

# **DEPARTMENT OF ENTERPRISE, TRADE AND EMPLOYMENT**

## **EXPORT CONTROLS**

### **LIST OF MILITARY GOODS**

### **WHICH MAY NOT BE EXPORTED WITHOUT A LICENCE**

**1. SMALL ARMS**

Small arms, automatic weapons and accessories, as follows, and specially designed components therefor:

- (a) rifles, carbines, shotguns, stunguns, crossbows, revolvers, pistols, machine pistols and machine guns, except:
  - (i) muskets, rifles and carbines dated earlier than 1938;
  - (ii) reproductions of muskets, rifles and carbines dated earlier than 1890;
  - (iii) revolvers, pistols and machine guns dated earlier than 1890, and their reproductions;
- (b) smooth-bore weapons;
- (c) weapons using caseless ammunition;
- (d) silencers, telescopic sights, special gun-mountings, clips and flash suppressors for arms specified in subparagraph (a), (b) or (c) of this paragraph.

**2. LARGE CALIBRE ARMAMENT OR WEAPONS**

Large calibre armament or weapons, projectors and accessories, as follows, and specially designed components therefor:

- (a) guns, howitzers, cannon, mortars, anti-tank weapons, projectile launchers, military flame throwers, recoilless rifles and signature reduction devices therefor;
- (b) military smoke, gas and pyrotechnic projectors or generators.

**3. AMMUNITION**

Ammunition, and specially designed components therefor, for the weapons specified in paragraph 1, 2 or 19 of this Schedule.

**4. BOMBS, TORPEDOES, MINES, ROCKETS AND MISSILES**

Bombs, torpedoes, mines, rockets, missiles and accessories, as follows, and specially designed components therefor:

- (a) explosive substances, bombs, torpedoes, grenades, smoke canisters, rockets, mines, missiles, depth charges, demolition-charges, demolition-devices and demolition kits, military pyrotechnics, cartridges and simulators including smoke grenades, fire bombs, incendiary bombs, other explosive and pyrotechnic articles, missile rocket nozzles and re-entry vehicle nosetips;
- (b) equipment specially designed for the handling, control, activation, powering with one-time operational output, launching, laying, sweeping, discharging, decoying, jamming, detonation or detection of items specified in subparagraph (a) of this paragraph including mobile gas liquefying equipment capable of producing 1,000 kg or more per day of gas in liquid form; and buoyant electric conducting cable suitable for sweeping magnetic mines.

## **5. FIRE CONTROL EQUIPMENT**

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

- (a) weapon sights, bombing computers, gun laying equipment and on-board weapon control systems;
- (b) target acquisition, designation, range-finding, surveillance or tracking systems; detection, recognition or identification equipment; and sensor integration equipment.

## **6. VEHICLES**

Vehicles and related equipment, as follows, specially designed or modified for military use, and specially designed components therefor:

- (a) tanks and self-propelled guns;
- (b) armed, armoured vehicles and vehicles fitted with mounting for arms;
- (c) armoured railway trains;
- (d) half-tracks;
- (e) recovery vehicles;
- (f) carriers, tractors and trailers specially designed for towing or transporting ammunition or weapon systems and related load handling equipment;
- (g) amphibious and deep water fording vehicles;

- (h) mobile repair shops specially designed to service military equipment;
- (i) all other vehicles specially designed or modified for military use.

## 7. TOXICOLOGICAL AGENTS

Toxicological agents, tear gases, related equipment, components, materials and technology as follows:

- (a) biological agents and radioactive materials adapted for use in war to produce casualties in men or animal, degrade equipment or damage crops or the environment.
- (b) toxic chemicals and their precursors (being such chemicals and their precursors as are specified in Schedule 1 of the Annex of Chemicals to the United Nations Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and their Destruction signed by Ireland on the 14th day of January, 1993) set out in subparagraph (d) of this paragraph.
- (c) whenever reference is made in subparagraph (d) of this paragraph to groups of dialkylated chemicals, followed by a list of alkyl groups in parentheses, all chemicals possible by all possible combinations of alkyl groups listed in the parentheses shall be deemed included in that reference save where expressly provided otherwise.

