SCHEDULE 1

PART III OF SCHEDULE 1 TO THE EXPORT OF GOODS (CONTROL) ORDER 1994

# PART III

Note: The goods in this Part are for convenience specified by reference to the classification system used by the Department of Trade and Industry for export control purposes. For convenience only, defined terms are printed in "quotation marks".

## MILITARY, SECURITY AND PARA-MILITARY GOODS AND ARMS, AMMUNITION AND RELATED MATERIAL

*Technical Note:*

**ML8** In this entry, references in square brackets to Chemical Abstract Service ("CAS") numbers are included for convenience only. Goods of which the description in this entry includes a CAS reference are specified in this entry whether or not they fall within that reference.

"Military explosives" and fuels, including propellants, and related substances, as follows:

(a) Substances, as follows, and mixtures thereof:

(1) Spherical aluminium powder [CAS 7429-90-5] with a particle size of 60 μm or less, manufactured from material with an aluminium content of 99% or more;

(2) 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:

(a) Metals and mixtures thereof:

(1)
Beryllium [CAS 7440-41-7] in particle sizes of less than 60 μm;

(2)
Iron powder [CAS 7439-89-6] with particle size of 3 μm or less produced by reduction of iron oxide with hydrogen;

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

(1)
Zirconium [CAS 7440-67-7], magnesium [CAS 7439-95-4] and alloys of these in particle sizes of less than 60 μm;

(2)
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 μm;

(3) Perchlorates, chlorates and chromates composited with powdered metal or other high energy fuel components;

(4) Nitroguanidine (NQ) [CAS 556-88-7];

(5) Compounds composed of fluorine and any of the following: other halogens, oxygen, nitrogen;

(6) Carboranes; decaborane [CAS 17702-41-9]; pentaborane and derivatives thereof;

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

(8) Hexanitrostilbene (HNS) [CAS 20062-22-0];

(9) Diaminotrinitrobenzene (DATB) [CAS 1630-08-6];

(10) Triaminotrinitrobenzene (TATB) [CAS 3058-38-6];

(11) Triaminoguanidinenitrate (TAGN) [CAS 4000-16-2];

(12) Titanium subhydride of stoichiometry TiH 0.65-1.68;

(13) Dinitroglycoluril (DNGU, DINGU) [CAS 55510-04-8]; tetranitroglycoluril (TNGU, SORGUYL) [CAS 55510-03-7];

(14) Tetranitrobenzotriazolobenzotriazole (TACOT) [CAS 25243-36-1];

(15) Diaminohexanitrobiphenyl (DIPAM) [CAS 17215-44-0];

(16) Picrylaminodinitropyridine (PYX) [CAS 38082-89-2];

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

(18) Hydrazine [CAS 302-01-2] in concentrations of 70% or more; hydrazine nitrate [CAS 37836-27-4]; hydrazine perchlorate [CAS 27978-54-7]; unsymmetrical dimethyl hydrazine [CAS 57-14-7]; monomethyl [CAS 60-34-4] hydrazine; symmetrical dimethyl hydrazine [CAS 540-73-8];

(19) Ammonium perchlorate [CAS 7790-98-9];

(20) Cyclotrimethylenetrinitramine (RDX) [CAS 121-82-4]; cyclonite; T4; hexahydro-1,3,5-trinitro-1,3,5-triazine; 1,3,5-trinitro-1,3,5-triaza-cyclohexane (hexogen, hexogene);

(21) Hydroxylammonium nitrate (HAN) [CAS 13465-08-2]; hydroxylammonium perchlorate (HAP) [CAS 15588-62-2];

(22) 2-(5-cyanotetrazolato) penta amine-cobalt (III) perchlorate (or CP) [CAS 70247-32-4];

(23) cis-bis (5-nitrotetrazolato) tetra amine-cobalt (III) perchlorate (or BNCP);

(24) 7-Amino-4,6-dinitrobenzofurazane-1-oxide (ADNBF) [CAS 97096-78-1]; amino dinitrobenzofuroxan;

