# SCHEDULE 1

# PROHIBITED GOODS-MISCELLANEOUS

Category 9Propulsion Systems, Space Vehicles and Related Equipment

### **Equipment, Assemblies and Components**

9A

### 9A001

Aero gas turbine engines incorporating any of the technologies specified in head a. of entry 9E003, as follows(1):

- (a) Not certified for the specific civil aircraft for which they are intended;
- (b) Not certified for civil use by the aviation authorities in a relevant country;

Note: For the purposes of head b. of this entry, 'relevant country' means an authority in Australia, Belgium, Canada, Denmark, Eire, France, Germany, Greece, Italy, Japan, Luxembourg, Netherlands, Norway, Portugal, Spain, Turkey, United Kingdom or United States of America.

(c) Designed to cruise at speeds exceeding Mach 1.2 for more than thirty minutes.

# 9A002

Marine gas turbine engines with an ISO standard continuous power rating of 13,795kW or more and a specific fuel consumption of less than 0.243kg/kWh, and specially designed assemblies and components therefor.

# 9A003

Specially designed assemblies and components, incorporating any of the technologies specified in head a. of entry 9E003, for the following gas turbine engine propulsion systems:

- (a) Specified in entry 9A001; or
- (b) Whose design or production origins are either any country listed in Schedule 2 or are unknown to the manufacturer.

Note: This entry does not specify multiple domed combustors operating at average burner outlet temperatures equal to or less than 1,813K (1,540°C).

#### 9A004

Space launch vehicles or spacecraft (not including their payloads)(2).

(For products contained in spacecraft payloads, see the appropriate categories).

<sup>(1)</sup> See also entry 9A101.

<sup>(2)</sup> See also entry 9A104.

#### 9A005

Liquid rocket propulsion systems containing any of the systems or components specified in entry 9A006(**3**).

### 9A006

Systems or components, as follows(4), specially designed for liquid rocket propulsion systems:

- (a) Cryogenic refrigerators, flightweight dewars, cryogenic heat pipes or cryogenic systems specially designed for use in space vehicles and capable of restricting cryogenic fluid losses to less than 30% per year;
- (b) Cryogenic containers or closed—cycle refrigeration systems capable of providing temperatures of 100K (-173°C) or less for aircraft capable of sustained flight at speeds exceeding Mach 3, launch vehicles or spacecraft;
- (c) Slush hydrogen storage or transfer systems;
- (d) High pressure (exceeding 17.5MPa) turbo pumps, pump components or their associated gas generator or expander cycle turbine drive systems;
- (e) High—pressure (exceeding 10.6MPa) thrust chambers and nozzles therefor;
- (f) Propellant storage systems using the principle of capillary containment or positive expulsion (i.e., with flexible bladders).

#### 9A007

Solid rocket propulsion systems with any of the following(5):

- (a) 1. Total impulse capacity exceeding 1.1 MNs; or
  - 2. Specific impulse of 2.4kNs/kg or more when the nozzle flow is expanded to ambient sea level conditions for an adjusted chamber pressure of 7MPa;
- (b) 1. Stage mass fractions exceeding 88%; and
  - 2. Propellant solid loadings exceeding 86%;
- (c) Any of the components specified in entry 9A008; or
- (d) Insulation and propellant bonding systems using direct—bonded motor designs to provide a strong mechanical bond or a barrier to chemical migration between the solid propellant and case insulation material.

Technical Note: For the purposes of head d. of this entry, a strong mechanical bond means bond strength equal to or more than propellant strength.

## 9A008

Components, as follows(6), specially designed for solid rocket propulsion systems:

(a) Insulation and propellant bonding systems using liners to provide a strong mechanical bond or a barrier to chemical migration between the solid propellant and case insulation material;

Technical Note: For the purposes of head a. of this entry, a strong mechanical bond means bond strength equal to or more than propellant strength.

<sup>(3)</sup> See also entries 9A105 and 9A119.

<sup>(4)</sup> See also entry 9A106.

<sup>(5)</sup> See also entry 9A119.(6) See also entry 9A108.

(b) Filament—wound composite motor cases exceeding 0.61m in diameter or having structural efficiency ratios (PV/W) exceeding 25km;

Technical Note: The structural efficiency ratio (PV/W) is the burst pressure (P) multiplied by the vessel volume (V) divided by the total pressure vessel weight (W).

- (c) Nozzles with thrust levels exceeding 45kN or nozzle throat erosion rates of less than 0.075 mm/s;
- (d) Movable nozzle or secondary fluid injection thrust vector control systems capable of:
  - 1. Omni—axial movement exceeding  $\pm 5^{\circ}$ ;
  - 2. Angular vector rotations of  $20^{\circ}$ /s or more; or
  - 3. Angular vector accelerations of  $40^{\circ}/s^2$  or more.

# 9A009

Hybrid rocket propulsion systems(7) with:

- (a) Total impulse capacity exceeding 1.1MNs; or
- (b) Thrust levels exceeding 220kN in vacuum exit conditions.

# 9A010

Specially designed components or structures, for launch vehicles or launch vehicle propulsion systems, manufactured using metal matrix composite, organic composite, ceramic matrix or intermetallic reinforced materials specified in entries 1C007 or 1C010(8).

# 9A011

Ramjet, scramjet or combined cycle engines and specially designed components therefor(9).

# 9A101

Lightweight turbojet and turbofan engines (including turbocompound engines) that are small and fuel efficient and usable in missiles, other than those specified in entry 9A001.

# 9A104

Sounding rockets, capable of a range of at least 300km.

# 9A105

Liquid propellant rocket engines usable in missiles, other than those specified in entry 9A005, having a total impulse capacity of 1.1MNs or greater(10).

# 9A106

Systems or components, other than those specified in entry 9A006, usable in missiles, as follows, specially designed for liquid rocket propulsion systems:

(a) Rocket nozzles;

<sup>(7)</sup> See also entries 9A109 and 9A119.

<sup>(8)</sup> See also entries 1A002 and 9A110.

<sup>(9)</sup> See also entries 9A111 and 9A118.(10) See also entry 9A119.

(b) Thrust vector control sub—systems;

Technical Note: Examples of methods of achieving thrust vector control specified in head b. of this entry are:

- a. Flexible nozzle;
- b. Fluid or secondary gas injection;
- c. Movable engine or nozzle;
- d. Deflection of exhaust gas stream (jet vanes or probes); or
- e. Thrust tabs.
- (c) Liquid and slurry propellant (including oxidiser) control systems, and specially designed components therefor, designed or modified to operate in vibration environments of more than 10grms between 20Hz and 2,000Hz.

Note: The only servo valves and pumps specified in head c. of this entry are as follows:

- a. Servo valves designed for flow rates of 24 litres per minute or greater, at an absolute pressure of 7MPa or greater, that have an actuator response time of less than 100ms;
- b. Pumps, for liquid propellants, with shaft speeds equal to or greater than 8,000rpm or with discharge pressures equal to or greater than 7MPa.

# 9A108

Components, other than those specified in entry 9A008, usable in missiles, as follows, specially designed for solid rocket propulsion systems:

(a) Rocket motor cases, interior lining and insulation therefor;

Note: In this entry interior lining means suited for the bond interface between the solid propellant and the case or insulating liner. Usually a liquid polymer based dispersion of refractory or insulating materials, e.g., carbon filled hydroxy—terminated polybutadiene (HTPB) or other polymer with added curing agents sprayed or screeded over a case interior.

- (b) Rocket nozzles;
- (c) Thrust vector control sub—systems.

Technical Note: Examples of methods of achieving thrust vector control specified in head c. of this entry are:

- a. Flexible Nozzle;
- b. Fluid or secondary gas injection;
- c. Movable engine or nozzle;
- d. Deflection of exhaust gas stream (jet vanes or probes); or
- e. Thrust tabs.

# 9A109

Hybrid rocket motors, usable in missiles, other than those specified in entry 9A009, and specially designed components therefor(11).

# 9A110

Composite structures, laminates and manufactures thereof, other than those specified in entry 9A010, including resin impregnated fibre prepregs and metal coated fibre preforms therefor, specially

<sup>(11)</sup> See also entry 9A119.

designed for use in the systems specified in entries 9A004 or 9A104 or the subsystems specified in entries 9A005, 9A007, 9A105, 9A106, 9A108 and 9A116, made either with organic matrix or metal matrix utilising fibre or filamentary reinforcements having a specific tensile strength greater than  $7.62 \times 10^4$  m and a specific modulus greater than  $3.18 \times 10^6$  m(12).

# 9A111

Pulse jet engines, usable in missiles, and specially designed components therefor(13).

# 9A115

Launch support equipment, designed or modified for systems specified in entries 9A004 or 9A104, as follows:

- (a) Apparatus and devices for handling, control, activation or launching;
- (b) Vehicles for transport, handling, control, activation or launching.

# 9A116

Reentry vehicles, usable in missiles, and equipment designed or modified therefor, as follows:

- (a) Heat shields and components therefor fabricated of ceramic or ablative materials;
- (b) Heat sinks and components therefor fabricated of light—weight, high heat capacity materials;
- (c) Electronic equipment specially designed for reentry vehicles.

# 9A117

Staging mechanisms, separation mechanisms, and interstages, usable in missiles.

# 9A118

Devices to regulate combustion usable in engines, which are usable in missiles, specified in entries 9A011 or 9A111.

# 9A119

Individual rocket stages, usable in missiles, other than those specified in entries 9A005, 9A007, 9A009, 9A105 or 9A109.

# 9A990

The export of goods specified in this entry is only prohibited to any destination in Libya, Iran, Iraq, Syria or South Africa.

Aircraft having a maximum all up weight of 680 kg or more.

# 9A991

Aircraft or steerable parachutes having a maximum all up weight of not more than 680kg.

<sup>(12)</sup> See also entry 1A002.

<sup>(13)</sup> See also entries 9A011 and 9A118.

# 9A992

The export of goods specified in this entry is only prohibited to any destination in Libya, Iran, Iraq, Syria or South Africa.

Equipment or components specially designed for civil aircraft, other than those specified in Group 1 of Part III of this Schedule or elsewhere in this Group;

except:

Equipment and components specially designed for civil aircraft, where the aircraft type can be shown to have first flown before 1 January 1950.

# **Test, Inspection and Production Equipment**

9B

# 9B001

Specially designed equipment, tooling or fixtures, as follows, for manufacturing or measuring gas turbine blades, vanes or tip shroud castings:

- (a) Automated equipment using non-mechanical methods for measuring airfoil wall thickness;
- (b) Tooling, fixtures or measuring equipment for the laser, water jet or ECM/EDM hole drilling processes specified in head c. of entry 9E003;
- (c) Directional solidification or single crystal casting equipment;
- (d) Ceramic cores or shells;
- (e) Ceramic core manufacturing equipment or tools;
- (f) Ceramic core leaching equipment;
- (g) Ceramic shell wax pattern preparation equipment;
- (h) Ceramic shell burn out or firing equipment.

