm/s under standard conditions (as measured in the form of an inhibited single strand) of 6.89 Mpa (68.9 bar) pressure and 294K (21 °C);

(5) Elastomer modified cast double based propellants with extensibility at maximum stress greater than 5% at 233 K (−40 C);

(6) Any propellant containing substances listed in Category V;

(7) Any other propellant not elsewhere identified in this category specifically designed, modified, adapted, or configured (e.g., formulated) for military application.

(c) Pyrotechnics, fuels and related substances, and mixtures thereof:

(1) Alane (aluminum hydride)(CAS 7784–21–6);

(2) Carboranes; decaborane (CAS 17702–41–9); pentaborane and derivatives thereof;

(3) Hydrazine and derivatives:

(i) Hydrazine (CAS 302–01–2) in concentrations of 70% or more (not hydrazine mixtures specially formulated for corrosion control);

(ii) Monomethyl hydrazine (CAS 60–34–4);

(iii) Symmetrical dimethyl hydrazine (CAS 540–73–8);

(iv) Unsymmetrical dimethyl hydrazine (CAS 57–14–7);

(4) Liquid fuels specifically formulated for use by articles covered by Categories IV, VI, and VIII;

(5) Spherical aluminum powder (CAS 7429–90–5) in particle sizes of 60 micrometers or less manufactured from material with an aluminum content of 99% or more;

(6) Metal fuels in particle form whether spherical, atomized, spheroidal, flaked or ground, manufactured from material consisting of 99% or more of any of the following:

(i) Metals and mixtures thereof:

(A) Beryllium (CAS 7440–41–7) in particle sizes of less than 60 micrometers;

(B) Iron powder (CAS 7439–89–6) with particle size of 3 micrometers or less produced by reduction of iron oxide with hydrogen;

(ii) Mixtures, which contain any of the following:

(A) Boron (CAS 7440–42–8) or boron carbide (CAS 12069–32–8) fuels of 85% purity or higher and particle sizes of less than 60 micrometers;

(B) Zirconium (CAS 7440–67–7), magnesium (CAS 7439–95–4) or alloys of these in particle sizes of less than 60 micrometers;

(iii) Explosives and fuels containing the metals or alloys listed in paragraphs (c)(6)(i) and (c)(6)(ii) of this category whether or not the metals or alloys are encapsulated in aluminum, magnesium, zirconium, or beryllium;

(7) Pyrotechnics and pyrophoric materials specifically formulated for military purposes to enhance or control the production of radiated energy in any part of the IR spectrum.

(8) Titanium subhydride (TiHn) of stoichiometry equivalent to n = 0.65–1.68;

(9) Military materials containing thickeners for hydrocarbon fuels specially formulated for use in flame throwers or incendiary munitions; metal stearates or palmates (also known as octol); and M1, M2 and M3 thickeners;

(10) Any other pyrotechnic, fuel and related substance and mixture thereof not elsewhere identified in this category specifically designed, modified, adapted, or configured (e.g., formulated) for military application.

(d) Oxidizers, to include:

(1) ADN (ammonium dinitramide or SR–12) (CAS 140456–78–6);

(2) AP (ammonium perchlorate) (CAS 7790–98–9);

(3) BDNPN (bis,2,2-dinitropropylnitrate) (CAS 28464–24–6);

(4) DNAD (1,3-dinitro-1,3-diazetidine) (CAS 78246–06–7);

(5) HAN (Hydroxylammonium nitrate) (CAS 13465–08–2);

(6) HAP (hydroxylammonium perchlorate) (CAS 15588–62–2);

(7) HNF (Hydrazinium nitroformate) (CAS 20773–28–8);

(8) Hydrazine nitrate (CAS 37836–27–4);

(9) Hydrazine perchlorate (CAS 27978–54–7);

(10) Liquid oxidizers comprised of or containing inhibited red fuming nitric acid (IRFNA) (CAS 8007–58–7) or oxygen diflouride;

(11) Perchlorates, chlorates, and chromates composited with powdered metal or other high energy fuel components controlled by this category;

(12) Any other oxidizer not elsewhere identified in this category specifically designed, modified, adapted, or configured (e.g., formulated) for military application.

