

# Export Controlled Chemicals, including mixtures and compounds

\*\*ALL High Explosives and their Precursors Are Export Controlled\*\*

- 1,1-Diethylhydrazine nitrate (DEHN)/ 1,2-Diethylhydrazine nitrate (DEHN) (CAS 363453-17-2)
- 1,1-Dimethylhydrazinium azide (CAS 227955-52-4)/
- 1,2-Dimethylhydrazinium azide (CAS 299177-50-7)
- 2 Nitrodiphenylamine (2-NDPA)
- 2-Chloroethanol (CAS 107-07-3)
- 2-hydroxyethylhydrazine nitrate (HEHN)
- 3-Hydroxyl-1-methylpiperidine (CAS 3554-74-3)
- 3-Quinuclidinol (CAS 1619-34-7)
- 3-Quinuclidone (CAS 3731-38-2)
- 3,6-dihydrazino tetrazine nitrate (DHTN), also referred to as 1,4-dihydrazine nitrate.
- Allylhydrazine (CAS 7422-78-8)
- Ammonium hydrogen fluoride (CAS 1341-49-7)
- Ammonium nitrate (including fertilizers) containing more than 15% by weight ammonium nitrate
- Arsenic trichloride (CAS 7784-34-1)
- Benzilic acid (CAS 76-93-7)
- Carboxy-terminated polybutadiene (including carboxyl-terminated polybutadiene) (CTPB)
- Chemicals containing a phosphorus atom to which is bonded one methyl, ethyl, or propyl (normal or iso) group but not further carbon atoms.
- Chlorine trifluoride (ClF<sub>3</sub>)
- Chloropicrin: Trichloronitromethane (CAS 76-06-2)
- Cyanogen chloride (CAS 506-77-4)
- Di-isopropylamine (CAS 108-18-9)
- Diethyl ethylphosphonate (CAS 78-38-6)
- Diethyl methylphosphonate (CAS 683-08-9)
- Diethyl methylphosphonite (CAS 15715-41-0)
- Diethyl phosphite (CAS 762-04-9)
- Diethyl-N,N-dimethylphosphoroamidate (CAS 2404-03-7)
- Diethylamine (CAS 109-89-7)
- Diethylene glycol dinitrate (DEGDN).
- Diimido oxalic acid dihydrazine (CAS 3457-37-2)
- Dimethyl ethylphosphonate (CAS 6163-75-3)
- Dimethyl methylphosphonate (CAS 756-79-6)
- Dimethyl phosphite (dimethyl hydrogen phosphite) (CAS 868-85-9)
- Dimethylamine (CAS 124-40-3)

- Dimethylamine hydrochloride (CAS 506-59-2)
- Dinitrogen pentoxide (CAS 10102-03-1)
- Dinitrogen trioxide (CAS 10544-73-7)
- Ethyl phosphonous dichloride [Ethyl phosphinyl dichloride] (CAS 1498-40-4)
- Ethyl phosphonus difluoride [Ethyl phosphinyl difluoride] (CAS 430-78-4)
- Ethyl phosphoryl dichloride (CAS 1066-50-8)
- Ethyldiethanolamine. (CAS 139-87-7)
- Ethylene dihydrazine (CAS 6068-98-0)
- FAMILY: Dialkyl (Me, Et, n-Pr or i-Pr) N,N-dialkyl (Me, Et, n-Pr, or i-Pr)-phosphoramidates
- FAMILY: N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-ols and corresponding protonated salts
- FAMILY: N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-thiols and corresponding protonated salts.
- FAMILY: N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethyl-2-chlorides and corresponding protonated salts
- FAMILY: N,N-Dialkyl (Me, Et, n-Pr or i-Pr) phosphoramidic dihalides
- Fluorine
- Guanidine nitrate (CAS 506-93-4)
- Helium-3 (3HE), including mixtures, products or devices containing 3He
- Hydrazine (CAS 302-01-2) in concentrations of 70% or more
- Hydrazinium azide (CAS 14546-44-2)
- Hydrazinium dinitrate (CAS 13464-98-7)
- Hydrazinium diperchlorate (CAS 13812-39-0)
- Hydrogen cyanide (CAS 74-90-8)
- Hydrogen fluoride (CAS 7664-39-3)
- Hydroxy-terminated polybutadiene (including hydroxyl-terminated polybutadiene) (HTPB)
- Methyl benzilate (CAS 76-89-1)
- Methyldiethanolamine (CAS 105-59-9)
- Methylhydrazine nitrate (MHN) (CAS 29674-96-2)
- Methylphosphonic acid (CAS 993-13-5)
- Methylphosphonothioic dichloride. (CAS 676-98-2)
- Mixed oxides of nitrogen (MON) {solutions of nitric oxide (NO) in dinitrogen tetroxide/nitrogen dioxide}
- Monomethyl hydrazine (MMH) (CAS 60-34-4)
- Monomethylhydrazine dinitrate
- N,N diallylhydrazine (CAS 5164-11-4)
- N,N-Diethylaminoethanol (CAS 100-37-8)
- N,N-Diisopropyl-beta-aminoethane thiol (CAS 5842-07-9)
- N,N-Diisopropyl-beta-aminoethanol (CAS 96-80-0)
- N,N-Diisopropyl-beta-aminoethyl chloride (CAS 96-79-7)
- N,N-Diisopropyl-beta-aminoethyl chloride hydrochloride (CAS 4261-68-1)
- N,N-dimethylamino-phosphoryl dichloride (CAS 677-43-0)
- Nitric acid in concentrations of 20 weight percent or greater