# 9B002

On—line (real time) control systems, instrumentation (including sensors) or automated data acquisition and processing equipment, specially designed for the development of gas turbine engines, assemblies or components incorporating technologies specified in head a. of entry 9E003.

# 9B003

Equipment specially designed for the production or test of gas turbine brush seals designed to operate at tip speeds exceeding 335m/s, and specially designed parts or accessories therefor.

#### 9B004

Tools, dies or fixtures for the solid state joining of gas turbine superalloy or titanium components.

# 9B005

On—line (real time) control systems, instrumentation (including sensors) or automated data acquisition and processing equipment, specially designed for use with the following wind tunnels or devices:

(a) Wind tunnels designed for speeds of Mach 1.2 or more; except:

those specially designed for educational purposes and having a test section size (measured laterally) of less than 250mm;

Technical Note: Test section size: the diameter of the circle, or the side of a square, or the longest side of a rectangle, at the largest test section location.

- (b) Devices for simulating flow—environments at speeds exceeding Mach 5, including hot—shot tunnels, plasma arc tunnels, shock tubes, shock tunnels, gas tunnels and light gas guns;
- (c) Wind tunnels or devices, other than two—dimensional sections, capable of simulating Reynolds number flows exceeding  $25 \times 10^6$ .

#### 9B006

Specially designed acoustic vibration test equipment capable of producing sound pressure levels of 160dB or more (referenced to 20 micropascals) with a rated output of 4kW or more at a test cell temperature exceeding 1,273.K (1,000°C), and specially designed transducers, strain gauges, accelerometers, thermocouples or quartz heaters therefor.

#### 9B007

Equipment specially designed for inspecting the integrity of rocket motors using non—destructive test (NDT) techniques other than planar X—ray or basic physical or chemical analysis.

N.B.:For Radiographic equipment, see sub-head e.5. of entry 3A001.

#### 9B008

Transducers specially designed for the direct measurement of the wall skin friction of the test flow with a stagnation temperature exceeding 833K (560°C).

### 9B009

Tooling specially designed for producing turbine engine powder metallurgy rotor components capable of operating at stress levels of 60% of ultimate tensile strength (UTS) or more and metal temperatures of 873K (600°C) or more.

## 9B105

Wind tunnels for speeds of Mach 0.9 or more, usable for missiles and their subsystems.

#### 9B106

Environmental chambers and anechoic chambers, as follows:

- (a) Environmental chambers capable of simulating the following flight conditions:
  - 1. Vibration environments of 10g RMS or greater between 20Hz and 2,000Hz and imparting forces of 5kN or greater; and
  - 2. Altitudes of 15,000m or greater; or
  - 3. Temperature of at least  $223K (-50^{\circ}C)$  to  $398K (+125^{\circ}C)$ ;
- (b) Anechoic chambers capable of simulating the following flight conditions:
  - 1. Acoustic environments at an overall sound pressure level of 140dB or greater (referenced to 20microPa) or with a rated power output of 4kW or greater; and
  - 2. Altitudes of 15,000m or greater; or

3. Temperature of at least 223K ( $-50^{\circ}C$ ) to 398K ( $+125^{\circ}C$ ).

# 9B115

Specially designed production equipment for the systems, sub—systems and components specified in entries 9A005 to 9A009, 9A011, 9A101, 9A105, 9A106, 9A108, 9A109, 9A111, 9A116 to 9A119.

#### 9B116

Specially designed production facilities for the systems, sub—systems, and components specified in entries 9A004 to 9A009, 9A011, 9A101, 9A104 to 9A106, 9A108, 9A109, 9A111, 9A116 to 9A119.

#### 9B117

Test benches and test stands for solid or liquid propellant rockets or rocket motors, having either of the following characteristics:

- (a) The capacity to handle more than 90kN of thrust; or
- (b) Capable of simultaneously measuring the three axial thrust components.

# Materials

9C None.

#### Software

9D

#### 9D001

Software required for the development of goods or technology specified in sub—categories 9A, 9B or entry 9E003.

### 9D002

Software required for the production of goods specified in sub-categories 9A or 9B.

# 9D003

Software required for the use of full authority digital electronic engine controls (FADEC) for propulsion systems specified in sub—category 9A or equipment specified in sub—category 9B, as follows:

- (a) Software in digital electronic controls for propulsion systems, aerospace test facilities or air breathing aero—engine test facilities;
- (b) Fault—tolerant software used in FADEC systems for propulsion systems and associated test facilities.

9D004 Other software, as follows:

- (a) Software specially designed for vibration test equipment, other than that specified in entry 2D101, using real time digital controls with individual exciters (thrusters) with a maximum thrust exceeding 100kN;
- (b) 2D or 3D viscous software validated with wind tunnel or flight test data required for detailed engine flow modelling;

- (c) Software required for the development or production of real time full authority electronic test facilities for engines or components specified in sub—category 9A;
- (d) Software for testing aero gas turbine engines, assemblies or components, specially designed to collect, reduce and analyse data in real time, and capable of feedback control, including the dynamic adjustment of test articles or test conditions, as the test is in progress;
- (e) Software specially designed to control directional solidification or single crystal casting;
- (f) Software in source code, object code or machine code required for the use of active compensating systems for rotor blade tip clearance control.

Note: Head f. of this entry does not specify software embedded in non—specified equipment or required for maintenance activities associated with the calibration or repair or updates to the active compensating clearance control system.

# 9D101

Software specially designed for the use of goods specified in entries 9B105, 9B106, 9B116 or 9B117.

# 9D103

Software specially designed for modelling, simulation or design integration of missiles and their sub—systems.

Note: Software specified in this entry remains controlled when combined with specially designed hardware specified in entry 4A102.

# Technology

9E

# 9E001

Technology required for the development of goods specified in head c. of entry 9A001, or entries 9A004 to 9A011, or sub—Categories 9B or 9D.

# 9E002

Technology required for the production of goods specified in head c. of entry 9A001, or entries 9A004 to 9A011 or sub—Category 9B.

Notes:

(1) Development or production technology specified in sub—Category 9E for gas turbine engines remains specified when used as use technology for repair, rebuild and overhaul.

(2) This entry does not include technical data, drawings or documentation for maintenance activities directly associated with calibration, removal or replacement of damaged or unserviceable line replaceable units, including replacement of whole engines or engine modules.

(For technology for the repair of specified structures, laminates or materials, see head f. of entry 1E002.)

# 9E003

The export of goods specified in this entry is only prohibited to any destination in any country listed in Schedule 2.

Other technology, as follows:

- (a) Technology required for the development or production of the following gas turbine engine components or systems:
  - 1. Directionally solidified gas turbine blades, vanes or tip shrouds rated to operate at gas path temperatures exceeding 1,593 K (1,320°C);
  - 2. Single crystal blades, vanes or tip shrouds;
  - 3. Multiple domed combustors operating at average burner outlet temperatures exceeding 1,643 K (1,370°C), or combustors incorporating thermally decoupled combustion liners, non-metallic liners or non-metallic shells;
  - 4. Components manufactured from organic composite materials designed to operate above 588 K (315°C), or from metal matrix composite, ceramic matrix, intermetallic or intermetallic reinforced materials specified in entries 1A002 or 1C007;
  - 5. Uncooled turbine blades, vanes, tip—shrouds or other components designed to operate at gas path temperatures of 1,323 K (1,050°C) or more;
  - 6. Cooled turbine blades, vanes or tip—shrouds, other than those described insub heads a.1. and a.2. of this entry, exposed to gas path temperatures of 1,643 K (1,370°C) or more;
  - 7. Airfoil—to—disk blade combinations using solid state joining;
  - Gas turbine engine components using diffusion bonding technology specified in head b. of entry 2E003;
  - 9. Damage tolerant gas turbine engine rotating components using powder metallurgy materials specified in head b. of entry 1C002;
  - 10. FADEC for gas turbine and combined cycle engines and their related diagnostic components, sensors and specially designed components;
  - 11. Adjustable flow path geometry and associated control systems for:
- (a) Gas generator turbines;
- (b) Fan or power turbines;
- (c) Propelling nozzles;

Notes:

- 1. Adjustable flow path geometry and associated control systems do not include inlet guide vanes, variable pitch fans, variable stators or bleed valves for compressors.
- 2. Sub—head a.11. of this entry does not specify development or production technology for adjustable flow path geometry for reverse thrust.
- 3. Rotor blade tip clearance control systems employing active compensating casing technology limited to a design and development data base;
- 4. Gas bearings for gas turbine engine rotor assemblies;
- 5. Wide chord hollow fan blades without part—span support;
- (b) Technology required for the development or production of:
  - 1. Wind tunnel aero—models equipped with non—intrusive sensors capable of transmitting data from the sensors to the data acquisition system;
  - 2. Composite propeller blades or propfans capable of absorbing more than2,000 kW at flight speeds exceeding Mach 0.55;
- (c) Technology required for the development or production of gas turbine engine components using laser, water jet or ECM/EDM hole drilling processes to produce holes with:

- 1. a. Depths more than four times their diameter;
  - b. Diameters less than 0.76 mm; and
  - c. Incidence angles equal to or less than 25°; or
- 2. a. Depths more than five times their diameter;
  - b. Diameters less than 0.4 mm; and
  - c. Incidence angles of more than 25°;
  - d. Technical Note: For the purposes of head c. of this entry, incidence angle is measured from a plane tangential to the airfoil surface at the point where the hole axis enters the airfoil surface.
- (d) Technology required for the development or production of helicopter power transfer systems or tilt rotor or tilt wing aircraft power transfer systems:
  - 1. Capable of loss—of—lubrication operation for 30 minutes or more; or
  - 2. Having an input power-to-weight ratio equal to or more than 8.87 kW/kg;
- (e) 1. Technology for the development or production of reciprocating diesel engine ground vehicle propulsion systems having all of the following:
  - a. A box volume of  $1 \cdot 2 \text{ m}^3$  or less;
  - b. An overall power output of more than 750 kW based on 80/1269/EEC(14) or ISO 2534; and
  - c. A power density of more than 700 kW/m<sup>3</sup> of box volume;

Technical Note: Box volume is the product of three perpendicular dimensions measured in the following way:

Length: The length of the crankshaft from front flange to flywheel face;

Width: The widest of the following:

- (a) The outside dimension from valve cover to valve cover;
- (b) The dimensions of the outside edges of the cylinder heads; or
- (c) The diameter of the flywheel housing;

Height: The largest of the following:

- (a) The dimension of the crankshaft centre—line to the top plane of the valve cover (or cylinder head) plus twice the stroke; or
- (b) The diameter of the flywheel housing.
- (e) 1. Technology required for the production of specially designed components, as follows, for high output diesel engines:
- (a) Technology required for the production of engine systems having all of the following components employing ceramics materials specified in entry 1C007:
  - 1. Cylinder liners;
  - 2. Pistons;
  - 3. Cylinder heads; and
  - 4. One or more other components (including exhaust ports, turbochargers, valve guides, valve assemblies or insulated fuel injectors);

<sup>(14)</sup> OJ L375, Vol23, 31.12.80, p.46.