*(e) Binders, and mixtures thereof:

(1) AMMO (azidomethylmethyloxetane and its polymers) (CAS 90683–29–7) (see paragraph (g)(1) of this category);

(2) BAMO (bisazidomethyloxetane and its polymers) (CAS 17607–20–4) (see paragraph (g)(1)of this category);

(3) BTTN (butanetrioltrinitrate) (CAS 6659–60–5) (see paragraph (g)(8) of this category);

(4) FAMAO (3-difluoroaminomethyl-3-azidomethyl oxetane) and its polymers;

(5) FEFO (bis-(2-fluoro-2,2-dinitroethyl)formal) (CAS 17003–79–1);

(6) GAP (glycidylazide polymer) (CAS 143178–24–9) and its derivatives;

(7) HTPB (hydroxyl terminated polybutadiene) with a hydroxyl functionality equal to or greater than 2.2 and less than or equal to 2.4, a hydroxyl value of less than 0.77 meq/g, and a viscosity at 30 °C of less than 47 poise (CAS 69102–90–5);

(8) NENAS (nitratoethylnitramine compounds) (CAS 17096–47–8, 85068-73–1 and 82486–82–6);

(9) Poly-NIMMO (poly nitratomethylmethyoxetane, poly-NMMO, (poly[3-nitratomethyl-3-methyl oxetane]) (CAS 84051–81–0);

(10) Energetic monomers, plasticizers and polymers containing nitro, azido nitrate, nitraza or difluoromaino groups specially formulated for military use;

(11) TVOPA 1,2,3-Tris [1,2-bis(difluoroamino) ethoxy]propane; tris vinoxy propane adduct; (CAS 53159–39–0);

(12) Polynitrorthocarbonates;

(13) FPF–1 (poly-2,2,3,3,4,4-hexafluoro pentane-1,5-diolformal) (CAS 376–90–9);

(14) FPF–3 (poly-2,4,4,5,5,6,6-heptafluoro-2-trifluoromethyl-3-oxaheptane-1,7-diolformal);

(15) PGN (Polyglycidylnitrate or poly(nitratomethyl oxirane); poly-GLYN); (CAS 27814–48–8);

(16) N-methyl-p-nitroaniline;

(17) Low (less than 10,000) molecular weight, alcohol-functionalized, poly(epichlorohydrin); poly(epichlorohydrindiol); and triol;

(18) Bis(2,2-dinitropropyl) formal and acetal;

(19) Any other binder and mixture thereof not elsewhere identified in this category specifically designed, modified, adapted, or configured (e.g., formulated) for military application.

(f) Additives:

(1) Basic copper salicylate (CAS 62320–94–9);

(2) BHEGA (Bis-(2-hydroxyethyl)glycolamide) (CAS 17409–41–5);

(3) Ferrocene Derivatives:

(i) Butacene (CAS 125856–62–4);

(ii) Catocene (2,2-Bis-ethylferrocenyl propane) (CAS 37206–42–1);

(iii) Ferrocene carboxylic acids;

(iv) n-butyl-ferrocene (CAS 31904–29–7);

(4) Lead beta-resorcylate (CAS 20936–32–7);

(5) Lead citrate (CAS 14450–60–3);

(6) Lead-copper chelates of beta-resorcylate or salicylates (CAS 68411–07–4);

(7) Lead maleate (CAS 19136–34–6);

(8) Lead salicylate (CAS 15748–73–9);

(9) Lead stannate (CAS 12036–31–6);

(10) MAPO (tris-1-(2-methyl)aziridinyl phosphine oxide) (CAS 57–39–6); BOBBA–8 (bis(2-methyl aziridinyl) 2-(2-hydroxypropanoxy) propylamino phosphine oxide); and other MAPO derivatives;

(11) Methyl BAPO (Bis(2-methyl aziridinyl) methylamino phosphine oxide) (CAS 85068–72–0);

(12) 3-Nitraza-1,5 pentane diisocyanate (CAS 7406–61–9);