- Nitrocellulose with nitrogen content greater than 12.6%
- Nitrogen dioxide (CAS 10102-44-0) / Dinitrogen tetroxide (CAS 10544-72-6)
- Nitrogen trifluoride (NF3) in a gaseous state
- Nitroguanidine (CAS 556-88-7)
- O,O-diethyl phosphorodithioate (CAS 298-06-6)
- O,O-diethyl phosphorothioate (CAS 2465-65-8)
- PFIB: 1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene (CAS 382-21-8)
- Phosgene: Carbonyl dichloride (CAS 75-44-5)
- Phosphorus oxychloride (CAS 10025-87-3)
- Phosphorus pentachloride (CAS 10026-13-8)
- Phosphorus pentasulfide (CAS 1314-80-3)
- Phosphorus trichloride (CAS 7719-12-2)
- Pinacolone (CAS 75-97-8)
- Pinacolyl alcohol (CAS 464-07-3)
- Polybutadiene acrylic acid (PBAA)
- Polybutadiene acrylic acid acrylonitrile (PBAN) (CAS 25265-19-4/CAS 68891-50-9)
- Polytetrahydrofuran polyethylene glycol (TPEG).
- Potassium bifluoride (CAS 7789-29-9)
- Potassium cyanide (CAS 151-50-8)
- Potassium fluoride (CAS 7789-23-3)
- Radionuclides (as specified), and products or devices containing such
- Sodium bifluoride (CAS 1333-83-1)
- Sodium cyanide (CAS 143-33-9)
- Sodium fluoride (CAS 7681-49-4)
- Sodium hexafluorosilicate (CAS 16893-85-9)
- Sodium sulfide (CAS 1313-82-2)
- Sulfur dichloride (CAS 10545-99-0)
- Sulfur monochloride (CAS 10025-67-9)
- Symmetrical dimethyl hydrazine (SDMH) (CAS 540-73-8)
- Tetramethylhydrazine (CAS 6415-12-9)
- Thiodiglycol (CAS 111-48-8)
- Thionyl chloride (CAS 7719-09-7)
- Tri-isopropyl phosphite (CAS 116-17-6)
- Tributyl phosphate
- Triethanolamine (CAS 102-71-6)
- Triethanolamine hydrochloride (CAS 637-39-8)
- Triethyl phosphite (CAS 122-52-1)
- Triethylene glycol dinitrate (TEGDN)
- Trimethyl phosphite (CAS 121-45-9)
- Trimethylhydrazine (CAS 1741-01-1)
- Trimethylolethane trinitrate (TMETN)
- Tritium, including certain compounds, mixtures, products or devices
- Unsymmetrical dimethyl hydrazine (UDMH) (CAS 57-14-7)
- Unsymmetrical dimethylhydrazine nitrate

**All explosives, propellants, oxidizers, pyrotechnics, fuels, binders, or additives that are designed for military application, including the following:**