- (b) Technology required for the production of turbocharger systems with single—stage compressors having all of the following:
  - 1. Operating at pressure ratios of 4:1 or higher;
  - 2. A mass flow in the range from 30 to 130 kg per minute; and
  - 3. Variable flow area capability within the compressor or turbine sections;
- (c) Technology required for the production of fuel injection systems with a specially designed multifuel (e.g., diesel or jet fuel) capability covering a viscosity range from diesel fuel (2·5 cSt at 310·8 K (37·8°C)) down to gasoline fuel (0·5 cSt at 310·8 K (37·8°C)), having both of the following:
  - 1. Injection amount in excess of 230 mm<sup>3</sup> per injection per cylinder; and
  - 2. Specially designed electronic control features for switching governor characteristics automatically depending on fuel property to provide the same torque characteristics by using the appropriate sensors;
- (e) 1. Technology required for the development or production of high output diesel engines for solid, gas phase or liquid film (or combinations thereof) cylinder wall lubrication, permitting operation to temperatures exceeding 723 K (450°C), measured on the cylinder wall at the top limit of travel of the top ring of the piston.
  - 1. Technical Note: High output diesel engines are diesel engines with a specified brake mean effective pressure of 1.8 MPa or more at a speed of 2,300 r.p.m., provided the rated speed is 2,300 r.p.m. or more.

# 9E101

Technology required for the development or production of goods specified in entries 9A101, 9A104 to 9A106, 9A108 to 9A111 or 9A115 to 9A119.

# 9E102

Technology required for the use of goods specified in entries 9A004 to 9A011, 9A101, 9A104 to 9A106, 9A108 to 9A111, 9A115 to 9A119, 9B105, 9B106, 9B115, 9B116, 9B117, 9D101 or 9D103.

# 9E990

The export of goods specified in this entry is only prohibited to any destination in Libya, Iran, Iraq, Syria or South Africa.

Technology required for the development, production or use of goods specified in entry 9A990.

# 9E991

Technology required for the development, production or use of goods specified in entry 9A991.

# 9E992

The export of goods specified in this entry is only prohibited to any destination in Libya, Iran, Iraq, Syria or South Africa.

Technology required for the development, production or use of goods specified in entry 9A992.

# INDEX TO PART III

Absorbers, hair type	1C001a.
Absorbers, non-planar and planar	1C001a.
Absorbers, paint	1C001a.
Accelerometers	7A001
	7A101
Acoustic beam forming software	6D003a.
Acoustic devices for riot control purposes	PL5001
Acoustic hydrophone arrays, towed	6A001a.2.b.
Acoustic location and object detection systems	6A001a.1.b.
Acoustic positioning systems	6A001a.1.d.
Acoustic projectors	6A001a.1.c.
Acoustic systems	6A001
Acoustic transducers (hydrophones)	6A001a.2.a.
Acoustic vibration test equipment	9B006
Acoustic wave devices	3A001c.
Acoustic—optic signal processing devices	3A001c.3.
Active acoustic systems	6A001a.1.
Active flight control system technology	7E004b.
Active magnetic bearing systems	2A005
Actively cooled mirrors	6A005f.1.
Adaptive control software	2D002
ADC's, analogue-to-digital converters	3A001a.5.
	3A101a.
	4A003j.
Aero engines, military	ML10
Aero gas turbine engines	9A001
Aerodynamic isotope separation plant	B10a.
Aerodynamic separation element housings	B10b.3.
Aerosol challenge testing chambers	2B352
African swine fever virus	1C352a.
Aiming devices	ML5
Air independent power systems	8A002j.
Air traffic control software	6D003d.
Airborne equipment	ML10b.
Aircraft components	ML10

	9A992
Aircraft, civil	9A990
	9A991
Aircraft, military	ML10
Alexandrite	6C005b.
Alexandrite lasers	6A005c.1.
Align and expose equipment	3B007
Alignment equipment for disk drives	4B003
Alkylphenylene ethers	1C006
Alloyed materials	1C002
Alpha—emitting radionuclides	1C236
Altimeters	7A006
	7A106
Aluminides of titanium	1C002
Aluminium alloys	1C002
	1C202
Aluminium metal—organic compounds	3C003
Aluminium oxide powder	A70
Aluminium powder	ML8
	1C002
	1C115
Americium	A20
Ammonia crackers	B40
Ammonia synthesis converters	1B227
Ammonia—hydrogen exchange plant or towers	B40
Ammonium hydrogen fluoride	1C350
Ammunition	ML3
	PL5021
Amorphous alloy strips	1C003
Amphibious vehicles	ML6
Amplifiers, microwave	3A001b.4.
Analogue computers, ruggedised	4A101
Analogue instrumentation tape recorders	3A002a.1.
Analogue—to—digital converters	3A001a.5.
	3A101a.

	4A003j.
Anechoic chambers	9B106
Angular measuring instruments	2B006
Animal pathogens	1C352
Anti—g suits	ML10
Anti—riot shields and devices	PL5001
Antibodies	ML7
Antimony hydrides	3C004
Approach parachutes	ML10
Arc remelt and casting furnaces	2B227
Argon ion lasers	6A005a.6.
	6A205a.
Armed vehicles	ML6
Armoured plate	ML13
Armoured railway trains	ML6
Armoured vehicles	ML6
Aromatic polyamide—imides	1C008
Aromatic polyetherimides	1C008
Aromatic polyimides	1C008
Array processors	4A003
Array processors, microcircuits	3A001a.3.
Arsenic hydrides	3C004
Arsenic trichloride	1C350
Artificial Intelligence	4D003
Asynchronous transfer mode equipment	5A001c.10.
Atomic frequency standards	3A002g.
Atomic transition solid state lasers	6A005c.2.
Attitude control equipment	7A116
Attitude Heading Reference Systems (AHRS), source code	7D002
Autoclave regulation technology	1E103
Autoclaves, for gaseous diffusion or centrifuge cascades	B20
Automatic piloting systems for parachuted loads	ML10
Avian influenza virus	1C352

Avionics EMI protection	7E102
Bacillus anthracis	1C351
Bacteria	ML7
	1C351
	1C352
Balancing machines, centrifugal multiplane	2B229
Ball bearings	2A001
	2A002Ba
llistic protection for military systems	ML13
Barium metal vapour lasers	6A005a.2.d.
Batch mixers	1B115
Bathymetric survey systems	6A001a.1.b.
Batteries	3A001e.1.
Beam steering mirrors	6A004a.4.
Beamforming techniques	6A001a.2.c.2.
Bearing components	2A007
Bearings, anti-friction	2A
Bearings, ball	2A001
	2A002
Bearings, components for	2A001
Bearings, fabric lined	2A006
Bearings, for gas centrifuge rotor tubes	B10b.2.
Bearings, gas—lubricated foil	2A004
Bearings, magnetic	2A005
Bearings, roller	2A001
	2A002
Bearings, silent	ML9
Bearings, tapered roller	2A003
Bellows pumps	2B350
Bellows valves	2B350
Bellows—forming dies	2B228
Bellows—forming mandrels	2B228
Benzilic acid	1C350
Beryllium metal, alloys and compounds	1C230
Beryllium/beryllium substrate blanks	6C004d.

Biocatalysts	ML7
Biological agents adapted for use in war	ML7
Biological containment facilities	2B352
Biological isolators	2B352
Biological systems	ML7
Biopolymers	ML7
Bioreactors	2B352
Bismaleimides	1C008
Bismuth	1C229
Bit error rate (BER) test equipment	5B001b.
Blank ammunition	ML3
Blanks of beryllium beryllium (Be/Be) deposited material	6C004d.
Blowers	B10b.1.
Bluetongue virus	1C352
Body armour	ML13
Bombing computers	ML5
Bombs	ML4
Boring machines	2B001
Boron and boron compounds	1C225
Botulinum toxins	1C351
Boules of electro-optic materials	6C004b.
Brayton cycle engine	8A002j.
Bridges, telecommunications	5A001b.
Brucella abortus	1C351
Brucella melitensis	1C351
Brucella suis	1C351
Brush seal equipment	9B003
Bulk acoustic wave devices	3A001c.2.
Bulk fluoride compounds	6C004e.1.
Bulk fluoride glass	6C004e.2.
Bullet—proof or bullet—resistant clothing	ML13
Butacene	1C115
CAD software for ICs/semiconductor devices	3D003
Cadmium mercury telluride (CdHgTe) crystals and epitaxial wafers	6C002b.

Cadmium telluride (CdTe) crystals and epitaxial wafers	6C002b.
Calcium	1C227
Californium	A20
Cameras	6A003
	6A203
Cameras, electronic framing type	6A003a.4.
	6A203b.2.
Cameras, electronic streak type	6A003a.3.
	6A203b.1.
Cameras, imaging	6A003b.
	6A203c.
Cameras, mechanical	6A003a.
	6A203a.1.
Cameras, military	ML15
Cameras, radiation hardened TV	6A203c.
Cameras, scanning and scanning camera systems	6A003b.2.
Cameras, underwater	8A002e.
Cameras, video using solid state sensors	6A003b.1.
Canned drive pumps	2B350
Cannons	ML2
Capacitors	3A001e.2.
Capacitors	3A201a.
Carbines	ML1
Carbon dioxide (CO <sub>2</sub> ) lasers	6A005a.4.
Carbon fibre	1C010
	1C210
Carbon monoxide (CO) lasers	6A005a.3.
Carbon or alumina fibre conversion equipment	1B001d.
	1B101d.
Carbon—carbon materials	1A102
Carboxy-terminated polybutadiene (CTPB)	1C115
Casting furnaces	2B227
Castings, military	ML16
	PL5020

Catalysts, platinized	1A225
Catalytic burners	B40
Cathode ray tubes, for oscilloscopes	3A202
Cathodes for electronic tubes	3A001b.1.c.
Cathodic arc deposition production equipment	2B005
Cellular radio equipment, software	5D001c.
Cellular radio systems technology	5E001b.7.
Cellular radio, hand—off	5A001c.7.
Cellular radio, switches	5A001c.8.
Centralised network control	5A001d.
Centrifugal decanters	2B352
Centrifugal multiplane balancing machines	2B229
Centrifugal separators	2B352
Ceramic base materials	1C007a.Ce
ramic composite materials	1C007
	1C107
Ceramic core manufacturing equipment	9B001
Ceramic materials	1C007
Ceramic shell manufacturing equipment	9B001
Ceramic shells for blades and vanes	9B001
Ceramic-matrix composite materials	1C007
Certification software	5D002c.2.
Chambers, aerosol challenge testing	2B352
Chemical exchange isotope separation plant	B10a.
Chemical incinerators	2B350
Chemical lasers	6A005a.5.
Chemical manufacturing equipment	2B350
Chemical manufacturing facilities	2B350
Chemical storage tanks and containers	2B350
Chemical vapour deposition (CVD) production equipment	2B005
Chemical vapour deposition equipment, fibre production	1B001d.
	1B101d.
Chemical vapour deposition equipment, metal —organic	3B001

Chemical vapour deposition equipment, plasma enhanced	3B004
Chemicals	ML7
	1C350
Chemostats	2B352
Chikungunya virus	1C351
Chlamydia psittaci	1C351
Chlorine trifluoride (C1F <sub>3</sub> )	1C238
2—Chloroethanol	1C350
Chlorofluorocarbons	1C006
Cinema recording cameras	6A003a.1.
Clips	ML1
Closed—cycle refrigeration systems	9A006
Clostridium botulinum	1C351
Clostridium perfringens toxins	1C351
CNC numerical control units	2B001
CNC unit printed circuit boards	2B009
Coating equipment for magnetic media	4B001
Coating equipment for magneto-optical media	4B001
Coating technology, for non—electronic substrates	2E003d.
Coatings for reduced visibility	1C101
Cold traps for gaseous diffusion or centrifuge cascades	B20
Cold—cathode tubes	3A228
Colour centre lasers	6A005c.1.
Colour monitors	4A003i.
Combat aircraft	ML10
Combatant vessels	ML9
Combined cycle engines	9A011
Combustion regulation devices	9A118
Command, Comms, Control and Intelligence (C <sub>3</sub> I) software	ML24
Common channel signalling	5A001c.1.
Communication channel controllers	5A001b.3.
Communications cable systems	5A002g.