- |       |                                                                                                                                                                                                          |                                               |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| (d)   | Toxic Chemicals:                                                                                                                                                                                         | Chemical Abstracts Service<br>Registry Number |
| (i)   | O-Alkyl ( $\text{C}_{10}$ , incl. cycloalkyl) alkyl<br>(Me, Et, n-Pr or i-Pr)-phosphonofluoridates                                                                                                       |                                               |
|       | including Sarin: O-Isopropyl methylphosphonofluoridate                                                                                                                                                   | (107-44-8)                                    |
|       | Soman: O-Pinacolyl methylphosphonofluoridate                                                                                                                                                             | (96-64-0)                                     |
| (ii)  | O-Alkyl ( $\text{C}_{10}$ , incl. cycloalkyl) N,N-dialkyl<br>(Me, Et, n-Pr or i-Pr) phosphoramidocyanidates                                                                                              |                                               |
|       | including Tabun: O-Ethyl N,N-dimethyl<br>phosphoramidocyanidate                                                                                                                                          | (77-81-6)                                     |
| (iii) | O-Alkyl (H or $\text{C}_{10}$ , incl. cycloalkyl) S-2-dialkyl<br>(Me, Et, n-Pr or i-Pr)-aminoethyl alkyl<br>(Me, Et, n-Pr or i-Pr) phosphonothiolates<br>and corresponding alkylated or protonated salts |                                               |

	including VX: O-Ethyl S-2-diisopropylaminoethyl methyl phosphonothiolate	(50782-69-9)
(iv)	Sulfur mustards:	
	2-Chloroethylchloromethylsulfide	(2625-76-5)
	Mustard gas: Bis(2-chloroethyl)sulfide	(505-60-2)
	Bis(2-chloroethylthio)methane	(63869-13-6)
	Sesquimustard: 1,2-Bis(2-chloroethylthio)ethane	(3563-36-8)
	1,3-Bis(2-chloroethylthio)-n-propane	(63905-10-2)
	1,4-Bis(2-chloroethylthio)-n-butane	(142868-93-7)
	1,5-Bis(2-chloroethylthio)-n-pentane	(142868-94-8)
	Bis(2-chloroethylthiomethyl)ether	(63918-90-1)
	O-Mustard: Bis(2-chloroethylthioethyl)ether	(63918-89-8)
(v)	Lewisites:	
	Lewisite 1: 2-Chlorovinylchloroarsine	(541-25-3)
	Lewisite 2: Bis(2-chlorovinyl)chloroarsine	(40334-69-8)
	Lewisite 3: Tris(2-chlorovinyl)arsine	(40334-70-1)
(vi)	Nitrogen mustards:	
	HN1: Bis(2-chloroethyl)ethylamine	(538-07-8)
	HN2: Bis(2-chloroethyl)methylamine	(51-75-2)
	HN3: Tris(2-chloroethyl)amine	(555-77-1)
Precursors:		Chemical Abstracts Service Registry Number
(i)	Alkyl (Me, Et, n-Pr or i-Pr) phosphonyldifluorides	
	including DF: Methylphosphonyldifluoride	(676-99-3)
(ii)	O-Alkyl (H or C <sub>10</sub> , including cycloalkyl) O-2-dialkyl (Me, Et, n-Pr or i-Pr)-aminoethyl alkyl (Me, Et, n-Pr or i-Pr) phosphonites and corresponding alkylated or protonated salts	
	including QL: O-Ethyl O-2-diisopropylaminoethyl methylphosphonite	(57856-11-8)
(iii)	Chlorosarin: O-Isopropyl methylphosphonochloridat	(1445-76-7)
(iv)	Chlorosoman: O-Pinacolyl methylphosphonochloridate	(7040-57-5)
(e)	chemical warfare (CW) incapacitating agents including 3-Quinuclidinyl benzilate (BZ) (CAS 6581-06-2)	