- 1,3,5-trichlorobenzene (CAS 108-70-3); or
- 1,2,4-trihydroxybutane (1,2,4-butanetriol) (CAS 3068-00-6).
- 3-Nitroaza-1,5-pentane diisocyanate (CAS 7406-61-9);
- 3-Quinuclidinyl benzilate (BZ) (CAS 6581-06-2) (CWC Schedule 2A);
- 4,5 diazidomethyl-2-methyl-1,2,3-triazole (iso-DAMTR)
- Adamsite (Diphenylamine chloroarsine or DM) (CAS 578-94-9);
- ADN (ammonium dinitramide or SR-12) (CAS 140456-78-6) (MT);
- ADNBF (aminodinitrobenzofuroxan or 7-Amino 4,6-dinitrobenzofurazane-1-oxide) (CAS 97096-78-1);
- Agent Orange (2,4,5-Trichlorophenoxyacetic acid mixed with 2,4-dichlorophenoxyacetic acid);
- Alkyl (Methyl, Ethyl, n-Propyl or Isopropyl) phosphonyl difluorides, such as: DF: Methyl Phosphonyldifluoride (CAS 676-99-3) (CWC Schedule 1B); Methylphosphinyldifluoride;
- Amiton: O,O-Diethyl S- [2(diethylamino)ethyl] phosphorothiolate and corresponding alkylated or protonated salts (CAS 78-53-5) (CWC Schedule 2A);
- AMMO (azidomethylmethyloxetane and its polymers) (CAS 90683-29-7);
- AP (ammonium perchlorate) (CAS 7790-98-9) (MT);
- Alane (aluminum hydride) (CAS 7784-21-6);
- BAMO-3-3 (bis(azidomethyl)oxetane and its polymers) (CAS 17607-20-4);
- Basic copper salicylate (CAS 62320-94-9);
- BCMO (3,3-bis(chloromethyl)oxetane) (CAS 78-71-7);
- BDNPN (bis(2,2-dinitropropyl)nitrate) (CAS 28464-24-6);
- BHEGA (Bis-(2-hydroxyethyl)glycolamide) (CAS 17409-41-5);
- BNCP (cis-bis(5-nitrotetrazolato) tetra amine-cobalt (III) perchlorate) (CAS 117412-28-9);
- BNO (Butadienenitrile oxide);
- Bromo acetone;
- Bromo methylethylketone;
- BTTN (butanetriol trinitrate) (CAS 6659-60-5) (MT);
- CA (Bromobenzyl cyanide) (CAS 5798-79-8);
- Carboranes; decaborane (CAS 17702-41-9); pentaborane and derivatives thereof (MT);
- Certain bonding agents, as follows (MT):
  - o (i) 1,1R,1S-trimesoyl-tris(2-ethylaziridine) (HX-868, BITA) (CAS 7722-73-8); or
  - o (ii) Polyfunctional aziridine amides with isophthalic, trimesic, isocyanuric, or trimethyladipic backbone also having a 2-methyl or 2-ethyl aziridine group, including (1) 1,1Hisophthaloyl-bis(2-methylaziridine) (HX-752) (CAS 7652-64-4); (2) 2,4,6-tris(2-ethyl-1-aziridinyl)-1,3,5-triazine (HX-874) (CAS 18924-91-9); and (3) 1,1'-trimethyladipoylbis(2-ethylaziridine) (HX-877) (CAS 71463-62-2).
- Chlorosarin: O-Isopropyl methylphosphonochloridate (CAS 1445-76-7) (CWC Schedule 1B);
- Chlorosoman: O-Pinakolyl methylphosphonochloridate (CAS 7040-57-5) (CWC Schedule 1B);