Compasses, gyro—astro	7A004
	7A104
Compilers	4D003c.
Components, electronic	3A001
Composite and laminate manufactures for rockets	9A110
Composite components/structures for rockets	9A010
Composite structures	1A202
Composite structures or laminates	1A002
Compound rotary tables	2B009
Compound semiconductor integrated circuits	3A001a.11.
Compressors	B10b.
Compressors, hydrogen sulphide gas	B40
Computer—aided—design software for ICs/ semiconductor devices	3D003
Computers, analogue	4A101
Computers, digital	4A101
Computers, digital and related equipment	4A003
Computers, hybrid	4A002
	4A102
Computers, information security	4A001b.
Computers, neural	4A004b.
Computers, optical	4A004c.
Computers, radiation hardened/extended operating temperature	4A001a.
Computers, systolic array	4A004a.
Condensers	2B350
Conductive polymers	1C001
Congo—Crimean haemorrhagic fever virus	1C351
Conotoxin	1C351
Construction equipment, military	ML17
Contactors	B10b.4.
	B40
Containment facilities	2B352
Containers, chemical	2B350
Continuous mixers	1B115

Contrarotating propellers	8A002o.
Control rods, for nuclear reactors	B50
Control systems for gas turbine development	9B002
Control systems for wind tunnels	9B005
Controllable—pitch propellers	8A002o.
Controlled atmosphere melting and casting furnaces	2B227
Controlled environment induction furnaces	2B226
Controllers, machine tool	2B001
Controllers, robot	2B007
Converter integrated circuits	3A001a.5.
Cooling equipment for molten uranium	B10b.6.
Copper metal vapour lasers	6A005a.2.a.
Coprocessors	3A001a.3.
Correlation-velocity sonar log equipment	6A001c.
Counter—current solvent extractors	B70
Countermeasure equipment	ML15
Coxiella burnetii	1C351
Critically safe tanks	B70
Cross—flow filtration equipment	2B352
Crossed—field amplifier tubes	3A001b.1.
Crucibles	2A225
Crucibles, for molten uranium	B10b.6.
Cryocoolers for optical sensors	6A002d.
Cryogenic containers	9A006
Cryogenic distillation columns	1B228
Cryogenic distillation towers and cold boxes	B40
Cryogenic equipment, military	ML20
Cryogenic refrigerators	9A006
Cryptanalytic equipment or devices	5A002b.
Cryptography equipment or devices	5A002a.
	5A002c.
CTPB, Carboxy-terminated polybutadiene	1C115
Curium	A20
Custom integrated circuits	3A001a.10.

Cutting tool, diamond point	2B008
CVD equipment	1B001d.
	1B101d.
	2B005
	3B004
CVD Furnaces	2B104
DAC's, digital—to—analogue converters	3A001a.5.
	4A003j.
Damping or flotation fluids	1C006
Data acquisition for wind tunnels	9B005
Data acquisition systems for gas turbine development	9B002
Data communication protocol analyzers	5B001b.
Data communication simulators	5B001b.
Data communication testers	5B001b.
Datagram packets	5A001c.5.
Decanters, centrifugal	2B352
Defence equipment for toxicological agents	ML7
Deformable mirrors	6A004a.1.
Degassing equipment	2B350
Demolition—charges	ML4
Demolition—devices	ML4
Demolition—kits	ML4
Dengue fever virus	1C351
Depleted uranium	A10
Depth charges	ML4
Depth sounders	6A001a.1.
Desublimers for gaseous diffusion or centrifuge cascades	B20
Detection devices, military underwater	ML9
Detection or location systems	6A001a.1.b.
Detectors, optical	6A002a.
Detectors, radiation hardened	6A102
Detonators	ML8
	3A232
Deuterated paraffins	A40

Deuterium	A40
Deuterium compounds, mixtures and solutions	A40
Deuterium compounds, production plant	B40
Deuterium fluoride (DF) lasers	6A005a.5.b.
Deuterium fluoride—carbon dioxide (DF— CO <sub>2</sub> ) lasers	6A005a.5.c.2.
Deuterium, production plant	B40
Development equipment, military	PL5017
DF: Methyl phosphonyldifluoride	ML7
Diaphragm pumps	2B350
Diaphragm valves	2B350
Dibromotetrafluoroethane	1C006
Diesel cycle engine, air independent	8A002j.
Diesel engines, non-magnetic	ML9
Diesel engines, specially designed for submarines	ML9
Diesel engines, technology for high output type	9E003e.
Diethyl ethylphosphonate	1C350
Diethyl methylphosphonite	1C350
Diethyl phosphite	1C350
Diethyl—N, N—dimethylphosphoramidate	1C350
Diethylaminoethanol	1C350
Diffusion bonding technology for metal working	2E003
Diffusion bonding tools, dies, moulds or fixtures	1B003
Digital computers for speech or image recognition	4A003a.
Digital computers, assemblies and related equipment	4A003
Digital computers, fault tolerance	4A003b.
Digital computers, ruggedised	4A101
Digital differential analysers, ruggedised	4A101
Digital exchanges	5A001c.
Digital instrumentation tape data recorders	3A002a.3.
Digital video tape recorders	3A002a.2.

Digital—to—analogue converter integrated circuits	3A001a.5.
Digital—to—analogue converters	4A003j.
Digitally controlled radio receiver	5A001b.9.
Diisopropylamine	1C350
Dimensional inspection equipment	2B006
Dimensional measuring equipment	2B006
Dimethyl ethylphosphonate	1C350
Dimethyl methylphosphonate	1C350
Dimethyl phosphite	1C350
Dimethylamine	1C350
Dimethylamine hydrochloride	1C350
Direct view imaging equipment	6A002c.
Directed energy weapons (DEW) systems	ML23
Direction finding equipment	7A103
Direction finding, passive sensors	7A115
Directional solidification casting equipment	9B001
Directional solidification casting software	9D004e.
Disk drives	4A003e.
Disk head materials	4C001
Disk head production or alignment equipment	4B003
Displays	4A003i.
Disruption apparatus and devices	PL5006
Dissemination equipment for toxicological agents	ML7
Dissolvers	B70
Distillation columns	2B350
Distillation columns, cryogenic	1B228
Distillation equipment	B40
Distillation equipment for the purification of $UF_6$	B30
Distillation towers, packings	1A226
Diving apparatus	ML17
Doppler laser interferometers (DLIs)	6A225
Double—seal valves	2B350
Double—seal pumps	2B350

Drogue parachutes	ML10
Dry etching equipment	3B003
Dummy ammunition	ML3
Dye lasers	6A005d.
	6A205
Dynamic adaptive routing	5A001c.4.
Dynamic signal analysers	3A002c.
Dynamic wavefront (phase) measuring equipment	6A005g.
Eastern equine encephalitis virus	1C351
Ebola virus	1C351
Eddy current test equipment for nuclear reactors	B100
EDM's	2B001
EEPROMs	3A001a.4.
Electric motors for submarines	ML9
Electric propulsion engines	8A002o.
Electrical discharge machines	2B001
Electrical erasable programmable read—only memories (EEPROMs)	3A001a.4.
Electrical pulsers	PL5024
Electrically driven explosive detonators	3A232
Electrified riot control vehicles	PL5001
Electro—optic materials	6C004
Electro—optical integrated circuits	3A001a.6.
Electrochemical reduction cells	B10b.4.
Electrolysis cells, for lithium amalgams	B90
Electrolytic cells for fluorine production	1B225
Electromagnetic interference protection technology, avionics	7E102
Electromagnetic isotope separators	B10a.
	1B226
Electromagnetic pulse (EMP) protection technology, avionics	7E102
Electromagnetic radiation sensors using optical fibres	6A002d.3.a.
Electromagnets, superconductive	3A001e.3.

	3A201b.
Electron beam cutting machines	2B001
Electron beam equipment for mask making/ semiconductor devices	3B007
Electron beam guns	B10b.6.
Electron beam melting furnaces	2B227
Electron beam physical vapour deposition	2B005c.
Electron beam resist materials	3C002
Electron beam systems, for probing semiconductor devices	3B009
Electron bombardment mass spectrometers	3A233
Electron cyclotron resonance (ECR) CVD equipment	3B004
Electron cyclotron resonance (ECR) dry etching equipment	3B003
Electronic cameras	6A003a.5.
Electronic computers	4A001
Electronic computers, information security features	4A001b.
Electronic controls, for nuclear reactors	B50
Electronic equipment, military	ML11
Electronic framing cameras	6A203b.2.
Electronic streak cameras	6A003a.3.
Electronic streak cameras and streak tubes	6A203b.1.
Electronic vacuum tubes	3A001b.
Emulators for microcircuits	3A002h.
Encrypted software	4D003e.
	5D002
Encryption	5A2
End effectors, robot	ML17
	2B007
	2B207
Enriched uranium	A20
Enrichment plant	B10
Environmental chambers	9B106
Enzymes	ML7
Epitaxial growth equipment	3B001

Erasable optical disk drives	4A003e.1.
o—Ethyl—2—diisopropylaminoethyl methylphosphonite	ML7
Ethyl phosphinyl dichloride	1C350
Ethyl phosphinyl difluoride	1C350
Ethyl phosphonyl dichloride	1C350
Ethyl phosphonyl difluoride	1C350
Evaporators for concentrated lithium hydroxide solution	B90
Exchanges	5A001
Excimer lasers	6A005a.1.
Expander cycle turbine drive systems	9A006
Expert systems software	4D003
Expert systems, numerical control technology	2E003a.
Exploding bridge (EB) detonators	3A232
Exploding bridge wire (EBW) detonators	3A232
Exploding foil initiators (EFI)	3A232
Explosive detection equipment	PL5006
Explosive devices, apparatus and devices for	PL5006
	3A990
Explosives	ML8
	1C239
	1C991
Fabric lined bearings	2A006
FADEC software	9D003
Fast select packets	5A001c.6.
Fault tolerant computers	4A003b.
Fermenters	2B352
Fibre optic cable	5A001e.
Fibre optic components	5A001e.2.
Fibre optic hull penetrators or connectors	8A002c.
Fibre optic image inverters	6A002a.2.b.1.
Fibre optic magnetometers	6A006e.
Fibrous or filamentary material production	1B001
	1B101
Fibrous or filamentary materials	1C010