- (f) chemical warfare (CW) defoliants including:  
Buryl 2-chloro-4-fluorophenoxyacetate (LNF)  
2,4,5-trichlorophenoxyacetic acid mixed with 2,4-dichlorophenoxyacetic acid (Agent Orange)
- (g) tear gases and riot control agents including:
  - (i) bromobenzyl cyanide (CA);
  - (ii) o-Chlorobenzylidenemalononitrile (o-Chlorobenzalmalononitrile) (CS);
  - (iii) phenylacetyl chloride ( $\alpha$ -chloroacetophenone) (CN);
- (h) equipment specially designed or modified for the dissemination of the materials or agents specified in subparagraph (a) of this paragraph, and specially designed components therefor;
- (i) equipment specially designed or modified for defence against materials or agents specified in subparagraph (a) of this paragraph, and specially designed components therefor;
- (j) equipment specially designed or modified for the detection or identification of materials or agents specified in subparagraph (a) of this paragraph, and specially designed components therefor;
- (k) biopolymers specially designed or processed for the detection or identification of CW agents specified in subparagraph (a) of this paragraph, and the cultures of specific cells used to produce them;
- (l) biocatalysts for the decontamination or degradation of CW agents, and biological systems therefor, as follows:
  - (i) biocatalysts specially designed for the decontamination or degradation of CW agents specified in subparagraph (a) of this paragraph resulting from directed laboratory selection or genetic manipulation of biological systems;
  - (ii) biological systems, as follows: expression vectors, viruses or cultures of cells containing the genetic information specific to the production of biocatalysts specified in clause (i) of this subparagraph;
- (m) technology as follows:
  - (i) technology for the development, production or use of toxicological agents, related equipment or components specified in any of the preceding provisions of this paragraph;
  - (ii) technology for the development, production or use of biopolymers or cultures of specific cells specified in subparagraph (k) of this paragraph;

- (iii) technology exclusively for the incorporation of biocatalysts, specified in subparagraph (l) (i) of this paragraph, into military carrier substances or military material.

## 8. **MILITARY EXPLOSIVES**

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

- (a) substances, as follows, and mixtures thereof:
  - (i) 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;
  - (ii) 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:
    - (I) metals and mixtures thereof:
      - (A) Beryllium (CAS 7440-41-7) in particle sizes of less than 60 µm;
      - (B) Iron powder (CAS 7439-89-6) with particle size of 3 µm or less produced by reduction of iron oxide with hydrogen;
    - (II) mixtures, which contain any of the following:
      - (A) Zirconium (CAS 7440-67-7), magnesium (CAS 7439-95-4) and alloys of these in particle sizes of less than 60 µm;
      - (B) 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;
  - (iii) Perchlorates, chlorates and chromates composited with powdered metal or other high energy fuel components;
  - (iv) Nitroguanidine (NQ) (CAS 556-88-7);
  - (v) Compounds composed of fluorine and any of the following: other halogens, oxygen, nitrogen;
  - (vi) Carboranes; decaborane (CAS 17702-41-9); pentaborane and derivatives thereof;
  - (vii) 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);
  - (viii) Hexanitrostilbene (HNS) (CAS 20062-22-0);
  - (ix) Diaminotrinitrobenzene (DATB) (CAS 1630-08-6);
  - (x) Triaminotrinitrobenzene (TATB) (CAS 3058-38-6);
  - (xi) Triaminoguanidinenitrate (TAGN) (CAS 4000-16-2);
  - (xii) Titanium subhydride of stoichiometry TiH 0.65-1.68;
  - (xiii) Dinitroglycoluril (DNGU, DINGU) (CAS 55510-04-8); tetranitroglycoluril (TNGU, SORGUYL) (CAS 55510-03-7);
  - (xiv) Tetranitrobenzotriazolobenzotriazole (TACOT) (CAS 25243-36-1);
  - (xv) Diaminohexanitrobiphenyl (DIPAM) (CAS 17215-44-0);
  - (xvi) Picrylaminedinitropyridine (PYX) (CAS 38082-89-2);
  - (xvii) 3-nitro-1,2,4-triazol-5-one (NTO or ONTA) (CAS 932-64-9);
  - (xviii) 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);  
 (xix) Ammonium perchlorate (CAS 7790-98-9);  
 (xx) 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);  
 (xxi) Hydroxylammonium nitrate (HAN) (CAS 13465-08-2);  
 hydroxylammonium perchlorate (HAP) (CAS 15588-62-2);  
 (xxii) 2-(5-cyanotetrazolato) penta amine-cobalt (III) perchlorate (or CP)  
 (CAS 70247-32-4);  
 (xxiii) cis-bis (5-nitrotetrazolato) tetra amine-cobalt (III) perchlorate (or BNCP);  
 (xxiv) 7-Amino-4,6-dinitrobenzofurazane-1-oxide (ADNBF) (CAS 97096-78-1);  
 amino dinitrobenzofuroxan;  
 (xxv) 5,7-diamino-4,6-dinitrobenzofurazane-1-oxide (CAS 117907-74-1),  
 (CL-14 or diamino dinitrobenzofuroxan);  
 (xxvi) 2,4,6-trinitro-2,4,6-triazacyclohexanone (K-6 or Keto-RDX) (CAS 115029-35-1);  
 (xxvii) 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);  
 (xxviii) 1,1,3-trinitroazetidine (TNAZ) (CAS 97645-24-4);  
 (xxix) 1,4,5,8-tetranitro-1,4,5,8-tetraazadecalin (TNAD) (CAS 135877-16-6);  
 (xxx) Hexanitrohexaazaisowurtzitane (CAS 135285-90-4) (CL-20 or HNIW);  
 and chlathrates of CL-20;  
 (xxxi) Polynitrocubanes with more than four nitro groups;  
 (xxxii) Ammonium dinitramide (ADN or SR 12) (CAS 140456-78-6);  
 (xxxiii) Trinitrophenylmethylnitramine (tetryl) (CAS 479-45-8);