(13) Organo-metallic coupling agents, specifically:

(i) Neopentyl[diallyl]oxy, tri [dioctyl] phosphatotitanate (CAS 103850–22–2); also known as titanium IV, 2,2[bis 2-propenolato-methyl, butanolato, tris (dioctyl) phosphato] (CAS 110438–25–0), or LICA 12 (CAS 103850–22–2);

(ii) Titanium IV, [(2-propenolato-1) methyl, n-propanolatomethyl] butanolato-1, tris(dioctyl)pyrophosphate, or KR3538;

(iii) Titanium IV, [2-propenolato-1)methyl, propanolatomethyl] butanolato-1, tris(dioctyl) phosphate;

(14) Polyfunctional aziridine amides with isophthalic, trimesic (BITA or butylene imine trimesamide), isocyanuric, or trimethyladipic backbone structures and 2-methyl or 2-ethyl substitutions on the aziridine ring and its polymers;

(15) Superfine iron oxide (Fe_2O_3hematite) with a specific surface area more than 250 m^2 /g and an average particle size of 0.003 [micro]m or less (CAS 1309–37–1);

(16) TEPAN (tetraethylenepentaamineacrylonitrile) (CAS 68412–45–3); cyanoethylated polyamines and their salts;

(17) TEPANOL (Tetraethylenepentaamineacrylo-nitrileglycidol) (CAS 110445–33–5); cyanoethylated polyamines adducted with glycidol and their salts;

(18) TPB (triphenyl bismuth) (CAS 603–33–8);

(19) PCDE (Polycyanodifluoroaminoethyleneoxide);

(20) BNO (Butadienenitrileoxide);

(21) Any other additive not elsewhere identified in this category specifically designed, modified, adapted, or configured (e.g., formulated) for military application.

(g) Precursors, as follows:

(1) BCMO (bischloromethyloxetane) (CAS 142173–26–0) (see paragraphs (e)(1) and (2) of this category);

(2) Dinitroazetidine-t-butyl salt (CAS 125735–38–8) (see paragraph (a)(27) of this category);

(3) HBIW (hexabenzylhexaazaisowurtzitane) (CAS 124782–15–6) (see paragraph (a)(4) of this category);

(4) TAIW (tetraacetyldibenzylhexa-azaisowurtzitane) (see paragraph (a)(4) of this category);

(5) TAT (1, 3, 5, 7-tetraacetyl-1, 3, 5, 7-tetraaza-cyclooctane) (CAS 41378–98–7) (see paragraph (a)(12) of this category);

(6) Tetraazadecalin (CAS 5409–42–7) (see paragraph (a)(26) of this category);

(7) 1,3,5-trichorobenzene (CAS 108–70–3) (see paragraph (a)(22) of this category);

(8) 1,2,4-trihydroxybutane (1,2,4-butanetriol) (CAS 3068–00–6) (see paragraph (e)(3) of this category);

(i) The following interpretations explain and amplify the terms used in this category and elsewhere in this subchapter.

(1) Category V contains explosives, energetic materials, propellants and pyrotechnics and specially formulated fuels for aircraft, missile and naval applications. Explosives are solid, liquid or gaseous substances or mixtures of substances, which, in their primary, booster or main charges in warheads, demolition or other military applications, are required to detonate.

(2) Paragraph (c)(6)(ii)(A) of this category does not control boron and boron carbide enriched with boron-10 (20% or more of total boron-10 content.

(3) The resulting product of the combination of any controlled or non-controlled substance compounded or mixed with any item controlled by this subchapter is also subject to the controls of this category.

Note 1: To assist the exporter, an item has been categorized by the most common use. Also, a reference has been provided to the related controlled precursors (e.g., see paragraph (a)(12) of this category). Regardless of where the item has been placed in the category, all exports are subject to the controls of this subchapter.

Note 2: Chemical Abstract Service (CAS) registry numbers do not cover all the substances and mixtures controlled by this category. The numbers are provided as examples to assist the government agencies in the license review process and the exporter when completing their