(25) 5,7-diamino-4,6-dinitrobenzofurazane-1-oxide (CAS 117907-74-1), (CL-14 or diamino dinitrobenzofuroxan);

(26) 2,4,6-trinitro-2,4,6-triazacyclohexanone (K-6 or Keto-RDX) [CAS 115029-35-1];

(27) 2,4,6,8-tetranitro-2,4,6,8-tetraazabicyclo [3,3,0]-octanone-3 [CAS 130256-72-3] (tetranitrosemiglycouril, K-55 or keto-bicyclic HMX);

(28) 1,1,3-trinitroazetidine (TNAZ) [CAS 97645-24-4];

(29) 1,4,5,8-tetranitro-1,4,5,8-tetraazadecalin (TNAD) [CAS 135877-16-6];

(30) Hexanitrohexaazaisowurtzitane [CAS 135285-90-4] (CL-20 or HNIW); and chlathrates of CL-20;

(31) Polynitrocubanes with more than four nitro groups;

(32) Ammonium dinitramide (ADN or SR 12) [CAS 140456-78-6];

(33) Trinitrophenylmethylnitramine (tetryl) [CAS 479-45-8];

(b) Explosives and propellants that meet the following performance parameters:

(1) Any explosive with a detonation velocity exceeding 8,700 m/s or a detonation pressure exceeding 34 GPa (340 kbar);

(2) Other organic explosives not listed in ML8. yielding detonation pressures of 25 GPa (250 kbar) or more that will remain stable at temperatures of 523 K (250°C) or higher for periods of 5 minutes or longer;

(3) Any other United Nations (UN) Class 1.1 solid propellant not listed in ML8. with a theoretical specific impulse (under standard conditions) of more than 250 s for non-metallised, or more than 270 s for aluminised compositions;

(4) Any UN Class 1.3 solid propellant with a theoretical specific impulse of more than 230 s for non-halogenised, 250 s for non-metallised and 266 s for metallised compositions;

(5) Any other gun propellants not listed in ML8. having a force constant of more than 1,200 kJ/kg;

(6) Any other explosive, propellant or pyrotechnic not listed in ML8. that can sustain a steady-state burning rate of more than 38 mm/s under standard conditions of 6.89 MPa (68.9 bar) pressure and 294 K (21°C); or

(7) Elastomer modified cast double based propellants (EMCDB) with extensibility at maximum stress of more than 5% at 233 K ( – 40°C);

(c) “Military pyrotechnics”;

(d) Other substances as follows:

(1) Aircraft fuels specially formulated for military purposes;

(2) Military materials containing thickeners for hydrocarbon fuels specially formulated for use in flamethrowers or incendiary munitions, such as metal stearates or palmates (also known as octal) [CAS 637-12-7] and M1, M2, M3 thickeners;

(3) Liquid oxidisers comprised of or containing inhibited red fuming nitric acid (IRFNA) [CAS 8007-58-7] or oxygen difluoride;

(e) “Additives” and “precursors”, as follows:

(1) Azidomethylmethyloxetane (AMMO) and its polymers;

(2) Basic copper salicylate [CAS 62320-94-9]; lead salicylate [CAS 15748-73-9];

(3) Bis (2,2-dinitropropyl) formal [CAS 5917-61-3] or Bis (2,2-dinitropropyl) acetal [CAS 5108-69-0];

(4) Bis-(2-fluoro-2,2-dinitroethyl) formal (FEFO) [CAS 17003-79-1];

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

(6) Bis(2-methyl aziridinyl) methylamino phosphine oxide (Methyl BAPO) [CAS 85068-72-0];

(7) Bisazidomethyloxetane and its polymers [CAS 17607-20-4];

(8) Bischloromethyloxetane (BCMO) [CAS 142173-26-0];

(9) Butadienenitrileoxide (BNO);

(10) Butanetrioltrinitrate (BTTN) [CAS 6659-60-5];