	1C210
Field engineer equipment	ML17
Field programmable gate arrays	3A001a.7.
Field programmable logic arrays	3A001a.8.
Filament winding machines	1B001a.
	1B101a.
	1B201
Filament—wound composite motor cases	9A008
Filling equipment, remotely controlled	2B350
Film type integrated circuits	3A001a.
Filters, optical opacity switch	6A004d.3.
Fingers, for surface effect vessels	8A002k.
Fire bombs	ML4a.
Fire control equipment	ML5
Firing sets	3A229
Fissile materials	A20
Flack suits	ML13
Flame throwers	ML2
Flame towers, UF <sub>6</sub> production	B30
Flash discharge X—ray generators	3A201c.
Flash discharge X—ray systems	3A001e.5.
Flash suppressors	ML1
Flexible disc media	4C001
Flexible manufacturing unit software	2D002
Flexible Nozzles	9A106
	9A108
Flexible sensors for hydrophones	6A001a.2.a.1.
Flexible waveguides	3A001b.7.
Flight control system technology	7E004b.
Flight control systems	7A116
Flight instrument systems, integrated	7A103
Flight management system, integration technology for	7E104
Flightweight dewars	9A006
Flow—forming machines	2B115

	2B215
Fluid bed reactors, UF <sub>6</sub> production	B30
Fluid or secondary gas injection thrust systems	9A108
Fluoride fibres and cable	6A004f.
Fluorinated compounds	1C009
Fluorinated compounds, components	1A001
Fluorinated hydrocarbon polymers	A70
Fluorinated phosphazene elastomers	1C009
Fluorinated polyimides	1C009
Fluorinated silicone fluids	1C006
Fluorinating equipment, UF <sub>5</sub> to UF <sub>6</sub>	B10b.7.
Fluorination and hydrofluorination screw, $UF_6$ production	B30
Fluorine	1C990
Fluorine production, electrolysis cells	1C225
Fluorophosphate glass	6C004f.
Fluxgate magnetometers technology	6E003c.
Fly cutting machines	2B002
Fly—by—wire systems	7A116
Foam mirror structures, lightweight	6A004a.3.
Focal plane arrays, 2D and linear non—space —qualified	6A002a.3.
Foil bearings	2A004
Foot and mouth disease virus	1C352
Forgings, military	ML16
	PL5020
Framing cameras, electronic type	6A203b.2.
	6A003a.4.
Framing cameras, mechanical	6A203a.1.
Framing tubes and solid state imaging devices	6A203b.3.
Francisella tularensis	1C351
Free electron laser magnet wigglers	6B005a.1.
Free electron laser photo injectors	6B005a.2.
Free electron lasers	6A005e.
Freeze drying equipment, steam sterilisable	2B352

Frequency agility (frequency hopping) radio equipment	5A001b.8.
Frequency agility systems	5A002e.
Frequency changers	B10b.2.
	3A225
Frequency standards, atomic	3A002g.
Frequency synthesised signal generators	3A002d.
Frequency synthesiser assemblies	3A002b.
Fuel cell air independent power systems	8A002j.
Fuel element chopping or shredding machines	B70
Fuel element fabrication plant, for nuclear reactors	B60
Fuel element handling equipment, for nuclear reactors	B50
Fuels	ML8
	1C115
Furnaces, arc	2B227
Furnaces, casting	2B227
Furnaces,	CVD2B104
Furnaces, electron beam	2B227
Furnaces, induction	2B226
Furnaces, plasma atomisation	2B227
Fused silica, low optical absorption types	6C004f.
GaAs photocathodes	6A002a.2.b.3.
GaInAs photocathodes	6A002a.2.b.3.
Gallium III/V compounds	3C001
Gallium metal—organic compounds	3C003
Gangchains	PL5001
Gas centrifuge isotope separation plant	B10a.
Gas centrifuge plant auxiliary equipment	B20
Gas centrifuge rotor assembly equipment	2B228
Gas centrifuge rotor balancing equipment	2B229
Gas centrifuges	B10b.2.
Gas discharge and ion lasers	6A005a.6.
Gas generator turbine drive system	9A006
Gas lasers	6A005a.

Gas projectors or generators	ML2
Gas turbine blade and vane manufacturing equipment	9B001
Gas turbine brush seal equipment	9B003
Gas turbine development control system	9B002
Gas turbine engine assemblies and components	ML10
	9A003
Gas turbine engine component technology	9E003
Gas turbine engine development	9B002
Gas turbine engines, aero	ML10
	9A001
Gas turbine engines, marine	9A002
Gas turbine test/flow modelling software	9D004
Gas—lubricated foil bearings	2A004
Gaseous diffusion barriers and housings	B10b.1.
Gaseous diffusion isotope separation plant	B10a.
Gaseous diffusion plant auxiliary equipment	B20
Gate silicon intensifier target (SIT) videcon tubes	6A203b.3.b.
Gateways and bridges	5A001b.
Gear cutting machines	2B003
Gear finishing machines	2B003
Gear grinding machines	2B003
Gear honing machines	2B003
Genetically-modified microorganisms	1C353
Geophones, terrestrial	6A001b.
Germanium	3C001
Gimbals, for optical control	6A004e.3.
Glass	6C004f.
Glass fibre	1C210
Glass fibre, for optical communications	5A001e.
Glass preforms, for optical fibres	5C001
Global positioning systems (GPS) equipment	7A005
	7A105
Glow discharge mass spectrometers (GDMS)	3A233
Goat pox virus	1C352

Gold (Au) metal vapour lasers	6A005a.2.b.
Gradiometers	6A006
Gradiometers, gravity	6A007c.
Graphic displays	4A003i.
Graphics accelerators	4A003h.
Graphics coprocessors	4A003h.
Graphite heat exchangers	2B350
Graphite materials	1C107
Graphite, nuclear—grade	A50
Graphites	1C107
Gravity gradiometer software	6D003c.
Gravity gradiometers	6A007c.
	6A107
Gravity meters (gravimeters)	6A007
	6A107
Gravity meters (gravimeters) software	6D003c.
Grenades	ML4
Grinding machines	2B001
Ground support vehicles	9A115
Guidance sets	7A117
Guidance sets, production facilities for	7B103
Gun laying equipment	ML5
Gun—carriers	ML6
Guns	ML1
	ML2
Gyro—astro compasses	7A004
	7A104
Gyros	7A002
	7A102
Gyroscope manufacture	7B003
Hafnium fluoride glass	6C004f.
Hafnium metal, alloys and compounds	1C231
Hair type absorbers	1C001a.
Half—tracks	ML6
Hantaan virus	1C351

Heading sensors, for towed hydrophones	6A001a.2.b.4.
Heat exchangers	B10b.
	B50
	2B350
Heat shields	9A116
Heat sinks	9A116
Heat source materials	A30
Heavy water	A40
Heavy water, production plant	B40
Helicopter components and systems	9A992
Helicopter power transfer system technology	9E003d.
Helicopter system development technology	7E004c.
Helicopters	ML10
	9A990
	9A991
Helium	1C232
Hetero—epitaxial materials	3C001
High birefringence optical fibres	6A002d.3.b.
High energy storage capacitors	3A001e.2.
	3A201a.
High power electron beam guns	B10b.6.
High pressure nozzles	9A006
High pressure thrust chambers	9A006
High pressure turbo pumps, pump components	9A006
High—speed cameras	6A003
	6A203
High—velocity gun systems	2B232
HIPS	2B004
	2B104
	2B204
Hollow cylinder centrifugal balancing machines	2B229
Hopping code generation	5A002e.
Hot isostatic presses	2B004
	2B104

	2B204
Hovercraft	8A001
Howitzers	ML2
Hull connectors	ML9
Hull penetrators	ML9
Human pathogens	1C351
Hybrid computers	4A001
	4A002
	4A102
Hybrid integrated circuits	3A001a.
Hybrid rocket motors	9A009
	9A109
Hybrid rocket propulsion systems	9A009
	9A119
Hydraulic fluids	1C006
Hydraulic pressing technology (metal working)	2E003b.
Hydraulic stretch—forming technology for airframes	2E003c.
Hydrocarbon oils	1C006
Hydroclave regulation technology	1E103
Hydrofoil vessels	8A001h.
Hydrofoils	8A002m.
Hydrogen distillation plant	B40
Hydrogen fluoride	1C350
Hydrogen fluoride (HF) lasers	6A005a.5.a.
Hydrogen isotope storage and purification systems	1B231
Hydrogen sulphide—water exchange plant	B40
Hydrophone arrays, towed acoustic	6A001a.2.b.
Hydrophones	6A001a.2.a.
3—Hydroxy—1—methylpiperidine	1C350
Hydroxy—terminated polybutadiene (HTPB)	1C115
III/V compounds of gallium or indium	3C001
Image enhancement equipment	4A003g.
Image intensifier equipment, military	ML15
Image intensifier tubes	6A002a.2.

Image processing equipment, military	ML15
Imaging cameras	6A003b.
	6A203c.
Imaging devices	6A203b.3.
Imaging equipment, for visible and infrared spectrum	6A002c.
Imaging equipment, military	ML15
Imaging sensors, multispectral	6A002b.
Imaging systems, underwater	8A002f.
Impregnated cathodes for electronic tubes	3A001b.1.
Improvised explosive devices, apparatus and devices for	PL5006
Incendiary bombs	ML4a.
Incinerators, chemical	2B350
Indium III/V compounds	3C001
Indium metal—organic compounds	3C003
Induction coil magnetometers	6A006b.
Induction furnace, inert gas	2B226
Induction furnace, vacuum	2B226
Inductively coupled plasma mass spectrometers (ICP/MS)	3A233
Inert gas environment induction furnaces	2B226
Inertial equipment for attitude, guidance or control	7A003
Inertial navigation equipment	7A003
	7A103
Inertial navigation system software	7D102
Inertial sensors using optical fibres	6A002d.3.a.
Information security production equipment	5B002
Information security software	4D003e.
	5D002
Information security systems	5A002
Infrared absorption analysers	B40
Infrared or thermal imaging equipment	ML15
Injectors for use with liquid propelling charges	ML2
Input/output control units for computers	4A003f.

