BIS | Department for Business Innovation & Skills

UK MILITARY LIST

The UK military list of items that require export authorisation.

AUGUST 2010

SCHEDULE 2

Schedule referred to in Article 2 of the Export Control Order 2008

MILITARY GOODS, SOFTWARE AND TECHNOLOGY

Note: In this Schedule, defined terms are printed in quotation marks.

Definitions

In this Schedule:

"adapted for use in war" means any modification or selection (e.g., altering purity, shelf life, virulence, dissemination characteristics, or resistance to ultra violet (UV) radiation) designed to increase the effectiveness in producing casualties in humans or animals, degrading equipment or damaging crops or the environment;

"biocatalyst" means enzymes for specific chemical or biochemical reactions and other biological compounds which bind to and accelerate the degradation of chemical warfare (CW) agents;

"biopolymer" means the following biological macromolecules:

a. enzymes for specific chemical or biochemical reactions;

b. 'monoclonal antibodies', 'polyclonal antibodies' or 'anti-idiotypic antibodies';

c. specially designed or specially processed 'receptors';

Technical Note:

'Monoclonal antibodies' means proteins which bind to a specific antigenic site and are produced by a single clone of cells;

'Polyclonal antibodies' means a mixture of proteins which bind to a specific antigen and are produced by more than one clone of cells;

'Anti-idiotypic antibodies' means antibodies which bind to the specific antigen binding sites of other antibodies;

'Receptors' means biological macromolecular structures capable of binding ligands, the binding of which affects physiological functions.

"development" means all stages prior to "production" (e.g., design, design research, design analyses, design concepts, assembly and testing of prototypes, pilot production schemes, design data, process of transforming design data into goods or "software", configuration design, integration design, layouts);

"end-effectors" means grippers, active tooling units (i.e., devices for applying motive power, process energy or sensing to the workpiece) and any other tooling that is attached to the baseplate on the end of a "robot" manipulator arm;

"energetic materials" means substances or mixtures that react chemically to release energy required for their intended application; "explosives", "pyrotechnics" and "propellants" are sub-classes of energetic materials;

"explosives" means solid, liquid or gaseous substances or mixtures of substances which, in their application as primary, booster, or main charges in warheads, demolition and other applications, are required to detonate;

"expression vectors" means carriers (e.g., plasmid or virus) used to introduce genetic material into host cells;

"first generation image intensifier tubes" mean electrostatically focused tubes, employing input and output fibre optic or glass face plates, multi-alkali photocathodes (S-20 or S-25), but not microchannel plate amplifiers;

"fuel cell" means an electrochemical device that converts chemical energy directly into Direct Current (DC) electricity by consuming fuel from an external source;

"improvised explosive devices" means devices fabricated or intended to be placed in an improvised manner incorporating destructive, lethal, noxious, "pyrotechnic" or incendiary chemicals designed to destroy, disfigure or harass; they may incorporate military stores, but are normally devised from non-military components;

"laser" means an assembly of components which produce both spatially and temporally coherent light which is amplified by stimulated emission of radiation;

"lighter-than-air vehicles" means balloons and airships that rely on hot air or on lighter-than-air gases such as helium or hydrogen for their lift;

"nuclear reactor" means the goods within or attached directly to the reactor vessel, the equipment which controls the level of power in the core, and the components which normally contain, come into direct contact with or control the primary coolant of the reactor core;

"production" means all production stages (e.g., product engineering, manufacture, integration, assembly (mounting), inspection, testing, quality assurance);

"propellants" means substances or mixtures that react chemically to produce large volumes of hot gases at controlled rates to perform mechanical work;

"pyrotechnic(s)" means mixtures of solid or liquid fuels and oxidisers which, when ignited, undergo an energetic chemical reaction at a controlled rate intended to produce specific time delays, or quantities of heat, noise, smoke, visible light or infrared radiation; pyrophorics are a subclass of pyrotechnics, which contain no oxidisers but ignite spontaneously on contact with air;

"required" as applied to "technology", refers to only that portion of "technology" which is peculiarly responsible for achieving or exceeding the controlled performance levels, characteristics or functions. Such "required" "technology" may be shared by different goods and the intended use of "technology" is irrelevant to whether it is "required";

"riot control agents" means substances which under the expected conditions of use for riot control purposes, produce rapidly in humans sensory irritation or disabling physical effects which disappear within a short time following termination of exposure;

Technical Note:

Tear gases are a subset of "riot control agents".

"robot" means a manipulation mechanism, which may be of the continuous path or of the point-to-point variety, may use sensors, and which:

a. is multifunctional;

b. is capable of positioning or orienting material, parts, tools or special devices through variable movements in three dimensional space;

c. incorporates three or more closed or open loop servo-devices which may include stepping motors; and

d. has "user-accessible programmability" by means of the teach/playback method or by means of an electronic computer which may be a programmable logic controller, i.e., without mechanical intervention;

Note: *This definition does not include:*

a. Manipulation mechanisms which are only manually/teleoperator controllable;

b. Fixed sequence manipulation mechanisms, which are automated moving devices, operating according to "programmes" where the motions are limited by fixed stops, such as pins or cams and the sequence of motions and the selection of paths or angles are not variable or changeable by mechanical, electronic or electrical means;

c. Mechanically controlled variable sequence manipulation mechanisms, which are automated moving devices, operating according to "programmes" where the motions are limited by fixed, but adjustable stops, such as pins or cams and the sequence of motions and the selection of paths or angles are variable within the fixed programme pattern; variations or modifications of the programme pattern (such as changes of pins or exchanges of cams) in one or more motion axes are accomplished only through mechanical operations;

d. Non-servo-controlled variable sequence manipulation mechanisms, which are automated moving devices, operating according to mechanically fixed programmed motions; the" programme" is variable but the sequence proceeds only by the binary signal from mechanically fixed electrical binary devices or adjustable stops;

e. Stacker cranes defined as Cartesian coordinate manipulator systems manufactured as an integral part of a vertical array of storage bins and designed to access the contents of those bins for storage or retrieval.

"special gun-mounting" means any fixture designed to mount a gun;

"superconductive" in relation to materials (e.g., metals, alloys or compounds) means those which can lose all electrical resistance (i.e., which can attain infinite electrical conductivity and carry very large electrical currents without Joule heating); the superconductive state of a material is individually characterised by a 'critical temperature', a critical magnetic field, which is a function of temperature, and a critical current density which is a function of both magnetic field and temperature;

Technical Note:

'Critical temperature' (also known as the transition temperature) of a specific "superconductive" material means the temperature at which the specific material loses all resistance to the flow of direct electrical current.