- CL-14 (diaminodinitrobenzofuroxan or 5,7-diamino-4,6-dinitrobenzofurazane-1-oxide) (CAS 117907-74-1);
- CL-20 (HNIW or Hexanitrohexaazaisowurtzitane) (CAS 135285-90-4); clathrates of CL-20 (MT for CL-20);
  - o CL-20 precursors (any molecule containing hexaazaisowurtzitane) (e.g., HBIW (hexabenzylhexaazaisowurtzitane), TAIW (tetraacetyldibenzylhexaazaisowurtzitane));
- CN (Phenylacetyl chloride or w-Chloroacetophenone) (CAS 532-27-4);
- CP (2-(5-cyanotetrazolato) penta aminocobalt (III) perchlorate) (CAS 70247-32-4);
- CR (Dibenz-(b,f)-1,4-oxazepine) (CAS 257-07-8);
- CS (o-Chlorobenzylidenemalononitrile or o-Chlorobenzalmalononitrile) (CAS 2698-41-1);
- DADE (1,1-diamino-2,2-dinitroethylene, FOX-7) (CAS 145250-81-3);
- DADN (1,5-diacetyl-3,7-dinitro-1, 3, 5, 7-tetraazacyclooctane);
- DATB (Diaminotrinitrobenzene) (CAS 1630-08-6);
- DC: Methylphosphonyl dichloride (CAS 676-97-1) (CWC Schedule 2B); Methylphosphinyldichloride;
- DDFP (1,4-dinitrodifurazanopiperazine);
- DDPO (2,6-diamino-3,5-dinitropyrazine-1-oxide, PZO) (CAS 194486-77-6);
- Dibromodimethyl ether (CAS 4497-29-4);
- Dichlorodimethyl ether (ClCi) (CAS 542-88-1);
- Dinitroazetidone-t-butyl salt (CAS 125735-38-8);
- Dinitropropyl based plasticizers, as follows (MT):
  - o (i) BDNPA (bis (2,2-dinitropropyl) acetal) (CAS 5108-69-0);
  - o (ii) BDNPF (bis (2,2-dinitropropyl) formal) (CAS 5917-61-3).
- DIPAM (3,3'-Diamino-2,2',4,4',6,6'-hexanitrobiphenyl or dipicramide) (CAS 17215-44-0);
- Diphenylchloroarsine (DA) (CAS 712-48-1);
- Diphenylcyanoarsine (DC);
- DNAD (1,3-dinitro-1,3-diazetidone) (CAS 78246-06-7);
- DNAN (2,4-Dinitroanisole) (CAS 119-27-7);
- DNGU (DINGU or dinitroglucuril) (CAS 55510-04-8);
- Energetic ionic materials melting between 343 K (70 °C) and 373 K (100 °C) and with detonation velocity exceeding 6800 m/s or detonation pressure exceeding 18 GPa (180 kbar); or
- Ethyldibromoarsine (CAS 683-43-2);
- Ethyldichloroarsine (ED);
- Ethyl iodoacetate;
- Explosives, not otherwise enumerated in this paragraph or on the CCL in ECCN 1C608, with a detonation velocity exceeding 8700 m/s at maximum density or a detonation pressure exceeding 34 GPa (340 kbar).
- FAMAO (3-difluoroaminomethyl-3-azidomethyloxetane) and its polymers;
- FEFO (bis(2-fluoro-2,2-dinitroethyl)formal) (CAS 17003-79-1);
- Ferrocene derivatives, as follows (MT):
  - o (i) Butacene (CAS 125856-62-4);

- (ii) Catocene (2,2-Bis-ethylferrocenylpropane) (CAS 37206-42-1);
- (iii) Ferrocene carboxylic acids and ferrocene carboxylic acid esters;
- (iv) n-butylferrocene (CAS 31904-29-7);
- (v) Ethylferrocene (CAS 1273-89-8);
- (vi) Propylferrocene;
- (vii) Pentylferrocene (CAS 1274-00-6);
- (viii) Dicyclopentylferrocene;
- (ix) Dicyclohexylferrocene;
- (x) Diethylferrocene (CAS 173-97-8);
- (xi) Dipropylferrocene;
- (xii) Dibutylferrocene (CAS 1274-08-4);
- (xiii) Dihexylferrocene (CAS 93894-59-8);
- (xiv) Acetylferrocene (CAS 1271-55-2)/1,1'-diacetyl ferrocene (CAS 1273-94-5); or
- (xv) Other ferrocene derivatives that do not contain a six carbon aromatic functional group attached to the ferrocene molecule (MT if usable as rocket propellant burning rate modifier);
- FPF-1 (poly-2,2,3,3,4,4-hexafluoro pentane-1,5-diolformal) (CAS 376-90-9);
- FPF-3 (poly-2,4,4,5,5,6,6-heptafluoro-2-trifluoromethyl-3-oxaheptane-1,7-diolformal);
- Fuel mixtures or pyrotechnic mixtures, which contain any of the following:
  - 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; or
  - Zirconium (CAS 7440-67-7), magnesium (CAS 7439-95-4), or alloys of these in particle sizes of less than 60 micrometers;
- Fuel, pyrotechnic, or energetic mixtures having any nanosized aluminum, beryllium, boron, zirconium, magnesium, or titanium, and meeting certain criteria
- Furazans, as follows:
  - (i) DAAOF (DAAF, DAAFox, or diaminoazoxyfurazan);
  - (ii) DAAzF (diaminoazofurazan) (CAS 78644-90-3);
  - (iii) ANF (Furazanamine, 4-nitro- or 3-Amino-4-nitrofurazan; 4-Nitro-1,2,5-oxadiazol-3-amine; or 4-Nitro-3-furazanamine; CAS 66328-69-6); or
  - (iv) ANAzF (Aminonitroazofurazan or 1,2,5-Oxadiazol-3-amine, 4-[2-(4-nitro-1,2,5-oxadiazol-3-yl) diazenyl]; or 1,2,5-Oxadiazol-3-amine, 4-[(4-nitro-1,2,5-oxadiazol-3-yl)azo]-(9Cl); or Furazanamine, 4-[(nitrofuranyl)azo]-; or 4-[(4-Nitro-1,2,5-oxadiazol-3-yl)azo]-1,2,5-oxadiazol-3-amine) (CAS 155438-11-2);
- GAP (glycidyl azide polymer) (CAS 143178-24-9) and its derivatives;
- GUDN (Guanylurea dinitramide) FOX-12 (CAS 217464-38-5);
- HAN (Hydroxylammonium nitrate) (CAS 13465-08-2);
- HAP (hydroxylammonium perchlorate) (CAS 15588-62-2);
- HMX and derivatives, as follows:
  - (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) Difluoroaminated analogs of HMX; or