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

- (i) any explosive with a detonation velocity exceeding 8,700 m/s or a detonation pressure exceeding 34 GPa (340 kbar);
- (ii) other organic explosives not listed in this paragraph yielding detonation pressures of 25 GPa (250kbar) or more that will remain stable at temperatures of 523 K (250°C) or higher for periods of 5 minutes or longer;
- (iii) any other United Nations ("UN") Class 1.1 solid propellant not listed in this paragraph with a theoretical specific impulse (under standard conditions) of more than 250 s for non-metallised, or more than 270 s for aluminised compositions;
- (iv) 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;
- (v) any other gun propellants not listed in this paragraph having a force constant of more than 1,200 kJ/kg;
- (vi) any other explosive, propellant or pyrotechnic not listed in this paragraph 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
- (vii) 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:
- (i) aircraft fuels specially formulated for military purposes;
  - (ii) 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;
  - (iii) 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:
- (i) Azidomethylmethyloxetane (AMMO) and its polymers;
  - (ii) Basic copper salicylate (CAS 62320-94-9); lead salicylate (CAS 15748-73-9);
  - (iii) Bis(2,2-dinitropropyl) formal (CAS 5917-61-3) or Bis(2,2-dinitropropyl) acetal (CAS 5108-69-0);
  - (iv) Bis-(2-fluoro-2,2-dinitroethyl) formal (FEFO) (CAS 17003-79-1);
  - (v) Bis-(2-hydroxyethyl) glycolamide (BHEGA) (CAS 17409-41-5);
  - (vi) Bis(2-methyl aziridiny) methylamino phosphine oxide (Methyl BAPO) (CAS 85068-72-0);
  - (vii) Bisazidomethyloxetane and its polymers (CAS 17607-20-4);
  - (viii) Bischloromethyloxetane (BCMO) (CAS 142173-26-0);
  - (ix) Butadienenitrileoxide (BNO);
  - (x) Butanetrioltrinitrate (BTTN) (CAS 6659-60-5);
  - (xi) 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;
  - (xii) Dinitroazetidine-t-butyl salt;
  - (xiii) Energetic monomers, plasticisers and polymers containing nitro, azido, nitrate, nitraza or difluoroamino groups;
  - (xiv) Poly-2,2,3,3,4,4-hexafluoropentane-1,5-diol formal (FPF-1);
  - (xv) Poly-2,4,4,5,5,6,6-heptafluoro-2-tri-fluoromethyl-3-oxaheptane-1,7-diol formal (FPF-3);
  - (xvi) Glycidylazide Polymer (GAP) (CAS 143178-24-9) and its derivatives;
  - (xvii) Hexabenzylhexaazaisowurtzitane (HBIW) (CAS 124782-15-6);
  - (xviii) 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);
  - (xix) Superfine iron oxide (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 µm or less (CAS 1309-37-1);
  - (xx) Lead beta-resorcyate (CAS 20936-32-7);
  - (xxi) Lead stannate (CAS 12036-31-6), lead maleate (CAS 19136-34-6), lead citrate (CAS 14450-60-3);
  - (xxii) Lead-copper chelates of beta-resorcyate or salicylates (CAS 68411-07-4);
  - (xxiii) Nitratomethylmethyloxetane or poly (3-Nitratomethyl, 3-methyl oxetane); (Poly-NIMMO) (NMMO) (CAS 84051-81-0);
  - (xxiv) 3-Nitraza-1,5-pentane diisocyanate (CAS 7406-61-9);
  - (xxv) N-Methyl-p-Nitroaniline (CAS 100-15-2);
  - (xxvi) Organo-metallic coupling agents, specifically:

- (I) 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);
- (II) Titanium IV, [(2-propenolato-1) methyl, n-propanolatomethyl] butanolato-1, tris[dioctyl]pyrophosphate; or KR3538;
- (III) Titanium IV, [(2-propenolato-1)methyl, n-propanolatomethyl] butanolato-1, tris(dioctyl)phosphate;
- (xxvii) Polycyanodifluoroaminoethyleneoxide (PCDE);
- (xxviii) 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;
- (xxix) Polyglycidylnitrate or poly (nitratomethyl oxirane); (Poly-GLYN) (PGN) (CAS 27814-48-8);
- (xxx) Polynitroorthocarbonates;
- (xxxi) Propyleneimine, 2-methylaziridine (CAS 75-55-8);
- (xxxii) Tetraacetyldibenzylhexaazaisowurtzitane (TAIW);
- (xxxiii) Tetraethylenepentaamineacrylonitrile (TEPAN) (CAS 68412-45-3); cyanoethylated polyamine and its salts;
- (xxxiv) Tetraethylenepentaamineacrylonitrileglycidol (TEPANOL) (CAS 68412-46-4); cyanoethylated polyamine adducted with glycidol and its salts;
- (xxxv) Triphenyl bismuth (TPB) (CAS 603-33-8);
- (xxxvi) 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;
- (xxxvii) 1,2,3-Tris[1,2-bis(difluoroamino)ethoxy] propane (CAS 53159-39-0); tris vinoxyl propane adduct (TVOPA);
- (xxxviii) 1,3,5-trichlorobenzene (CAS 108-70-3);
- (xxxix) 1,2,4 trihydroxybutane (1,2,4-butanetriol);
- (xl) 1,3,5,7 tetraacetyl-1,3,5,7,-tetraaza cyclo-octane (TAT) (CAS 41378-98-7);
- (xli) 1,4,5,8 Tetraazadecalin (CAS 5409-42-7);
- (xlii) Low (less than 10,000) molecular weight, alcohol-functionalised, poly(epichlorohydrin); poly(epichlorohydrindiol) and triol.

## 9. **VESSELS OF WAR**

Vessels of war, special naval equipment and accessories, as follows, and specially designed components therefor:

- (a) combatant vessels and vessels (surface or underwater) specially designed or modified for offensive or defensive action, whether or not converted to non-military use, regardless of current state of repair or operating condition, and whether or not they contain weapon delivery systems or armour, and hulls or parts of hulls for such vessels;
- (b) engines, as follows:
  - (i) diesel engines specially designed for submarines with both of the following characteristics:
    - (I) a power output of 1.12 MW (1,500 hp.) or more; and

- (II) a rotary speed of 700 rev/min or more;
- (ii) electric motors specially designed for submarines having all of the following characteristics:
  - (I) a power output of more than 0.75 MW (1,000 hp.);
  - (II) quick reversing;
  - (III) liquid cooled; and
  - (IV) totally enclosed.
- (iii) non-magnetic diesel engines specially designed for military use with a power output of 37.3 kW (50 hp.) or more and with a non-magnetic content in excess of 75% of total mass;
  - (I) underwater detection devices specially designed for military use and controls thereof;
  - (II) submarine and torpedo nets;
  - (III) equipment for guidance and navigation specially designed for military use;
  - (IV) hull penetrators and connectors specially designed for military use that enable interaction with equipment external to a vessel;
  - (V) silent bearings specially designed for military use and equipment containing those bearings.