"technology" means specific 'information' necessary for the "development", "production" or "use" of goods or "software";

> *Technical Note:*
>
> *'Information' may take forms including, but not limited to: blueprints, plans, diagrams, models, formulae, tables, 'source code', engineering designs and specifications, manuals and instructions written or recorded on other media or devices (e.g., disk, tape, read-only memories);*
>
> *'source code' (or source language) is a convenient expression of one or more processes which may be turned by a programming system into equipment executable form.*

"use" means operation, installation (e.g., on-site installation), maintenance, checking, repair, overhaul and refurbishing;

"user-accessible programmability" means the facility allowing a user to insert, modify or replace "programmes" by means other than:

a. A physical change in writing or interconnections; or

b. The setting of function controls including entry of parameters.

MILITARY, SECURITY AND PARA-MILITARY GOODS, SOFTWARE AND TECHNOLOGY AND ARMS, AMMUNITION AND RELATED MATERIEL

ML1 Smooth-bore weapons with a calibre of less than 20 mm, other firearms and automatic weapons with a calibre of 12.7 mm (calibre 0.50 inches) or less and accessories, as follows, and specially designed components therefor:

a. Rifles, carbines, revolvers, pistols, machine pistols and machine guns;

b. Smooth-bore weapons;

c. Weapons using caseless ammunition;

d. Silencers, "special gun-mountings", weapon sights, clips and flash suppressers for firearms specified in ML1.a., ML1.b. or ML1.c.

Note: *ML1 does not control:*

a. Air weapons (other than those declared by the Firearms (Dangerous Air Weapons) Rules 1969[a] *to be specially dangerous);*

b. Firearms specially designed for dummy ammunition and which are incapable of firing any ammunition in this Schedule;

c. Firearms certified by a registered UK Proof House as having been rendered incapable of firing any ammunition in this Schedule;

d. Bayonets;

e. Air (pneumatic) or cartridge (explosive) powered guns or pistols designed as:

1. Industrial tools; or

2. Humane stunning devices employed specifically for animal slaughter;

f. Signal pistols;

g. Optical weapon sights without electronic image processing (i.e., using only lenses to view target), with a magnification of 4 times or less, provided they are not specially designed or modified for military use.

ML2 Smooth-bore weapons with a calibre of 20 mm or more, other armament or weapons with a calibre greater than 12.7 mm (calibre 0.50 inches), projectors and accessories, as follows, and specially designed components therefor:

a. Guns, howitzers, cannon, mortars, anti-tank weapons, projectile launchers, military flame throwers, rifles, recoilless rifles, smooth-bore weapons, and signature reduction devices therefor;

b. Smoke, gas and "pyrotechnic" projectors or generators, specially designed or modified for military use;

c. Weapons sights for firearms specified in ML2.a. or ML2.b.

d. Mountings specially designed for the weapons specified in ML2.a.

Note 1: *ML2 does not control signal pistols.*

Note 2: *ML2.a. does not apply to hand-held projectile launchers specially designed to launch tethered projectiles, having no high explosive charge or communication link, to a range of 500m or less.*

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[a] S.I. 1969/47, amended by S.I. 1993/1490

ML3 Ammunition and fuze setting devices, as follows, and specially designed components therefor:

a. Ammunition for weapons specified in ML1, ML2 or ML12;

Note: *ML3.a. does not control:*

a. Ammunition crimped without a projectile (blank star) and dummy ammunition with a pierced powder chamber;

b. Lead or lead alloy pellet ammunition specially designed for air weapons;

c. Cartridges specially designed for signalling, bird scaring or lighting of gas flares at oil wells.

b. Fuze setting devices specially designed for ammunition specified in ML3.a.

ML4 [N*] Bombs, torpedoes, rockets, missiles, other explosive devices and charges, and related equipment and accessories, as follows, and specially designed components therefor:

N.B.1: *Electronic guidance and navigation equipment is controlled in ML11.a.*
N.B.2: *Aircraft missile protection systems are controlled in ML4.c.*

[M-[b]] a. Bombs, torpedoes, grenades, smoke canisters, rockets, mines, missiles, depth charges, demolition-charges, demolition-devices, demolition-kits, devices that contain "pyrotechnics", cartridges and simulators (i.e., equipment simulating the characteristics of any of these goods), specially designed for military use;

[M-[c]] b. Equipment that is both specially designed for military use and specially designed for the handling, controlling, activating, powering with one-time operational output, launching, laying, sweeping, discharging, decoying, jamming, detonating, disrupting or detecting of any of the following:

1. goods specified in ML4.a.; or
2. "improvised explosive devices";

Note: *ML4.b. does not control hand held devices limited by design solely to the detection of metal objects and incapable of distinguishing between mines and other metal objects.*

c. Aircraft Missile Protection Systems (AMPS).

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b [M1A*], [M2A*], [M3A*], [M9A*], [M10A*], [M11A*], [M12A4*], [M12A5a*], [M13A*], [M14A*], [M17A1*], [M18A*], [M19A*], [M20A*]

c [M2A1f*], [M9*], [M10A1*], [M10A2*], [M11A1*], [M11A2*], [M11A3*], [M11A4*], [M12*]

ML5 Fire control equipment and related alerting and warning equipment, related systems, test and alignment and countermeasure equipment, as follows, specially designed for military use, and specially designed components and accessories therefor:

[M2A1f*] a. Weapon sights, bombing computers, gun laying equipment and weapon control systems;

[M11A1/2*] [M12A4/5*] b. Target acquisition, designation, range-finding, surveillance or tracking systems; detection, data fusion, recognition or identification equipment; and sensor integration equipment;

c. Countermeasure equipment for goods specified in ML5.a. or ML5.b.;

Note: For the purposes of ML5.c., countermeasure equipment includes detection equipment.

d. Field test or alignment equipment, specially designed for goods specified in ML5.a., ML5.b. or ML5.c.

ML6 Ground "vehicles" and components as follows:

N.B.: Electronic guidance and navigation equipment is controlled in ML11.a.

[M12A1/2*] a. Ground "vehicles" and components therefor, specially designed or modified for military use;

Technical Note:
For the purposes of ML6.a. the term ground "vehicles" includes trailers.

Note: In ML6.a. modification of a ground "vehicle" for military use entails a structural, electrical or mechanical change involving one or more specially designed military components.

b. All-wheel drive "vehicles" capable of off-road use which have been manufactured or fitted with metallic or non-metallic materials to provide ballistic protection, other than those specified in ML6.a.