Instrumentation cameras	6A003a.
	6A203
Instrumentation for gas turbine development	9B002
Instrumentation for wind tunnels	9B005
Insulation	9A108
Insulation bonding systems	9A008
Integrated circuits	3A001a.
	3A001b.2.
Integrated flight instrument systems	7A103
Integrated Services Digital Network (ISDN) equipment	5A001c.2.
Integrated Services Digital Network (ISDN) technology	5E001b.8.
Integration technology for flight management systems	7E104
Interior linings	9A108
Interlacing machines	1B001c.
	1B101c.
Intermediate amplifier equipment	5A001b.
Interstages for rockets	9A117
Intrinsic magnetic gradiometers	6A006f.
Inverse synthetic aperture radar (ISAR)	6A008d.
Ion beam equipment for mask making/ semiconductor devices	3B007
Ion beam systems, for masks or semiconductor devices	3B005
Ion beams resist materials	3C002
Ion implantation equipment	3B002
Ion implantation production equipment	2B005
Ion plating production equipment	2B005
Ion—exchange isotope separation plant	B10a.
Ion—exchange processing	B70
Ion—exchange resins	B10b.5.
Isolators, biological	2B352
Isophorone diisocyanate (IPDI)	1C115
Isostatic presses	2B004
	2B104

	2B204
Isotope separation, lithium	B90
Isotope separators	B10
	1B226
Japanese encephalitis virus	1C351
Jet probes	9A106
	9A108
Jet vanes	9A106
	9A108
Josephson effect devices	6A006h.
Joule—Thomson self—regulating minicoolers	6A002d.2.b.
Junin virus	1C351
Kerr or pockel cell electro-optical shuttering	6A203b.3.c.
Kinetic energy weapon systems	ML26
Krypton ion lasers	6A005a.6.
Krytron tubes	3A228
Laminates	1A002
	1A202
Laminates for propulsion systems	9A110
Laminates for space vehicles	9A110
Land—based gravity meters production equipment	6B007
Large calibre armaments	ML2
Laser beam cutting machines	2B001
Laser beam equipment for mask making/ semiconductor devices	3B007
Laser beam systems, for probing semiconductor devices	3B009
Laser communication technology	5E001b.2.
Laser diagnostic equipment	6A005g.
Laser diodes	6A005b.
Laser isotopic separation plant	B10a.
Laser measuring instruments	2B006
Laser radar	6A108
Laser radar or Light Detection and Ranging (LIDAR) equipment	6A008j.

Laser ring gyro test equipment	7B002
Laser weapon systems	ML23
Lasers	ML23
	6A005
	6A205
Lassa fever virus	1C351
Lathes	2B001
Launch support equipment	9A115
Launch vehicle composite components/ structures	9A010
Launch vehicles	9A004
	9A115
Leg—irons	PL5001
Lidar equipment	6A008j.
Lift fans, for surface effect vessels	8A0021.
Light gas gun	ML26
	2B232
Light systems, underwater	8A002g.
Lightweight composite or foam mirror structures	6A004a.3.
Lightweight monolithic mirrors	6A004a.2.
Lightweight turbofan engines	9A101
Lightweight turbojet engines	9A101
Line terminating equipment	5A001b.
Linear focal plane arrays	6A002a.
Linear measuring instruments	2B006
Linear position feedback units	2B008
Linear—angular inspection equipment	2B006
Liquid jet cutting machines	2B001
Liquid lasers	6A005d.
Liquid oxidisers	1C115
Liquid propellant control systems	9A106
Liquid propellant rocket engines	9A005
	9A105
Liquid rocket propulsion system components	9A006
	9A106

Liquid rocket propulsion systems	9A005
	9A105
	9A119
Liquid—liquid exchange columns, for lithium amalgams	B90
Lithium isotope separation equipment	B90
Lithium metal, hydrides or alloys	1C233
Lithography equipment	3B007
Local area network interfaces	4A003k.
Location and object detection systems, acoustic	6A001a.1.b.
Lubricating materials	1C006
Lymphocytic choriomeningitis virus	1C351
Lyssa virus	1C352
Machine guns	ML1
Machine pistols	ML1
Machine tool assemblies	2B008
Machine tool components	2B008
Machine tool controller technology	2E003a.
Machine tool controllers	2B001
Machine tool cutting tools	2B008
Machine tool feedback units	2B008
Machine tool slides	2B008
Machine tool spindles	2B008
Machine tools for generating optical quality surfaces	2B001
	2B002
Machine tools for grinding	2B001
Machine tools for milling	2B001
Machine tools for turning	2B001
Machining centres	2B001
Machupo virus	1C351
Magnesium alloys or powders	1C002
Magnesium, high purity	1C228
Magnetic bearings	2A005
Magnetic compensation systems for magnetic sensors	6A006g.

Magnetic compensation systems software	6D003b.
Magnetic confinement CVD equipment	3B004
Magnetic confinement dry etching equipment	3B003
Magnetic disk drive technology	4E002c.
Magnetic drive pumps	2B350
Magnetic gradiometers	6A006d.
Magnetic media test equipment	4B002
Magnetic metals	1C003
Magnetic suspension bearings	B10b.2.
Magnetic/magneto—optical disk drives	4A003e.1.
Magnetic/magneto-optical disk head materials	4C001
Magnetic/magneto—optical media coating equipment	4B001
Magnetometer systems	6A006
Magnetometers	6A006
Magnetostrictive alloys	1C003
Main storage, computer	4A003e.
Manganin gauges	6A226
Manipulators	2B225
Manipulators, for submersibles	8A002i.
Manned, tethered submersible vehicles	8A001a.
Manned, untethered submersible vehicles	8A001b.
Maraging steel	1C116
	1C216
Marburg virus	1C351
Marine acoustic systems	6A001a.
Marine gas turbine engines	9A002
Masks for integrated circuits	3B008
Mass spectrometers/ion sources	B20
Mass spectrometers and ion sources	3A233
Materials for reduced reflectivity	ML17
Materials for reduced reflectivity	1C101
Mechanical cameras	6A003a.3.
Mechanical framing cameras	6A203a.1.
Mechanical high speed cameras	6A003a.2.

	6A203a.
Mechanical streak cameras	6A203a.2.
Media access units	5A001b.
Melting furnaces	2B227
Memory integrated circuits	3A001a.4.
Mercury cadmium telluride (CdHgTe) crystals and epitaxial wafers	6C002b.
Metal alloy powder	1C002
Metal coated fibre preforms for propulsion systems	9A110
Metal coated fibre preforms for space vehicles	9A110
Metal organic chemical vapour deposition (MOCVD) reactors	3B001
Metal powder fuels	1C115
Metal powder production equipment	1B002
Metal vapour lasers	6A005a.2.
Metal working process technology	2E003b.
Metal—organic compounds	3C003
Metering devices for use with liquid propelling charges	ML2
Methyl benzilate	1C350
Methyl phosphinyl dichloride	1C350
Methyl phosphinyl difluoride	1C350
Methyl phosphonyl dichloride	1C350
Methyl phosphonyl difluoride	ML7
Microchannel plates, for image intensifier tubes	6A002a.2.
Microcomputer microcircuits	3A001a.3.
Microcontroller microcircuits	3A001a.3.
Microcystins (Cyanginosins)	1C351
Microfluorination ion source	3A233
Microorganisms	1C353
Microprocessor microcircuits	3A001a.3.
Microwave assemblies	3A001b.6.
Microwave devices	3A001b.
Microwave integrated circuits	3A001b.2.
Microwave modules	3A001b.2.

Microwave solid state amplifiers	3A001b.4.
Microwave test receivers	3A002f.
Microwave transistors	3A001b.3.
Microwave weapon systems	ML23
Military aero—engines	ML10
Military aircraft	ML10
Military cartridges	ML4
Military development equipment	PL5017
Military electronic equipment	ML11
Military engines and power transfer systems	ML6
Military flame throwers	ML2
Military half—tracks	ML6
Military helicopters	ML10
Military helmets	ML10
	ML13
Military mobile repair shops	ML6
Military production equipment	ML18
Military pyrotechnics	ML4
Military simulation equipment	ML14
Military simulators	ML4
Military smoke projectors or generators	ML2
Military training equipment	ML14
Military type armed or armoured vehicles	ML6
Military underwater detection devices	ML9
Military vehicles and components	ML6
Military weapon systems software	ML24
Millimetre wave devices	3A001b.
Milling machines	2B001
Mines	ML4
Mirror assemblies/segments, for space assembly	6A004c.3.
Mirror control equipment	6A004e.
Mirror positioning gimbals	6A004e.3.
Mirror structures, lightweight foam or composite type	6A004a.3.
Mirrors, actively cooled	6A005f.1.

Mirrors, beam steering	6A004a.4.
Mirrors, optical	6A004a.
	6A005f.2.
Missiles	ML4
Mixers, batch and continuous	1B115
Mobile repair shops, military	ML6
Modems	4A003k.
	5A001b.
Molecular beam epitaxial growth equipment using gas sources	3B001
Molecular beam mass spectrometers	3A233
Molecular pumps	B(10)b.2.
Molybdenum and alloys	1C117
Monitoring systems, toxic gas	2B351
Monitors, designed as computer VDU's	4A003i.
Monkey pox virus	1C351
Monolithic integrated circuits	3A001a.
Mortars	ML2
Motion control boards	2B001
Motor stators	B(10)b.2.
Movable engines	9A106
	9A108
Movable nozzles	9A008
	9A106
	9A108
Multi—chamber central wafer handling systems	3B006
Multichip integrated circuits	3A001a.
Multilevel security equipment	5A002f.
Multiplex equipment	5A001b.
Multipoint initiation systems	3A232
Multispectral imaging sensors	6A002b.
Multistage light gas gun systems	ML26
	2B232
Mycoplasma mycoides	1C352
N,N—Diisopropyl—(Beta)—amino ethanol	1C350

N,N—Diisopropyl—(Beta)—aminoethane thiol	1C350
N,N—Diisopropyl—(Beta)—aminoethyl chloride	1C350
N,N—Diisopropyl—(beta)—aminoethyl chloride hydrochloride	1C350
Natural uranium	A10
Naval equipment	ML9
Neodymium glass lasers	6A005c.2.
Neodymium—doped lasers	6A005c.2.
Neptunium—237	A30
Network access controllers	4A003k.
	5A001b.3.
Network analysers	3A002e.
Neural computers	4A004b.
Neural network integrated circuits	3A001a.9.
Neutron generators	3A231
Newcastle disease virus	1C352
Nickel alloys or powders	1C002
Nickel powder	A60
Niobium alloys or powders	1C002
2—Nitrodiphenylamine	1C115
Noise reduction systems, for vessels	8A002o.
Non-destructive inspection equipment	1B001f.
Non—fluorinated polymeric substances	1C008
Non—fluorinated polymeric substances, manufactures of	1A003
Non—linear optical materials	6C004b.3.
Non-magnetic diesel engines	ML9
Non—tunable solid state lasers	6A005c.2.
Nozzles, aerodynamic isotope separation	B10b.3.
Nozzles, pyrolitic deposition	1B116
Nozzles, rocket	9A006
	9A008
	9A106
	9A108
Nuclear reactors and reactor components	B50

Nuclear reactors and reactor components

Numerical control software	2D002
Numerical control technology	2E003a.
Numerical control units	2B001
Numerically controlled machine tools	2B
Object detection or location systems	6A001a.1.b.
Ocean salvage systems	8A001e.
On-board weapon control systems	ML5
Operating system development tools and compilers	4D003c.
Operating system software	4D003
Optical components for lasers	6A005f.
Optical components, space—qualified	6A004c.
Optical components, zinc selenide or zinc sulphide	6A004b.
Optical computers	4A003c.
Optical control equipment	6A004e.
Optical detectors	6A102
Optical detectors and sensors	6A002
Optical disk drives	4A003e.1.
Optical equipment	6A005g.
Optical fabrication technologies	6E003a.2.
Optical fibre	5A001e.1.
Optical fibre cable	5A001e.
Optical fibre cable, fluoride fibre	6A004f.
Optical fibre cable/accessories for underwater use	5A001e.3.
Optical fibre characterisation equipment	5B001
Optical fibre connectors	5A001e.
Optical fibre couplers	5A001e.
Optical fibre manufacturing equipment	5B001
Optical fibre preforms	5C001
Optical fibre preforms, fluoride fibres	6C004h.
Optical fibre preforms, high birefringence fibres	6A002c.
Optical fibre sensing elements, for hydrophones	6A001a.2.a.2.
Optical fibre, components and accessories	5A001e.2.