- (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);
- HNAD (hexanitroadamantane) (CAS 143850-71-9);
- HNF (Hydrazinium nitroformate) (CAS 20773-28-8)
- HNS (hexanitrostilbene) (CAS 20062-22-0);
- 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)
- Hydrazine nitrate (CAS 37836-27-4) (MT);
- Hydrazine perchlorate (CAS 27978-54-7) (MT);
- Hydrocarbon fuels specially formulated for use in flame throwers or incendiary munitions containing metal stearates (e.g., octal) or palmitates, and M1, M2, and M3 thickeners.
- Iodo acetone;
- Imidazoles, as follows:
  - (i) BNNII (Octahydro-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); or
  - (v) PTIA (1-picryl-2,4,5-trinitroimidazole);
- Inhibited red fuming nitric acid (IRFNA) (CAS 8007-58-7) and liquid oxidizers comprised of or containing IRFNA or oxygen difluoride (MT for liquid oxidizers comprised of IRFNA);
- Iron oxide, superfine, (Fe<sub>2</sub>O<sub>3</sub>, hematite) with a specific surface area more than 250 m<sup>2</sup>/g and an average particle size of 0.003 micrometers or less (CAS 1309-37-1);
- Lead beta-resorcyate (CAS 20936-32-7);
- Lead citrate (CAS 14450-60-3);
- Lead-copper chelates of beta-resorcyate or salicylates (CAS 68411-07-4);
- Lead maleate (CAS 19136-34-6);
- Lead salicylate (CAS 15748-73-9);
- Lead stannate (CAS 12036-31-6);
- Lewisites, such as: 2-chlorovinyl dichloroarsine (CAS 541-25-3) (CWC Schedule 1A); Tris (2-chlorovinyl) arsine (CAS 40334-70-1) (CWC Schedule 1A); Bis (2-chlorovinyl) chloroarsine (CAS 40334-69-8) (CWC Schedule 1A);
- Liquid high energy density fuels that meet certain criteria
- LNF (Butyl 2-chloro-4-fluorophenoxyacetate)
- Low (less than 10,000) molecular weight, alcoholfunctionalized, poly(epichlorohydrin); poly(epichlorohydrindiol); and triol; or
- MAPO (tris-1-(2-methyl) aziridinylphosphine oxide) (CAS 57-39-6); BOBBA-8 (bis(2-methyl aziridinyl)-2-(2-hydroxypropanoxy) propylamino phosphine oxide); and other MAPO derivatives
- Methyl BAPO (Bis(2-methyl aziridinyl)methylaminophosphine oxide) (CAS 85068-72-0);
- Methyl dichloroarsine (MD);
- Metal fuels, and fuel or pyrotechnic mixtures containing:
  - Beryllium (CAS 7440-41-7) in particle sizes of less than 60 micrometers (MT); or