Note 1: ML6.b. does not control "vehicles" designed or fitted out for the transportation of valuables or funds.

Note 2: ML6.b. does not control "vehicles" fitted with, or designed or modified to be fitted with, a plough, flail or tiller for the purpose of land mine clearance.

PL5035 Components that are both specially designed to provide ballistic protection and specially designed or modified for "vehicles" specified in ML6.b.

N.B.: See also ML13.a. for armoured plate.

ML7 Chemical or biological toxic agents, toxic chemicals and mixtures containing such agents or chemicals, "riot control agents", radioactive materials, related equipment, components and materials as follows:

Note: *In some instances chemicals are listed by name and Chemical Abstract Service (CAS) number. Chemicals of the same structural formula (e.g., hydrates) are controlled regardless of name or CAS number. CAS numbers are shown to assist in identifying whether a particular chemical or mixture is controlled, irrespective of nomenclature. CAS numbers cannot be used as unique identifiers because some forms of the listed chemical have different CAS numbers, and mixtures containing a listed chemical may also have different CAS numbers.*

a. Biological agents and radioactive materials "adapted for use in war" to produce casualties in humans or animals, degrade equipment or damage crops or the environment;

[C1] b. Chemical warfare (CW) agents including, but not limited to, the following:

1. CW nerve agents:

a. O-Alkyl (equal to or less than C_{10}, 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);

b. O-Alkyl (equal to or less than C_{10}, 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);

c. O-Alkyl (H or equal to or less than C_{10}, 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);

2. CW vesicant agents:

a. Sulphur mustards, such as:
1. 2-Chloroethylchloromethylsulphide (CAS 2625-76-5);
2. Bis(2-chloroethyl) sulphide (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);

b. Lewisites, such as:
1. 2-chlorovinyldichloroarsine (CAS 541-25-3);
2. Tris (2-chlorovinyl) arsine (CAS 40334-70-1);
3. Bis (2-chlorovinyl) chloroarsine (CAS 40334-69-8);

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);

ML7 b. continued

3. CW incapacitating agents, such as:
   a. 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));

[A*] [C1] c. CW binary precursors and key precursors, as follows, and chemical mixtures containing one or more of these precursors:

1. Alkyl (Methyl, Ethyl, n-Propyl or Isopropyl) Phosphonyl Difluorides, such as:
   DF: Methyl Phosphonyldifluoride (CAS 676-99-3);
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 (CAS 57856-11-8);
3. Chlorosarin: O-Isopropyl methylphosphonochloridate (CAS 1445-76-7);
4. Chlorosoman: O-Pinacolyl methylphosphonochloridate (CAS 7040-57-5);

d. "Riot control agents", active constituent chemicals and combinations thereof including:

1. α-Bromobenzeneacetonitrile, (Bromobenzyl cyanide) (CA) (CAS 5798-79-8);
2. [(2-chlorophenyl) methylene] propanedinitrile, (o-Chlorobenzylidenemalononitrile) (CS) (CAS 2698-41-1);
3. 2-Chloro-1-phenylethanone, Phenylacyl chloride (ω-chloroacetophenone) (CN) (CAS 532-27-4);
4. Dibenz-(b,f)-1,4-oxazephine (CR) (CAS 257-07-8);
5. 10-Chloro-5,10-dihydrophenarsazine, (Phenarsazine chloride), (Adamsite), (DM) (CAS 578-94-9) ;
6. N-Nonanoylmorpholine, (MPA) (CAS 5299-64-9) ;

<u>Note 1:</u> *ML7.d. does not control "riot control agents" individually packaged for personal self-defence purposes.*

<u>Note 2:</u> *ML7.d. does not control active constituent chemicals and combinations thereof identified and packaged for food production or medical purposes.*

e. Equipment specially designed or modified for military use, designed or modified for the dissemination of any of the following, and specially designed components therefor:

1. Materials or agents specified in ML7.a., ML7.b. or ML7.d.;
2. CW agents made up of precursors specified in ML7.c.;

ML7 continued

f. Protective and decontamination goods, specially designed or modified for military use, components and chemical mixtures as follows:

1. Goods designed or modified for defence against materials specified in ML7.a., ML7.b. or ML7.d. and specially designed components therefor;

   N.B.: *See also 1A of Annex I to "the dual-use Regulation".*

2. Goods designed or modified for decontamination of goods contaminated with materials specified in ML7.a. or ML7.b. and specially designed components therefor;

3. Chemical mixtures specially developed or formulated for the decontamination of goods contaminated with materials specified in ML7.a. or ML7.b.;

g. Goods specially designed or modified for military use, designed or modified for the detection or identification of materials specified in ML7.a., ML7.b. or ML7.d. and specially designed components therefor;

N.B.: *See also 1A in Annex I to "the dual-use Regulation".*

Note: *ML7.g. does not control personal radiation monitoring dosimeters.*

h. "Biopolymers" specially designed or processed for the detection or identification of CW agents specified in ML7.b., and the cultures of specific cells used to produce them;

i. "Biocatalysts" for the decontamination or degradation of CW agents, and biological systems therefor, as follows:

1. "Biocatalysts" specially designed for the decontamination or degradation of CW agents specified in ML7.b. resulting from directed laboratory selection or genetic manipulation of biological systems;

2. Biological systems as follows: "expression vectors", viruses or cultures of cells containing the genetic information specific to the "production" of "biocatalysts" specified in ML7.i.1.

Note 1: *ML7.b. and ML7.d. do not control:*

a. *Cyanogen chloride (CAS 506-77-4);*

N.B.:See 1C of Annex I to "the dual-use Regulation".

b. *Hydrocyanic acid (CAS 74-90-8);*

c. *Chlorine (CAS 7782-50-5);*

d. *Carbonyl chloride (phosgene) (CAS 75-44-5);*

N.B.:See 1C of Annex I to "the dual-use Regulation".

e. *Diphosgene (trichloromethyl-1-chloroformate) (CAS 503-38-8);*

f. *Not used;*

g. *Xylyl bromide: ortho: (CAS 89-92-9), meta: (CAS 620-13-3), para: (CAS 104-81-4);*

h. *Benzyl bromide (CAS 100-39-01);*

i. *Benzyl iodide (CAS 620-05-3);*

j. *Bromo acetone (CAS 598-31-2);*

k. *Cyanogen bromide (CAS 506-68-3);*

l. *Bromo methylethylketone (CAS 816-40-0);*

m. *Chloro acetone (CAS 78-95-5);*

ML7 Note 1 continued

n. Ethyl iodoacetate (CAS 623-48-3);

o. Iodo acetone (CAS 3019-04-3);

p. Chloropicrin (CAS 76-06-2);

N.B.:See 1C of Annex I to "the dual-use Regulation".

q. Pelargonic acid vanillylamide (PAVA) (CAS 2444-46-4);

N.B.: See 3.2. of Annex III to "the torture Regulation".

r. Oleoresin capsicum (OC)(CAS 8023-77-6).