## **10. MILITARY AIRCRAFT**

Aircraft, unmanned airborne vehicles, aero-engines and aircraft equipment, related equipment and components, specially designed or modified for military use, as follows:

- (a) combat aircraft and specially designed components therefor;
- (b) other aircraft specially designed or modified for military use, including military reconnaissance, assault, military training, transporting and airdropping troops or military equipment, logistics support, and specially designed components therefor;
- (c) aero-engines specially designed or modified for military use, and specially components therefor;

(d) unmanned airborne vehicles, including remotely piloted air vehicles (RPVs), and autonomous, programmable vehicles specially designed or modified for military use and their launchers, ground support and related equipment for command and control;

(e) airborne equipment, including airborne refuelling equipment, specially designed for use with the aircraft specified in subparagraph (a) or (b) of this paragraph or the aero-engines specified in subparagraph (c) of this paragraph, and specially designed components therefor;

(f) pressure refuellers, pressure refuelling equipment, equipment specially designed to facilitate operations in confined areas and ground equipment, developed specially for aircraft specified in subparagraph (a) or (b) of this paragraph, or for aero-engines specified in subparagraph (c) of this paragraph;

(g) pressurised breathing equipment and partial pressure suits for use in "aircraft", anti-g suits, military crash helmets and protective masks, liquid oxygen converters used for aircraft or missiles, and catapults and cartridge actuated devices for emergency escape of personnel from aircraft;

(h) parachutes used for combat personnel, cargo dropping or aircraft deceleration:

- (i) parachutes for dropping of paratroopers;
- (ii) cargo parachutes;
- (iii) paragliders (drag parachutes, drogue parachutes for stabilisation and attitude control of dropping bodies, e.g., recovery capsules, ejection seats, bombs);
- (iv) drogue parachutes for use with ejection seat systems for deployment and inflation sequence regulation of emergency parachutes;
- (v) recovery parachutes for guided missiles, drones or space vehicles;
- (vi) approach parachutes and landing deceleration parachutes;
- (vii) other military parachutes;

(i) automatic piloting systems for parachuted loads; equipment specially designed or modified for military use for controlled opening jumps at any height, including oxygen equipment.

## **11. ELECTRONIC EQUIPMENT**

Electronic equipment, not referred to elsewhere in this Schedule, specially designed for military use and specially designed components therefor including:

(a) jamming and counter-jamming equipment, including electronic counter measure and electronic counter-counter measure equipment (that is to say equipment designed to introduce extraneous or erroneous signals into radar or radio communication receivers or otherwise hinder the reception, operation or effectiveness of adversary electronic receivers including their counter measure equipment);

(b) frequency agile tubes;

- (c) electronic systems or equipment designed either for surveillance and monitoring of the electro-magnetic spectrum for military intelligence or security purposes or for counteracting such surveillance and monitoring;
- (d) underwater counter measure, including acoustic and magnetic jamming and decoy, equipment designed to introduce extraneous or erroneous signals into sonar receivers;
- (e) data processing security equipment, data security equipment and transmission and signalling line security equipment, using ciphering processes;
- (f) identification, authentication and keyloader equipment and key management, manufacturing and distribution equipment.

## **12. ARMoured EQUIPMENT**

Armoured or protective equipment and constructions, as follows:

- (a) armoured plate;
- (b) combinations and constructions of metallic and non-metallic materials specially designed to provide ballistic protection for military systems;
- (c) military helmets;
- (d) body armour, flak suits and specially designed components therefor.

## **13. MILITARY TRAINING EQUIPMENT**

Specialised equipment for military training or for simulating military scenarios, specially designed components and accessories therefor.