- (B) Iron powder (CAS 7439-89-6) with particle size of 3 micrometers or less produced by reduction of iron oxide with hydrogen;
- N-methyl-p-nitroaniline (MT);
- NENAS (nitrateethylnitramine compounds), as follows:
  - (i) N-Methyl 2-nitrateethylnitramine (Methyl-NENA) (CAS 17096-47-8) (MT);
  - (ii) N-Ethyl 2-nitrateethylnitramine (Ethyl-NENA) (CAS 85068-73-1) (MT);
  - (iii) N-Propyl 2-nitrateethylnitramine (CAS 82486-83-7);
  - (iv) N-Butyl-2-nitrateethylnitramine (BuNENA) (CAS 82486-82-6); or
  - (v) N-Pentyl 2-nitrateethylnitramine (CAS 85954-06-9);
- Nitrogen mustards, such as: HN1: bis (2-chloroethyl) ethylamine (CAS 538-07-8) (CWC Schedule 1A); HN2: bis (2-chloroethyl) methylamine (CAS 51-75-2) (CWC Schedule 1A); HN3: tris (2-chloroethyl)amine (CAS 555-77-1) (CWC Schedule 1A);
- NTNMH (1-(2-nitrotriazolo)-2-dinitromethylene hydrazine);
- NTO (ONTA or 3-nitro-1,2,4-triazol-5-one) (CAS 932-64-9);
- O-Alkyl (equal to or less than C10, including cycloalkyl) alkyl (Methyl, Ethyl, n-Propyl or Isopropyl)phosphonofluoridates, such as: Sarin (GB): O-Isopropyl methylphosphonofluoridate (CAS 107-44-8) (CWC Schedule 1A); and Soman (GD): Pinacolyl methylphosphonofluoridate (CAS 96-64-0) (CWC Schedule 1A);
- O-Alkyl (equal to or less than C10, including cycloalkyl) N,N-dialkyl (Methyl, Ethyl, n-Propyl or Isopropyl) phosphoramidocyanidates, such as: Tabun (GA): O-Ethyl N, Ndimethylphosphoramidocyanidate (CAS 77- 81-6) (CWC Schedule 1A);
- O-Alkyl (H or equal to or less than C10, 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) (CWC Schedule 1A);
- O-Alkyl (H or equal to or less than C10, 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 (CAS 57856-11-8) (CWC Schedule 1B);
- Organo-metallic coupling agents, as follows:
  - (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, npropanolatomethyl] butanolato-1, tris(dioctyl)pyrophosphate, or KR3538; or
  - (iii) Titanium IV, [(2-propenolato-1)methyl, propanolatomethyl] butanolato-1, tris(dioctyl) phosphate;
- PCDE (Polycyanodifluoroaminoethylene oxide);
- Perchlorates, chlorates, and chromates composited with powdered metal or other high energy fuel components controlled under this category (MT).
- PGN (Polyglycidyl nitrate or poly(nitratomethyloxirane); poly-GLYN); (CAS 27814-48-8);
- Phenylcarbylamine chloride;