N.B.: See 3.3. of Annex III to "the torture Regulation".

Note 2: *The cultures of cells and biological systems specified in ML7.h. and ML7.i.2. are exclusive and ML7.h. and ML7.i.2 do not include cells or biological systems for civil purposes, (e.g., agricultural, pharmaceutical, medical, veterinary, environmental, waste management, or in the food industry).*

ML8 "Energetic materials", and related substances, as follows:

N.B.: Charges and devices are controlled in ML4 and 1A008 of Annex I to "the dual-use Regulation".

Note: In some instances chemicals are listed by name and Chemical Abstract Service (CAS) number. Chemicals of the same structural formula (e.g., hydrates) are controlled regardless of name or CAS number. CAS numbers are shown to assist in identifying whether a particular chemical or mixture is controlled, irrespective of nomenclature. CAS numbers cannot be used as unique identifiers because some forms of the listed chemical have different CAS numbers, and mixtures containing a listed chemical may also have different CAS numbers.

Technical Note:
A 'mixture' refers to a composition of two or more substances with at least one substance being controlled in ML8.

a. "Explosives", as follows, 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);

[M4C4b5]

4. CL-20 (HNIW or Hexanitrohexaazaisowurtzitane) (CAS 135285-90-4); chlathrates of CL-20;
5. CP (2-(5-cyanotetrazolato) penta amine-cobalt (III) perchlorate) (CAS 70247-32-4);
6. DADE (1,1-diamino-2,2-dinitroethylene, FOX7) (CAS 145250-81-3);
7. DATB (diaminotrinitrobenzene) (CAS 1630-08-6);
8. DDFP (1,4-dinitrodifurazanopiperazine);
9. DDPO (2,6-diamino-3,5-dinitropyrazine-1-oxide, PZO) (CAS 194486-77-6);
10. DIPAM (3,3′-diamino-2,2′,4,4′,6,6′-hexanitrobiphenyl or dipicramide) (CAS 17215-44-0);
11. DNGU (DINGU or dinitroglycoluril) (CAS 55510-04-8);
12. Furazans as follows:
    a. DAAOF (diaminoazoxyfurazan);
    b. DAAzF (diaminoazofurazan) (CAS 78644-90-3);
13. HMX and derivatives as follows:

[M4C4b3]
[N6C1.a]

    a. 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 or octogene) (CAS 2691-41-0);
    b. difluoroaminated analogs of HMX;
    c. 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);
14. HNAD (hexanitroadamantane) (CAS 143850-71-9);

[N6C1.d]

15. HNS (hexanitrostilbene) (CAS 20062-22-0);

ML8 a. continued

16. Imidazoles as follows:
    a. BNNII (Octahydro-2,5-bis(nitroimino)imidazo [4,5-d]imidazole);
    b. DNI (2,4-dinitroimidazole) (CAS 5213-49-0);
    c. FDIA (1-fluoro-2,4-dinitroimidazole);
    d. NTDNIA (N-(2-nitrotriazolo)-2,4-dinitroimidazole);
    e. PTIA (1-picryl-2,4,5-trinitroimidazole);
17. NTNMH (1-(2-nitrotriazolo)-2-dinitromethylene hydrazine);
18. NTO (ONTA or 3-nitro-1,2,4-triazol-5-one) (CAS 932-64-9);
19. Polynitrocubanes with more than four nitro groups;
20. PYX (2,6-bis(picrylamino)-3,5-dinitropyridine) (CAS 38082-89-2);

[M4C4b3] 21. RDX and derivatives as follows:

[N6C1.b]
    a. 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);
    b. Keto-RDX (K-6 or 2,4,6-trinitro-2,4,6-triazacyclohexanone) (CAS 115029-35-1);
22. TAGN (triaminoguanidinenitrate) (CAS 4000-16-2);

[N6C1.c] 23. TATB (triaminotrinitrobenzene) (CAS 3058-38-6);

24. TEDDZ (3,3,7,7-tetrabis(difluoroamine) octahydro-1,5-dinitro-1,5-diazocine);
25. Tetrazoles as follows:
    a. NTAT (nitrotriazol aminotetrazole);
    b. NTNT (1-N-(2-nitrotriazolo)-4-nitrotetrazole);
26. Tetryl (trinitrophenylmethylnitramine) (CAS 479-45-8);
27. TNAD (1,4,5,8-tetranitro-1,4,5,8-tetraazadecalin) (CAS 135877-16-6);
28. TNAZ (1,3,3-trinitroazetidine) (CAS 97645-24-4);
29. TNGU (SORGUYL or tetranitroglycoluril) (CAS 55510-03-7);
30. TNP (1,4,5,8-tetranitro-pyridazino[4,5-d]pyridazine) (CAS 229176-04-9);
31. Triazines as follows:
    a. DNAM (2-oxy-4,6-dinitroamino-s-triazine) (CAS 19899-80-0);
    b. NNHT (2-nitroimino-5-nitro-hexahydro-1,3,5-triazine) (CAS 130400-13-4);
32. Triazoles as follows:
    a. 5-azido-2-nitrotriazole;
    b. ADHTDN (4-amino-3,5-dihydrazino-1,2,4-triazole dinitramide) (CAS 1614-08-0);
    c. ADNT (1-amino-3,5-dinitro-1,2,4-triazole);
    d. BDNTA ([bis-dinitrotriazole]amine);
    e. DBT (3,3′-dinitro-5,5-bi-1,2,4-triazole) (CAS 30003-46-4);
    f. DNBT (dinitrobistriazole) (CAS 70890-46-9);
    g. NTDNA (2-nitrotriazole-5-dinitramide) (CAS 75393-84-9);
    h NTDNT (1-N-(2-nitrotriazolo)-3,5-dinitrotriazole);
    i. PDNT (1-picryl-3,5-dinitrotriazole);
    j. TACOT (tetranitrobenzotriazolobenzotriazole) (CAS 25243-36-1);