## **14. IMAGING OR COUNTERMEASURE EQUIPMENT**

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 any of the preceding provisions of this paragraph.

## **15. FORGINGS, CASTINGS AND SEMI-FINISHED PRODUCTS**

Forgings, castings and semi-finished products specially designed for the products specified in paragraph 1, 2, 3, 4, 6, 10, 18 or 19 of this Schedule.

## **16. MISCELLANEOUS EQUIPMENT**

Miscellaneous equipment and materials, as follows, and specially designed components therefor:

- (a) self-contained diving and underwater swimming apparatus, as follows:
  - (i) closed or semi-closed circuit (rebreathing) apparatus;
  - (ii) specially designed components for use in the conversion of open-circuit apparatus to military use;
  - (iii) articles designed exclusively for military use with self-contained diving underwater swimming apparatus;
- (b) construction equipment specially designed for military use;
- (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:
  - (i) specially designed for military use;
  - (ii) incorporating means of protecting hydraulic lines against externally induced punctures caused by ballistic fragments (for example incorporating self-sealing lines) and designed to use hydraulic fluids with flash points higher than 839 K (566°C);
  - (iii) operable at altitudes exceeding 30,000 m; or
  - (iv) specially designed or rated for operating in an electro-magnetic pulse (EMP) environment;
- (f) parametric technical databases specially designed for military use with equipment specified in this Schedule.

## **17. CRYOGENIC EQUIPMENT**

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, capable of operating while in motion.

## **18. DIRECTED ENERGY WEAPON SYSTEMS**

Directed energy weapon systems, related or countermeasure equipment and test models, as follows, and specially designed components therefor:

- (a) laser systems specially designed for destruction of a target;
- (b) particle beam systems capable of destruction of a target;
- (c) high power radio-frequency systems capable of destruction of a target;
- (d) equipment specially designed for the detection or identification of, or defence against, systems specified in subparagraph (a), (b) or (c) of this paragraph;
- (e) physical test models and related test results for the systems, equipment and components specified in this paragraph.

## **19. KINETIC ENERGY WEAPON SYSTEMS**

Kinetic energy weapon systems and related equipment, as follows, and specially designed components therefor:

- (a) kinetic energy weapon systems specially designed for destruction of a target;
- (b) specially designed test and evaluation facilities and test models, including diagnostic instrumentation and targets, for dynamic testing of kinetic energy projectiles and systems.

## **20. SECURITY AND PARA-MILITARY EQUIPMENT**

Security and para-military police equipment as follows:

- (a) acoustic devices represented by the manufacturers or suppliers thereof as suitable for riot control purposes, and specialised components thereof;
- (b) anti-riot shields and components therefor;

- (c) leg-irons, shackles and gangchains, specially designed for restraining human beings;
- (d) portable anti-riot devices for administering an electric shock or an incapacitating substance, and specialised components therefor;
- (e) water cannon and components therefor;
- (f) riot control vehicles which have been specially designed or modified to be electrified to repel boarders.

## **21. SOFTWARE**

Software, as follows:

- (a) software specially designed or modified for the development, production or use of equipment or materials specified in this Schedule;
- (b) specific software, as follows:
  - (i) software specially designed for:
    - (I) modelling, simulation or evaluation of military weapon systems;
    - (II) development, monitoring, maintenance or up-dating of software embedded in military weapon systems;
    - (III) modelling or simulating military operation scenarios, not specified in paragraph 13 of this Schedule;
  - (ii) software for determining the effects of conventional, nuclear, chemical or biological warfare weapons.

## **22. EQUIPMENT FOR THE PRODUCTION OF PRODUCTS REFERRED TO IN THIS SCHEDULE**

Equipment and technology for the development, production or use of products referred to in this Schedule.

GIVEN under my Official Seal, this

day of , 1996.

Minister for Tourism and Trade

## **Explanatory Note**

(This note is not part of the Instrument and does not purport to be a legal interpretation).

The effect of this Order is to enable the Minister for Tourism and Trade to control the export of the goods indicated in the Schedule to this order.

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