- Poly-NIMMO (poly nitratomethylmethyloxetane, poly-NMMO, (poly[3-nitratomethyl-3-methyl oxetane]) (CAS 84051-81-0);
- Polynitrocubanes with more than four nitro groups;
- Polynitrothocarbonates;
- PNO (Poly(3-nitratooxetane));
- Propellants (various), that meet certain criteria
- PYX (2,6-Bis(picrylamino)-3,5-dinitropyridine) (CAS 38082-89-2);
- Pyrotechnic and pyrophoric materials, meeting certain criteria
- RDX and derivatives, as follows:
  - o (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)
  - o (ii) Keto-RDX (K-6 or 2,4,6-trinitro-2,4,6-triazacyclohexanone) (CAS 115029-35-1);
  - o (iii) Difluoramined derivative of RDX; 1,3-Dinitro-5,5-bis(difluoramino)1,3-diazahexane (CAS No. 193021-34-0);
- Sulfur mustards, such as: 2-Chloroethylchloromethylsulfide (CAS 2625-76-5) (CWC Schedule 1A); Bis(2-chloroethyl)sulfide (CAS 505-60-2) (CWC Schedule 1A); Bis(2-chloroethylthio)methane (CAS 63839-13-6) (CWC Schedule 1A); 1,2-bis (2-chloroethylthio)ethane (CAS 3563-36-8) (CWC Schedule 1A); 1,3-bis (2-chloroethylthio)-n-propane (CAS 63905-10-2) (CWC Schedule 1A); 1,4-bis (2-chloroethylthio)-n-butane (CWC Schedule 1A); 1,5-bis (2-chloroethylthio)-n-pentane (CWC Schedule 1A); Bis (2-chloroethylthiomethyl)ether (CWC Schedule 1A); Bis (2-chloroethylthioethyl)ether (CAS 63918-89-8) (CWC Schedule 1A);
- TAGN (Triaminoguanidinenitrate) (CAS 4000-16-2);
- TAT (1, 3, 5, 7-tetraacetyl-1, 3, 5, 7-tetraazacyclooctane) (CAS 41378-98-7);
- TATB (Triaminotrinitrobenzene) (CAS 3058-38-6);
- TEDDZ (3,3,7,7-tetrakis(difluoroamine) octahydro-1,5-dinitro-1,5-diazocine;
- Tetraazadecalin (CAS 5409-42-7);
- Tetrazines, as follows:
  - o (i) BTAT (Bis(2,2,2-trinitroethyl)-3,6-diaminotetrazine); or
  - o (ii) LAX-112 (3,6-diamino-1,2,4,5-tetrazine-1,4-dioxide);
- Tetrazoles, as follows:
  - o (i) NTAT (nitrotriazolaminotetrazole); or
  - o (ii) NTNT (1-N-(2-nitrotriazolo)-4-nitrotetrazole);
- Tetryl (trinitrophenylmethylnitramine) (CAS 479-45-8);
- TEPAN (HX-879) (tetraethylenepentaamineacrylonitrile) (CAS 68412-45-3);  
cyanoethylated polyamines and their salts
- TEPANOL (HX-878) (tetraethylenepentaamineacrylonitrileglycidol) (CAS 68412-46-4);  
cyanoethylated polyamines adducted with glycidol and their salts (MT for TEPANOL (HX-878));
- TEX (4,10-Dinitro-2,6,8,12-tetraoxa-4,10-diazaisowurtzitane);
- Titanium subhydride (TiH<sub>n</sub>) of stoichiometry equivalent to n = 0.65-1.68; or
- TNAD (1,4,5,8-tetranitro-1,4,5,8-tetraazadecalin) (CAS 135877-16-6);
- TNAZ (1,3,3-trinitroazetidine) (CAS 97645-24-4);

- TNGU (SORGUYL or tetranitroglycoluril) (CAS 55510-03-7);
- TNP (1,4,5,8-tetranitro-pyridazino [4,5-d] pyridazine) (CAS 229176-04-9);
- TPB (triphenyl bismuth) (CAS 603-33-8) (MT); or
- Triazines, as follows:
  - o (i) DNAM (2-oxy-4,6-dinitroamino-s-triazine) (CAS 19899-80-0); or
  - o (ii) NNHT (2-nitroimino-5-nitro-hexahydro-1,3,5 triazine) (CAS 130400-13-4);
- Triazoles, as follows:
  - o (i) 5-azido-2-nitrotriazole;
  - o (ii) ADHTDN (4-amino-3,5-dihydrazino-1,2,4-triazole dinitramide) (CAS 1614-08-0);
  - o (iii) ADNT (1-amino-3,5-dinitro-1,2,4-triazole);
  - o (iv) BDNTA (Bis(dinitrotriazole)amine);
  - o (v) DBT (3,3'-dinitro-5,5-bi-1,2,4-triazole) (CAS 30003-46-4);
  - o (vi) DNBT (dinitrobistriazole) (CAS 70890-46-9);
  - o (vii) NTDNT (1-N-(2-nitrotriazolo) 3,5-dinitro-triazole);
  - o (viii) PDNT (1-picryl-3,5-dinitrotriazole); or
  - o (ix) TACOT (tetranitrobenzotriazolobenzotriazole) (CAS 25243-36-1);
- Tris (ethoxyphenyl) bismuth (TEPB) (CAS 90591-48-3).
- TVOPA 1,2,3-Tris [1,2-bis(difluoroamino)ethoxy]propane; tris vinoxyl propane adduct (CAS 53159-39-0)