ML8 a. continued

[N6C1.e*] 33. "Explosives" not listed elsewhere in ML8.a. and having any of the following:

a. Detonation velocity exceeding 8,700 m/s at maximum density; or

b. Detonation pressure exceeding 34 GPa (340 kbar);

34. Organic "explosives" not listed elsewhere in ML8.a. and having all of the following:

a. Yielding detonation pressures of 25 GPa (250 kbar) or more; and

b. Remaining stable at temperatures of 523 K (250°C) or higher for periods of 5 minutes or longer;

b. "Propellants" as follows:

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-metallised, or more than 270 seconds for aluminised compositions;

2. Any UN Class 1.3 solid "propellant" with a theoretical specific impulse (under standard conditions) of more than 230 seconds for non-halogenised, 250 seconds for non-metallised compositions and 266 seconds for metallised compositions;

3. "Propellants" having a force constant of more than 1,200 kJ/kg;

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

5. Elastomer Modified Cast Double Base (EMCDB) "propellants" with extensibility at maximum stress of more than 5% at 233 K (-40°C);

6. Any "propellant" containing substances specified in ML8.a.;

7. "Propellants", not specified elsewhere in this Schedule, specially designed for military use;

c. "Pyrotechnics", fuels and related substances, as follows, and 'mixtures' thereof:

1. Aircraft fuels specially formulated for military purposes;

Note: *Aircraft fuels in ML8.c.1. are finished goods, not their constituents.*

2. Alane (aluminium hydride) (CAS 7784-21-6);

[M4C6c1] 3. Carboranes; decaborane (CAS 17702-41-9); pentaboranes (CAS 19624-22-7 and 18433-84-6) and their derivatives;

4. Hydrazine and derivatives as follows (see also ML8.d.8. and ML8.d.9. for oxidising hydrazine derivatives):

[M4C2a] a. Hydrazine (CAS 302-01-2) in concentrations of 70% or more;

Note: *ML8.c.4.a. does not control hydrazine 'mixtures' specially formulated for corrosion control.*

[M4C2b1] b. Monomethyl hydrazine (CAS 60-34-4);

c. Symmetrical dimethyl hydrazine (CAS 540-73-8);

[M4C2b2] d. Unsymmetrical dimethyl hydrazine (CAS 57-14-7);

[M4C2d*] 5. Metal fuels in particle form whether spherical, atomised, spheroidal, flaked or ground, manufactured from material consisting of 99% or more of any of the following:

a. Metals as follows 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;

ML8 c. 5. continued

b. 'Mixtures' containing any of the following:

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

[M4C2e*&f*] [N2C4] 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;

Note: ML8.c.5.b.2. does not control boron and boron carbide enriched with boron-10 (20% or more of total boron-10 content).

Note: "Explosives" and fuels containing the metals or alloys specified in ML8.c.5. are controlled whether or not the metals or alloys are encapsulated in aluminium, magnesium, zirconium, or beryllium.

6. Military materiel containing thickeners for hydrocarbon fuels specially formulated for use in flame throwers or incendiary munitions, such as metal stearates or palmates (e.g., octal (CAS 637-12-7)) and M1, M2 and M3 thickeners;

[M4C3] 7. Perchlorates, chlorates and chromates composited with powdered metal or other high energy fuel components;

[M4C2c*] 8. 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;

9. Titanium subhydride (TiH_n) of stoichiometry equivalent to n = 0.65 - 1.68;

d. Oxidisers, as follows, and 'mixtures' thereof:

[M4C4b2] 1. ADN (ammonium dinitramide or SR 12) (CAS 140456-78-6);

[M4C4b1] 2. AP (ammonium perchlorate) (CAS 7790-98-9);

[M4C4a6*] 3. Compounds composed of fluorine and any of the following:

a. Other halogens;

b. Oxygen; or

c. Nitrogen;

[N2C6] *Note 1: ML8.d.3. does not control chlorine trifluoride (CAS 7790-91-2).*

Note 2: ML8.d.3. does not control nitrogen trifluoride (CAS 7783-54-2) in its gaseous state.

N.B.: See also 1C of Annex I to "the dual-use Regulation".

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);

[M4C4b4] 7. HNF (hydrazinium nitroformate) (CAS 20773-28-8);

[M4C2b3] 8. Hydrazine nitrate (CAS 37836-27-4);

[MC2b4*] 9. Hydrazine perchlorate (CAS 27978-54-7);

[M4C4a5] 10. Liquid oxidisers comprised of or containing inhibited red fuming nitric acid (IRFNA) (CAS 8007-58-7);

ML8 continued

e. Binders, plasticisers, monomers and polymers as follows:

1. AMMO (azidomethylmethyloxetane and its polymers) (CAS 90683-29-7);
2. BAMO (bisazidomethyloxetane and its polymers) (CAS 17607-20-4);

[M4C6d7a] 3. BDNPA (bis (2,2-dinitropropyl)acetal) (CAS 5108-69-0);

[M4C6d7b] 4. BDNPF (bis (2,2-dinitropropyl)formal) (CAS 5917-61-3);

[M4C6d3] 5. BTTN (butanetrioltrinitrate) (CAS 6659-60-5);

[M4C6d5] 6. Energetic monomers, plasticisers or polymers, specially formulated for military use and containing any of the following:

a. Nitro groups;
b. Azido groups;
c. Nitrate groups;
d. Nitraza groups; <u>or</u>
e. Difluoroamino groups;

7. FAMAO (3-difluoroaminomethyl-3-azidomethyl oxetane) and its polymers;
8. FEFO (bis-(2-fluoro-2,2-dinitroethyl) formal) (CAS 17003-79-1);
9. FPF-1 (poly-2,2,3,3,4,4-hexafluoropentane-1,5-diol formal) (CAS 376-90-9);
10. FPF-3 (poly-2,4,4,5,5,6,6-heptafluoro-2-tri-fluoromethyl-3-oxaheptane-1,7-diol formal);

[M4C5c] 11. GAP (glycidylazide polymer) (CAS 143178-24-9) and its derivatives;

[M4C5b] 12. 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);

13. Alcohol functionalised poly(epichlorohydrin) with a molecular weight less than 10,000, as follows:

a. Poly(epichlorohydrindiol); <u>and</u>
b. Poly(epichlorohydrintriol);

[M4C6d6] 14. NENAs (nitratoethylnitramine compounds) (CAS 17096-47-8, 85068-73-1, 82486-83-7, 82486-82-6 and 85954-06-9);