(11) Catocene [CAS 37206-42-1] (2,2-Bis-ethylferrocenyl propane); ferrocene carboxylic acids; N-butyl-ferrocene [CAS 319904-29-7]; Butacene [CAS 125856-62-4] and other adducted polymer ferrocene derivatives;

(12) Dinitroazetidine-t-butyl salt;

(13) Energetic monomers, plasticisers and polymers containing nitro, azido, nitrate, nitraza or difluoroamino groups;

(14) Poly-2,2,3,3,4,4-hexafluoropentane-1,5-diol formal (FPF-1);

(15) Poly-2,4,4,5,5,6,6-heptafluoro-2-tri-fluoromethyl-3-oxaheptane-1,7-diol formal (FPF-3);

(16) Glycidylazide Polymer (GAP) [CAS 143178-24-9] and its derivatives;

(17) Hexabenzylhexaazaisowurtzitane (HBIW) [CAS 124782-15-6];

(18) Hydroxyl terminated polybutadiene (HTPB) 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];

(19) Superfine iron oxide ($Fe_20_3$ hematite) with a specific surface area more than 250 $m^2$/g and an average particle size of 0.003 µm or less [CAS 1309-37-1];

(20) Lead beta-resorcylate [CAS 20936-32-7];

(21) Lead stannate [CAS 12036-31-6], lead maleate [CAS 19136-34-6], lead citrate [CAS 14450-60-3];

(22) Lead-copper chelates of beta-resorcylate or salicylates [CAS 68411-07-4];

(23) Nitratomethylmethyloxetane or poly (3-Nitratomethyl, 3-methyl oxetane); (Poly-NIMMO) (NMMO) [CAS 84051-81-0];

(24) 3-Nitraza-1,5-pentane diisocyanate [CAS 7406-61-9];

(25) N-Methyl-p-Nitroaniline [CAS 100-15-2];

(26) Organo-metallic coupling agents, specifically:

(a) Neopentyl [diallyl] oxy, tri [dioctyl] phosphato titanate [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];

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

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

(27) Polycyanodifluoroaminoethyleneoxide (PCDE);

(28) 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;

(29) Polyglycidylnitrate or poly (nitratomethyl oxirane); (Poly-GLYN) (PGN) [CAS 27814-48-8];

(30) Polynitroorthocarbonates;

(31) Propyleneimine, 2-methylaziridine [CAS 75-55-8];

(32) Tetraacetyldibenzylhexaazaisowurtzitane (TAIW);

(33) Tetraethylenepentaamineacrylonitrile (TEPAN) [CAS 68412-45-3]; cyanoethylated polyamine and its salts;

(34) Tetraethylenepentaamineacrylonitrileglycido 1 (TEPANOL) [CAS 68412-46-4]; cyanoethylated polyamine adducted with glycidol and its salts;

(35) Triphenyl bismuth (TPB) [CAS 603-33-8];

(36) Tris-1-(2-methyl)aziridinyl phosphine oxide (MAPO) [CAS 57-39-6]; bis(2-methyl aziridinyl) 2-(2-hydroxypropanoxy) propylamino phosphine oxide (BOBBA 8); and other MAPO derivatives;

(37) 1,2,3-Tris[1,2-bis(difluoroamino)ethoxy] propane [CAS 53159-39-0]; tris vinoxy propane adduct (TVOPA);

(38) 1,3,5-trichlorobenzene [CAS 10 8-70-3];

(39) 1,2,4 trihydroxybutane (1,2,4 butanetriol);

(40) 1,3,5,7 tetraacetyl-1,3,5,7,-tetraaza cyclo-octane (TAT) [CAS 41378-98-7];

(41) 1,4,5,8 Tetraazadecalin [CAS 5409-42-7];

(42) Low (less than 10,000) molecular weight, alcohol-functionalised, poly(epichlorohydrin); poly(epichlorohydrindiol) and triol.

except:

Boron and boron carbide enriched with boron-10 (20% or more of total boron-10 content).