Optical fibre, fluoride	6A004f.
Optical fibre, high birefringence	6A002d.3.
Optical fibre, sensing	6A002d.3.
Optical filters	6A004d.
Optical integrated circuits	3A001a.6.
Optical materials, with non—linear characteristics	6C004b.3.
Optical mirrors	6A005f.2.
Optical mirrors (reflectors)	6A004a.
Optical opacity switches (filters)	6A004d.3.
Optical sensors	6A002
	6A102
Optical sensors using optical fibres	6A002d.3a.
Optical surface coating/treatment technology	6E003a.1.
Optical switching equipment	5A001c.9.
Optics	6A004
Oscilloscopes	3A202
Oxygen Iodine (O <sub>2</sub> —I) laser	6A005a.5.
PABX's	5A001c.
Packet switching equipment	5A001c.8.
Para—hydrogen Raman shifters	6A205e.
Parachutes	ML10
Paragliders	ML10
Particle beam weapon systems	ML23
Passive acoustic systems	6A001a.2.
Passive sensors for direction finding	7A115
Pasteurella pseudotuberculosis var pestis (Yersinia pestis)	1C351
Pathogens	ML7
	1C351
	1C352
	1C353
PCM testers	5B001b.
Peste des petits ruminants virus	1C352
Phased array antennae	5A001f.
Phased array mirror control equipment	6A004e.4.

Phenylene	1C006
Phosphate glass	6C004f.
Phosphorus hydrides	3C004
Phosphorus oxychloride	1C350
Phosphorus pentachloride	1C350
Phosphorus pentasulphide	1C350
Phosphorus trichloride	1C350
Photocathodes of GaAs or GaInAs	6A002a.2.b.
Photodiodes, single and multi—element semiconductor type	6A002a.4.
Photographic still cameras, underwater	8A002e.
Photomultiplier tubes	6A202
Phototransistors, single—element and multi— element	6A002a.4.
Photovoltaic arrays, space qualified and radiation hardened	3A001e.1.
Piezoelectric polymers	1A001
Piezoelectric sensing elements, for hydrophones	6A001a.2.a.
Pinacolone	1C350
Pinacolyl alcohol	1C350
Pistols	ML1
PLA's	3A001a.8.
Planar absorbers	1C001a.
Plasma atomisation furnaces	2B227
Plasma dry etching equipment	3B003
Plasma enhanced CVD equipment	3B004
Plasma isotope separation plant	B10a.
Platinized catalysts	1A225
Plutonium	A20
Plutonium—238	A30
Pneumatic tyre casings	ML6
Polyphenylene—vinylene	1C001c.
Polythienylene—vinylene	1C001c.
Polyamide—imides	1C008
Polyaniline	1C001c.

Polyarylene ether ketones	1C008
Polyarylene ketones	1C008
Polyarylene sulphides	1C008
Polybiphenylenethersulphone	1C008
Polybromotrifluoroethylene	1C006
Polybutadiene—acrylic acid (PBAA)	1C115
Polybutadiene—acrylic acid—acrylonitrile (PBAN)	1C115
Polycarbosilazanes	1C007
Polychlorotrifluoroethylene	1C006
Polydiorganosilanes	1C007
Polyether ether ketone (PEEK)	1C008
Polyether ketone (PEK)	1C008
Polyether ketone ether ketone ketone (PEKEKK)	1C008
Polyether ketone ketone (PEKK)	1C008
Polyetherimides	1C008
Polyimides	1C008
Polyimides, fluorinated	1C009
Polymeric substances, fluorinated	1C009
Polymeric substances, fluorinated, components of	1A001
Polymeric substances, for propellants	1C115
Polymeric substances, non-fluorinated	1C008
Polymeric substances, non—fluorinated, manufactures of	1A003
Polymers, piezoelectric	1A001
Polypyrrole	1C001c.
Polysilazanes	1C007
Polythiophene	1C001c.
Porcine enterovirus type	91C352
Porcine herpes virus (Aujeszky's disease)	1C352
Porous nickel metal	A60
Portable anti—riot devices	PL5001
Positioning equipment	7A005
	7A105

Positioning systems, acoustic	6A001a.1.d.
Positive resists	3C002
Post—flight processing software	6D103
Potassium bifluoride	1C350
Potassium cyanide	1C350
Potassium fluoride	1C350
Potassium titanyl arsenate (KTA)	6C004b.1.
Powder metallurgy manufacturing equipment	9B009
Power generating equipment	B80
	PL5029
Power supplies, direct current high power	3A226
Power supplies, direct current high—voltage	3A227
Power transmission shaft systems, marine	8A002o.
Precision tracking systems, usable for missiles	6A108b.
Preforms, of fibrous or filamentary materials	1C010
	9A110
Preforms, of glass for fluoride fibres	6C004h.
Preforms, of glass for high birefringence optical fibres	6C002
Preforms, of glass for optical fibres	5C001
Prepreg production equipment	1B001e.
	1B101e.
Prepregs, of fibrous or filamentary materials	1C010
	9A110
Presses, isostatic	2B004
	2B104
	2B204
Pressure measuring instruments	2B230
Pressure refuellers	ML10
Pressure sensors	6A226
Pressure suits	ML10
Pressure tubes, for fuel elements and primary coolant	B50
Pressure vessels, for nuclear reactors	B50
Primary cells	3A001e.1.
Printed circuit boards, machine tool	2B009

Private automatic exchanges	5A001c.
Process control instrumentation, for reprocessing plant	B70
Product and tails collector systems, uranium vapour	B10b.
Product and tails stations	B20
Production equipment for propulsion systems and components	9B115
Production equipment for reentry vehicles	9B115
Production equipment, military	ML18
Production facilities for reentry vehicles	9B116
Production facilities; rockets, propulsion systems and components	9B116
Production technology, military	ML18
Programmable logic arrays	3A001a.8.
Programme proof and validation software	4D003a.
Projectile launchers	ML2
Projectiles	ML3
	PL5021
Projection telescopes, for laser diagnostics	6A005g.4.
Projectors, acoustic	6A001a.1.c.
Propellant bonding systems	9A008
Propellant control systems	9A106
Propellant production equipment	1B115
Propellant storage systems	9A006
Propellants	ML8
Propellants for spacecraft	1C115
Propeller blades or propfans composite technology	9E003b.
Propellers	8A002o.
Propulsion equipment, nuclear	B80
Propulsion system composite components/ structures	9A010
	9A110
Propulsion system, rocket	9A005
	9A007
	9A009

	9A119
Propulsion system test, inspection, production software	9D101
Protocol analysers	5B001b.
Proximity focused image intensifier tubes	6A203b.3.a.
Pseudomonas mallei	1C351
Pseudomonas pseudomallei	1C351
Pulse generators, high—current for controlled detonators	3A229
Pulse generators, high—speed	3A230
Pulse jet engines	9A111
Pulse radar cross—section measurement systems	6B008
Pulsed electron accelerators	3A201c.
Pumpjet propulsion systems	8A002p.
Pumps, bellows	2B350
Pumps, canned drive	2B350
Pumps, diaphragm	2B350
Pumps, double—seal	2B350
Pumps, for liquid propellants	9A106
Pumps, for lithium amalgams	B90
Pumps, for nuclear reactor coolant	B50
Pumps, for potassium amide in liquid ammonia1	B230
Pumps, magnetic drive	2B350
Pumps, molecular	B10b.2.
Pumps, submersible stage recirculation	B40
Pumps, vacuum	2B231
Pyrolitic deposition nozzles	1B116
Pyrolitic deposition systems	2B104
Pyrolitic deposition technology	9E103
Pyrolized carbon—carbon materials	1A102
Pyrolysis equipment	2B104
Pyrolysis equipment software	2D101
Pyrolysis process control equipment	2B104
Pyrotechnic flare signals, military	ML4a.

Pyrotechnic projectors or generators	ML2
Pyrotechnics	ML4
	ML8
Q—switched lasers	6A005c.2.
QL:o—Ethyl—2—di—isopropylamino ethyl methylphosphonite	ML7
Quadrature amplitude modulation equipment	5A001a.6.
Quartz crystals	PL5026
Quartz pressure transducers	6A226b.
3—Quinuclidinol	1C350
3—Quinuclidone	1C350
Radar cross section measurement systems	6B108
Radar systems	6A008
	6A108
Radiation hardened detectors	6A102
Radiation hardened integrated circuits	3A001a.1.
Radiation hardened, computers	4A001a.2.
Radiation sensitive optical fibres	6A002d.3.
Radiation shielding windows	1A227
Radiation—hardened TV cameras	6A203c.
Radio equipment (transmitters, receivers and transceivers)	5A001b.
Radio frequency ion excitation coils	B10b.8.
Radio transmission media simulators/channel estimators	5B001b.
Radioactive materials adapted for use in war	ML7
Radiographic equipment	3A101b.
Radium—226	1C237
Radome design software	6D003d.
Radomes	PL5019
RAM disks	4A003e.2.
Ram type electrical discharge machines	2B001
Raman shift lasers	6A205e.
Ramjet engines	9A011
Range instrumentation radars	6A108b.2.
Range—finding systems	ML5