15. PGN (poly-GLYN, polyglycidylnitrate or poly(nitratomethyl oxirane) (CAS 27814-48-8);
16. Poly-NIMMO (poly nitratomethylmethyloxetane) or poly-NMMO (poly[3-Nitratomethyl-3-methyloxetane]) (CAS 84051-81-0);
17. Polynitroorthocarbonates;
18. TVOPA (1,2,3-tris[1,2-bis(difluoroamino)ethoxy] propane or tris vinoxy propane adduct) (CAS 53159-39-0);

f. Additives as follows:

1. Basic copper salicylate (CAS 62320-94-9);
2. BHEGA (bis-(2-hydroxyethyl) glycolamide) (CAS 17409-41-5);
3. BNO (butadienenitrileoxide) (CAS 9003-18-3);
4. Ferrocene derivatives as follows:

[M4C6c2n] a. Butacene (CAS 125856-62-4);

[M4C6c2a] b. Catocene (2,2-bis-ethylferrocenyl propane) (CAS 37206-42-1);

[M4C6c2m] c. Ferrocene carboxylic acids;

[M4C6c2d] d. n-butyl-ferrocene (CAS 31904-29-7);

[M4C6c2o*] e. Other adducted polymer ferrocene derivatives;

ML8 f. continued

5. Lead beta-resorcylate (CAS 20936-32-7);
6. Lead citrate (CAS 14450-60-3);
7. Lead-copper chelates of beta-resorcylate or salicylates (CAS 68411-07-4);
8. Lead maleate (CAS 19136-34-6);
9. Lead salicylate (CAS 15748-73-9);
10. Lead stannate (CAS 12036-31-6);

[M4C6a1*] 11. MAPO (tris-1-(2-methyl)aziridinyl phosphine oxide) (CAS 57-39-6), and BOBBA 8 (bis(2-methyl aziridinyl)-2-(2-hydroxypropanoxy) propylamino phosphine oxide); and other MAPO derivatives;

12. Methyl BAPO (bis(2-methyl aziridinyl) methylamino phosphine oxide) (CAS 85068-72-0);

[M4C6e2] 13. N-methyl-p-nitroaniline (CAS 100-15-2);

14. 3-Nitraza-1,5-pentane diisocyanate (CAS 7406-61-9);
15. Organo-metallic coupling agents as follows:
    a. Neopentyl[diallyl]oxy, tri[dioctyl]phosphato-titanate (CAS 103850-22-2); also known as titanium IV, 2,2-[bis 2-propenolatomethyl, 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-1) methyl, n-propanolatomethyl] butanolato-1, tris(dioctyl)phosphate;
16. Polycyanodifluoroaminoethyleneoxide;

[M4C6a5] 17. Polyfunctional aziridine amides with isophthalic, trimesic (BITA or butyleneimine trimesamide), isocyanuric or trimethyladipic backbone structures and 2-methyl or 2-ethyl substitutions on the aziridine ring;

18. Propyleneimine (2-methylaziridine) (CAS 75-55-8);
19. Superfine iron oxide (Fe_2O_3) (CAS 1317-60-8) with a specific surface area more than 250 m^2/g and an average particle size of 3.0 nm or less;

[M4C6a4] 20. TEPAN (tetraethylenepentaamineacrylonitrile) (CAS 68412-45-3); cyanoethylated polyamines and their salts;

[M4C6a3] 21. TEPANOL (tetraethylenepentaamineacrylonitrileglycidol) (CAS 68412-46-4); cyanoethylated polyamines adducted with glycidol and their salts;

[M4C6b] 22. TPB (triphenyl bismuth) (CAS 603-33-8);

g. Precursors as follows:

1. BCMO (bischloromethyloxetane) (CAS 142173-26-0);
2. Dinitroazetidine-t-butyl salt (CAS 125735-38-8);
3. HBIW (hexabenzylhexaazaisowurtzitane) (CAS 124782-15-6);
4. TAIW (tetraacetyldibenzylhexaazaisowurtzitane) (CAS 182763-60-6);
5. TAT (1,3,5,7-tetraacetyl-1,3,5,7-tetraaza cyclo-octane) (CAS 41378-98-7);
6. 1,4,5,8-tetraazadecalin (CAS 5409-42-7);
7. 1,3,5-trichlorobenzene (CAS 108-70-3);
8. 1,2,4-trihydroxybutane (1,2,4-butanetriol) (CAS 3068-00-6).

ML9 "Vessels" of war, special naval equipment, accessories, components and other surface "vessels", as follows:

N.B.: *Electronic guidance and navigation equipment is controlled in ML11.a.*

a. "Vessels" and components, as follows:

1. "Vessels" (surface or underwater) specially designed or modified for military use, regardless of current state of repair or operating condition, and whether or not they contain weapon delivery systems or armour, and components therefor specially designed for military use;

2. Surface "vessels", other than those specified in ML9.a.1., having any of the following fixed or integrated into the "vessels":

a. Automatic weapons having a calibre of 12.7 mm or greater specified in ML1, or weapons specified in ML2, ML4, ML12 or ML19, or 'mountings' or hard points for such weapons;

Technical Note:
'Mountings' refers to weapon mounts or structural strengthening for the purpose of installing weapons.

b. Fire control systems specified in ML5;

c. Both:

1. 'CBRN protection'; and

2. 'Pre-wet or wash down system' designed for decontamination purposes; or

Technical Notes:
1. 'CBRN protection' is a self contained interior space containing features such as over-pressurization, isolation of ventilation systems, limited ventilation openings with chemical, biological, radiological and nuclear filters and limited personnel access points incorporating air-locks.
2. 'Pre-wet or wash down system' is a seawater spray system capable of simultaneously wetting the exterior superstructure and decks of a vessel.

d. Active weapon countermeasure systems specified in ML4.b., ML5.c. or ML11.a. but only where the "vessel" has any of the following:

1. 'CBRN protection';

2. Hull and superstructure, specially designed to reduce the radar cross section;

3. Thermal signature reduction devices, (e.g., an exhaust gas cooling system), excluding those specially designed to increase overall power plant efficiency or to reduce the environmental impact; or

4. A degaussing system designed to reduce the magnetic signature of the whole vessel;

b. Anti-submarine nets and anti-torpedo nets, specially designed for military use;

c. Hull penetrators and connectors, specially designed for military use, that enable interaction with equipment external to a "vessel", and components therefor specially designed for military use.

ML10 "Aircraft", "lighter-than-air vehicles", unmanned aerial vehicles, aero-engines, "aircraft" equipment and related goods, as follows, specially designed or modified for military use and specially designed components therefor,:

N.B.: *Electronic guidance and navigation equipment is controlled in ML11.a.*

a. Combat "aircraft";

b. Other "aircraft" and "lighter-than-air vehicles" (e.g., military reconnaissance, assault, military training, transporting and airdropping troops or military equipment, logistics support);

[M-[d]] c. Unmanned aerial vehicles (UAV) (e.g., remotely piloted air vehicles (RPVs), autonomous programmable vehicles (APV) and "lighter-than-air vehicles"), and their launchers, ground support equipment and related equipment for command and control;

[M3A1/2*] d. Aero-engines;

e. Airborne equipment (e.g., airborne refuelling equipment), specially designed for use with "aircraft" specified in ML10.a. or ML10.b. or aero-engines specified in ML10.d.;

f. Pressure refuellers, pressure refuelling equipment, equipment specially designed to facilitate operations in confined areas and 'ground equipment', specially designed or modified for use with "aircraft" specified in ML10.a. or ML10.b., or aero-engines specified in ML10.d.;

Technical Note:
'Ground equipment' means ground-based equipment for the operation, handling, maintenance, checking, repair, overhaul and refurbishment of "aircraft" or aero-engines.

g. Military aircrew protective headgear and masks, pressurised breathing equipment and partial pressure suits for use in "aircraft", anti-g suits, liquid oxygen converters used for "aircraft" or missiles, and catapults and cartridge actuated devices for emergency escape of personnel from "aircraft";

h. Parachutes, paragliders and related equipment, as follows:

1. Parachutes not specified elsewhere in this Schedule;
2. Paragliders;
3. Equipment specially designed for high altitude parachutists;

i. Automatic piloting systems for parachuted loads and equipment for controlled opening of parachutes at any pre-determined height.

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d [M1A*], [M2A*], [M9A*], [M10A*], [M11A*], [M12A*], [M19A*]

ML11 [M-[e]] Electronic equipment, not specified elsewhere in this Schedule, as follows, and specially designed components therefor:

a. Electronic equipment specially designed or modified for military use;

b. Global Navigation Satellite Systems (GNSS) jamming equipment.

Note: *ML11.a. controls all electronic guidance and navigation equipment.*

ML12 High Velocity Kinetic Energy Weapon (KEW) systems and related equipment, as follows, and specially designed components therefor:

a. Kinetic energy weapon systems specially designed for destruction or effecting mission abort of a target;

N.B.: *For weapon systems using sub-calibre ammunition or employing solely chemical propulsion, and ammunition therefor, see ML1 to ML4.*

b. Specially designed test and evaluation facilities and test models (e.g., diagnostic instrumentation and targets), for dynamic testing of kinetic energy projectiles and systems.

ML13 Armoured or protective goods and constructions, as follows, and specially designed components therefor:

a. Armoured plate, having any of the following characteristics:

1. Manufactured to comply with a military standard or specification; or

2. Suitable for military use;

b. Constructions of metallic or non-metallic materials or combinations thereof specially designed to provide ballistic protection for military systems;

c. Helmets manufactured according to military standards or specifications, or comparable national standards;

Note: *ML13.c. does not control:*

a. Conventional steel helmets, neither modified nor designed to accept, nor equipped with any type of accessory device;

b. Helmets manufactured before 1945;

c. Individual helmets not specially designed for military use when accompanying their users.

N.B. 1: *Military aircrew protective headgear is controlled in ML10.g.*

N.B. 2: *Military high altitude parachutists' protective headgear is controlled in ML10.h.8.*

d. Body armour and ballistic protective garments manufactured according to military standards or specifications, or equivalent.

Note: *ML13.d. does not control individual suits of body armour or ballistic protective garments for personal protection and accessories therefor when accompanying their users.*

N.B.: *See also 1A of Annex I to "the dual-use Regulation".*

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e [M1A/B*] to [M20A/B*]

ML14 Specialised equipment for military training or for simulating military scenarios, simulators specially designed for training in the "use" of any firearm or weapon specified in ML1 or ML2, and specially designed components and accessories therefor.

ML15
[M11A1/2*]

Imaging or countermeasure equipment, as follows, specially designed for military use, and specially designed components and accessories therefor:

a. Recorders and image processing equipment;

b. Cameras, photographic equipment and film processing equipment;

c. Image intensifier equipment;

d. Infrared or thermal imaging equipment;

e. Imaging radar sensor equipment;

f. Countermeasure or counter-countermeasure equipment for the equipment specified in ML15.a. to ML15.e.

Note: *ML15 does not control "first generation image intensifier tubes" or equipment specially designed so that only "first generation image intensifier tubes" are or can be incorporated in it.*

N.B. 1: *For weapons sights incorporating "first generation image intensifier tubes" see ML1, ML2 and ML5.*

N.B. 2: *See also 6A of Annex I to "the dual-use Regulation".*

ML16
[M*]

Forgings, castings and other unfinished goods, the use of which in controlled goods is identifiable by material composition, geometry or function, and which are specially designed for any of the goods specified in ML1 to ML4, ML6, ML9, ML10, ML12 or ML19.

ML17 Miscellaneous goods, material and 'libraries', as follows, and specially designed components therefor:

a. Self-contained diving and underwater swimming apparatus as follows:
   1. Closed or semi-closed circuit (rebreathing) apparatus specially designed for military use (i.e., specially designed to be non-magnetic);
   2. Specially designed components for use in the conversion of open-circuit apparatus to military use;
   3. Goods designed exclusively for military use with self-contained diving and underwater swimming apparatus;

b. Construction equipment specially designed for military use;

[M17A1*] [M17C1*] c. Fittings, coatings and treatments for signature suppression, specially designed for military use;

d. Field engineer equipment specially designed for use in a combat zone;

e. "Robots", "robot" controllers and "robot" "end-effectors", having any of the following characteristics:
   1. Specially designed for military use;
   2. Incorporating means of protecting hydraulic lines against externally induced punctures caused by ballistic fragments (e.g., incorporating self-sealing lines) and designed to use hydraulic fluids with flash points higher than 839 K (566°C); <u>or</u>
   3. Specially designed or rated for operating in an Electro-Magnetic Pulse (EMP) environment;

   <u>*Technical Note:*</u>
   Electro-magnetic pulse does not refer to unintentional interference caused by electromagnetic radiation from nearby equipment (e.g., machinery, appliances or electronics) or lightning.

[M17D1*] f. 'Libraries' (parametric technical databases) specially designed for military use with equipment specified in this Schedule;

<u>*Technical Note:*</u>
For the purpose of ML17, the term 'libraries' (parametric technical database) means a collection of technical information of a military nature, reference to which may enhance the performance of military equipment or systems.

g. Nuclear power generating equipment or propulsion equipment (e.g., "nuclear reactors"), specially designed for military use and components therefor, specially designed or modified for military use;

h. Goods and material, coated, treated or prepared to provide signature suppression, specially designed for military use, other than those controlled elsewhere in this Schedule;

i. Simulators specially designed for military "nuclear reactors";

j. Mobile repair shops specially designed or modified to service military equipment;

k. Field generators specially designed or modified for military use;

l. Containers specially designed or modified for military use;

m. Ferries, other than those controlled elsewhere in this Schedule, rafts, bridges and pontoons, specially designed for military use;

n. Test models specially designed for the "development" of goods or "technology" specified in ML4, ML6, ML9 or ML10;

o. Laser protection equipment (e.g., eye and sensor protection) specially designed for military use;

p. "Fuel cells", other than those specified elsewhere in this Schedule, specially designed or modified for military use.

ML18 Production equipment and components as follows:

[M-[f]] a. Specially designed or modified production equipment for the "production" of goods specified in this Schedule, and specially designed components therefor;

[M-[g]] b. Specially designed environmental test facilities and specially designed equipment therefor, for the certification, qualification or testing of goods specified in this Schedule.

PL5017 Equipment and test models other than those specified in ML11, ML12.b., ML17.n. or ML19.e. specially designed or modified for the "development" or "use" of goods that are both specially designed for military use and specified in this Schedule.

ML19 Directed Energy Weapon (DEW) systems, related or countermeasure equipment and test models, as follows, and specially designed components therefor:

a. "Laser" systems specially designed for destruction or effecting mission-abort of a target;

b. Particle beam systems capable of destruction or effecting mission-abort of a target;

c. High power Radio-Frequency (RF) systems capable of destruction or effecting mission-abort of a target;

d. Equipment specially designed for the detection or identification of, or defence against, systems specified in ML19.a. to ML19.c.;

e. Physical test models for the systems, equipment and components specified in ML19;

f. Continuous wave or pulsed "laser" systems specially designed to cause permanent blindness to un-enhanced vision (i.e., to the naked eye or to the eye with corrective eyesight devices).

ML20 Cryogenic and "superconductive" equipment, as follows, and specially designed components and accessories therefor:

a. Equipment specially designed or configured to be installed in a vehicle for military ground, marine, airborne or space applications, capable of operating while in motion and of producing or maintaining temperatures below 103 K (-170°C);

b. "Superconductive" electrical equipment (rotating machinery and transformers) specially designed or configured to be installed in a vehicle for military ground, marine, airborne or space applications and capable of operating while in motion.

<u>Note:</u> *ML20 does not control direct-current hybrid homopolar generators that have single-pole normal metal armatures which rotate in a magnetic field produced by superconducting windings, provided those windings are the only superconducting component in the generator.*

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f [M1B*], [M2B*], [M3B*], [M5B*], [M6B*], [M7B*], [M9B*], [M10B*], [M15B*], [M20B*]
g [M9B1*], [M9B2*], [M15B*]

ML21 "Software" as follows:

[M-[h]] a. "Software" specially designed or modified for the "development", "production" or "use" of equipment, materiel or "software" specified in this Schedule;

b. Specific "software", other than that specified in ML21.a., as follows:

[M16D1*] 1. "Software" that is both specially designed for military use and specially designed for modelling, simulating or evaluating of military weapons systems;

2. "Software" that is both specially designed for military use and specially designed for modelling or simulating military operational scenarios;

3. "Software" for determining the effects of conventional, nuclear, chemical or biological weapons;

4. "Software" that is both specially designed for military use and specially designed for Command, Communications, Control and Intelligence (C^3I) applications or Command, Communications, Control, Computer and Intelligence (C^4I) applications;

c. "Software", not specified in ML21.a. or b., specially designed or modified to enable equipment not specified in this Schedule to perform the military functions of equipment specified in this Schedule;

d. Other "software" specially designed or modified for military use.

N.B.: *Source code for "software" is controlled in ML22.*

PL5001 Other security and para-military police goods as follows:

a. Acoustic devices represented by the manufacturers or suppliers thereof as suitable for riot control purposes, and specially designed components therefor;

b. Anti-riot and ballistic shields and specially designed components therefor;

c. Shackles designed for restraining human beings having an overall dimension including chain, when measured from the outer edge of one cuff to the outer edge of the other cuff, of between 240mm and 280mm when locked;

N.B.: *See also 1.2. of Annex III to "the torture Regulation" and article 9 of this Order.*

d. Electric–shock belts designed for restraining human beings by the administration of electric shocks having a no-load voltage not exceeding 10 000 volts;

N.B.: *See also 2.1. of Annex II to "the torture Regulation" and article 9 of this Order.*

e. Water cannon and specially designed components therefor;

f. Riot control vehicles which have been specially designed or modified to be electrified to repel boarders and components therefor specially designed or modified for that purpose;

g. Electric-shock dart guns having a no load voltage not exceeding 10,000 volts;

N.B.: *See also 2.1. of Annex III to "the torture Regulation" and article 9 of this Order.*

h. Components specially designed or modified for portable devices designed or modified for the purposes of riot control or self-protection by the administration of an electric shock (e.g., electric-shock batons, electric-shock shields, stun-guns and electric-shock dart-guns);

i. Hand-held, spiked batons.

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h [M1D*] to [M20D*]

ML22 "Technology" as follows:
[M-[i]]

a. "Technology", other than "technology" specified in ML22.b., which is "required" for the "development", "production" or "use" of goods or "software" specified in this Schedule;

b. "Technology" as follows:

1. "Technology" "required" for the design of, the assembly of components into, and the operation, maintenance and repair of complete production installations for goods specified in this Schedule, even if the components of such production installations are not specified;

2. "Technology" "required" for the "development", "production" or "use" of toxicological agents, related equipment or components specified in ML7.a. to ML7.g.;

3. "Technology" "required" for the "development", "production" or "use" of "biopolymers" or cultures of specific cells specified in ML7.h.;

4. "Technology" "required" exclusively for the incorporation of "biocatalysts", specified in ML7.i.1., into military carrier substances or military materiel.

N.B.: *See article 18 of this Order for exceptions from the controls on "technology".*

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i [M1E*] to [M20E*]

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