Rankine cycle engine	8A002j.
Reactor vessels, chemical	2B350
Reactors, nuclear	B50
Receptors	ML7
Rechargeable cells	3A001e.1.
Reciprocating diesel engine, technology	9E003e.1.
Reciprocating engines	ML10
Recoilless rifles	ML2
Recorders, military	ML15
Recording equipment	3A002a.
Recovery parachutes	ML10
Recovery vehicles	ML6
Reentry vehicles	9A116
Reflectance measuring equipment	6B004
Reflectivity reducing materials	ML17
	1C101
Reflectometers	7B102
Refrigeration units, hydrogen or helium	1B231
Refuellers, pressure	ML10
Refuelling apparatus and devices	PL5006
Remote manipulators	2B225
Remotely operated filling equipment, chemical	2B350
Remotely piloted air vehicles (RPVs)	ML10
Repeater/regenerator equipment, telecommunications	5A001b.
Reprocessing plant, nuclear fuel	B70
Resaturated pyrolized materials	1A102
Resin impregnated fibre prepregs for propulsion systems	9A110
Resin impregnated fibre prepregs for space systems	9A110
Resist coated substrates	3C002
Resist materials	3C002
Reticles for integrated circuits	3B008
Revolvers	ML1
Ricin	1C351

Rickettsiae	1C351
Rickettsia prowasecki	1C351
Rickettsia quintana	1C351
Rickettsia rickettsii	1C351
Rifles	ML1
Rift Valley fever virus	1C351
Rigid magnetic media test equipment	4B002
Rinderpest virus	1C352
Ring laser gyro mirror characterizing equipment	7B002
Riot control agents	ML7
Riot control vehicles and equipment	PL5001
Robot controllers	ML17
	2B007
Robot end—effectors	2B007
	2B207
Robots	ML17
	2B007
	2B207
Robots, for underwater use	8A002h.
Rocket launchers, military	ML2a.
Rocket modelling, simulation and integration software	9D103
Rocket motor cases	9A008
	9A108
Rocket motor inspection equipment	9B007
Rocket motor insulation	9A008
	9A108
Rocket motors, liquid	9A005
	9A105
Rocket motors, solid	9A007
Rocket motors, hybrid	9A009
	9A109
Rocket nozzles	9A006
	9A008
	9A106

	9A108
Rocket stages	9A005
	9A007
	9A009
	9A119
Rockets	ML4
	9A004
	9A104
Roller bearings	2A001
	2A002
	2A003
Rotary position feedback units	2B008
Rotor assemblies, gas centrifuge	B10b.2.
Rotor assembly equipment	2B228
Rotor centrifugal balancing machines	2B229
Rotor straightening equipment	2B228
Rotor tube cylinders and components, gas centrifuge	B10b.2.
Routers	5A001c.8.
Ruby lasers	6A005c.2.a.
Russian Spring—Summer encephalitis virus	1C351
Salmonella typhi	1C351
Salvage systems, ocean	8A001e.
Satellites	9A004
Saxitoxin	1C351
Scanning cameras and systems	6A003b.2.
Scramjet engines	9A011
Seals, for surface effect vessels	8A002k.
Secondary cells	3A001e.1.
Security and para—military police equipment	PL5001
Security equipment, information	5A002
Segmented mirrors, for assembly in space	6A004c.3.
Self—propelled guns	ML6
Semi—finished products, military	ML16
	PL5020

Semiconductor lasers	6A005b.
Semiconductor test equipment	3B009
Sensing elements, hydrophone	6A001a.2.a.
Sensors, multispectral imaging	6A002b.
Sensors, optical	6A002
Sensors, radiation hardened	6A102
Separation mechanisms for rockets	9A117
Separation nozzles, isotope separation	B10b.3.
Separation tubes, isotope separation	B10b.3.
Separators, centrifugal	2B352
Servo valves, propellant control systems	9A106
Shackles	PL5001
Shaft encoders	3A001f.
Sheep pox virus	1C352
Shiga toxin	1C351
Shigella dysenteriae	1C351
Ships, with decks/platforms strengthened for weapons	8A991
Sidelooking airborne radar (SLAR)	6A008d.
Sighting devices, military	ML5
Signal analysers	3A002c.
Signal generators, frequency synthesised	3A002d.
Signal processing devices, acousto—optic	3A001c.3.
Signal processing equipment	4A003g.
Signal processing equipment for hydrophone arrays	6A001a.2.c.
Signal processor microcircuits	3A001a.3.
Signal tracking technology	5E001b.2.
Signature reduction devices	ML2
	1C101
Signature suppression, military use	ML17
Silahydrocarbon oils	1C006
Silencers	ML1
Silent bearings	ML9
Silicon	3C001
Silicon carbide (SiC) substrate blanks	6C004d.

Silicon microcircuits	3A001
Silicon—on—sapphire integrated circuits	3A001a.
Silicone fluid, fluorinated	1C006
Silver gallium selenide (AgGaSe <sub>2</sub> )	6C004b.2.
Silyated resists	3C002
Simulation equipment, military	ML14
Simulators for nuclear reactors	B100
Simulators, military	ML4
Single crystal casting control software	9D004e.
Single crystal casting equipment	9B001
Single point diamond cutting tool inserts	2B008
Single point diamond turning techniques, technology	6E003a.2.b.
Skin friction transducers	9B008
Skirts, for surface effect vessels	8A002k.
Slapper detonators	3A232
Slide way assemblies	2B008
Slurry propellant control systems	9A106
Slush hydrogen storage	9A006
Slush hydrogen transfer systems	9A006
Small arms	ML1
Small waterplane area vessels	8A001i.
Smoke canisters	ML4
Smoke grenades	ML4a.
Smoke projectors or generators	ML2
Smooth—bore weapons	ML1
	PL5018
Sodium (Na) metal vapour lasers	6A005a.2.
Sodium bifluoride	1C350
Sodium cyanide	1C350
Sodium fluoride	1C350
Sodium sulphide	1C350
Solar cells	3A001e.1.
Solenoids, superconductive	3A001e.3.
	3A201b.

Solid rocket propulsion system components	9A008
	9A108
Solid rocket propulsion systems	9A007
	9A119
Solid roller bearings	2A001
	2A002
Solid state cameras	6A003b.1.
Solid state imaging devices	6A203b.3.
Solid state joining equipment	9B004
Solid state lasers, non-tunable	6A005c.2.
Solid state lasers, tunable	6A005c.1.
Solid state storage	4A003e.2.
Solid state switches	3A228
Solid-state imaging devices	6A002
Sonar log equipment	6A001c.
Sounding rocket test, inspection and production software	9D101
Sounding rockets	9A104
Source code generation software	4D003b.
Space launch vehicle test, inspection and production software	9D101
Space launch vehicles	9A004
Space probes	9A004
Space-qualified optical components	6A004c.
Space—qualified single—element and focal plane arrays	6A002a.1.
Spacecraft	9A004
Spark gaps, triggered	3A228
Special gun-mountings	ML1
Speech or image recognition equipment	4A003a.
Spin—forming machines	2B115
	2B215
Spindle assemblies, machine tools and dimensional inspection	2B008
Spread spectrum code	5A002e.
Spread spectrum radio equipment	5A001b.8.

Spreading code generation	5A002e.
Sprytron tubes	3A228
Sputter deposition production equipment	2B005
SQUIDS, superconductive quantum interference devices	6A006h.3.a.
SRAMs	3A001a.4.
Staging mechanisms for rockets	9A117
Staphylococcus aureus toxins	1C351
Static random—access memories (SRAMs)	3A001a.4.
Statistical multiplex equipment	5A001b.
Steam sterilisable freeze drying equipment	2B352
Steel, maraging	1C116
	1C216
Steerable parachutes	9A991
Step and repeat equipment for wafer processing	3B007
Stirling cycle engine	8A002j.
Storage integrated circuits	3A001a.4.
Storage tank components for use with liquid propelling charges	ML2
Storage tanks, chemical	2B350
Stored programme controlled digital cross connection equipment	5A001b.
Stored programme controlled switching equipment	5A001c.
Streak cameras, electronic type	6A203b.1.
Streak cameras, mechanical or electronic	6A003a.3.
Streak cameras, mechanical type	6A203a.2.
Streak tubes, for electronic streak cameras	6A203b.1.
Subcavitating hydrofoils	8A002m.
Submarine engines	ML9
Submarine nets	ML9
Submarines, military	ML9
Submersible vehicle systems or equipment	8A002a.
Submersible vehicles	8A001
Submersible vessels	8A990
Substrates	3C

Sulphur dichloride	1C350
Sulphur monochloride	1C350
Super—ventilated propellers	8A002o.
Supercavitating hydrofoils	8A002m.
Supercavitating propellers	8A002o.
Superconducting quantum interference devices (SQUIDS)	6A006h.
Superconductive circuits/systems, energy storage	3A001e.4.
Superconductive composite conductors	1C005
Superconductive devices or circuits	3A001d.
Superconductive electromagnetic sensors	6A006h.
Superconductive electromagnets or solenoids	3A001e.3.
	3A201b.
Superconductive equipment, military	ML20
Superconductive gates	3A001d.
Superconductive propulsion engines	8A002o.
Superconductive quantum interference devices (SQUIDS)	6A006h.
Superplastic forming technology for metal working	2E003b.
Superplastic forming tools, dies, moulds or fixtures	1B003
Supersonic expansion nozzles for UF <sub>6</sub> carrier gas	B10b.7.
Surface acoustic wave devices	3A001c.1.
Surface coating equipment for non—electronic substrates	2B005
Surface irregularity measuring equipment	2B006
Surface skimming (shallow bulk) acoustic wave devices	3A001c.1.
Surface vessels	8A001
Surface—effect vehicles (fully skirted variety)	8A001f.
Surface—effect vehicles (rigid sidewalls)	8A001g.
Surface—effect vehicles, fingers	8A002k.
Surveillance systems	ML5
Survey systems, bathymetric	6A001a.1.b.
Swine fever virus (Hog cholera virus)	1C352

Switch fabric technology	5E001b.5.
Switches, optical opacity (filters)	6A004d.3.
Switching devices, modules or assemblies	3A228
Switching equipment software	5D001c.
Synchronous Digital Hierarchy (SDH) technology	5E001b.4.
Synchronous Optical Network technology (SONET)	5E001b.4.
Syntactic foam for underwater use	8C001
Synthetic aperture radar (SAR)	6A008d.
Synthetic diamond material	6C004g.
Systolic array computers	4A004a.
Tank destroyers	ML2
Tanks	ML6
Tanks, chemical storage	2B350
Tantalum crucibles	2A225b.
Tape—laying machines	1B001b.
	1B101b.
Tapered roller bearings	2A003
Target acquisition systems	ML5
Tear gases	ML7
Telecommunications equipment	5A001
Telecommunications production equipment	5B001a.
Telecommunications test equipment	5B001
Telemetering and telecontrol equipment	5A101
Telescopic sights for firearms	PL5002
Tellurium (Te)	6C002a.
Terminal interface equipment, for digital computers	4A003k.
Terrestrial geophones	6A001b.
Teschen disease virus	1C352
Test bench/stand for rockets or rocket motors	9B117
Test chambers, aerosol challenge	2B352
Test receivers, microwave	3A002f.
Tetrodotoxin	1C351
Thallium arsenic selenide (Tl <sub>3</sub> AsSe <sub>3</sub> or TAS)	6C004b.3.

Thermal imaging equipment	ML15
Thermal ionization mass spectrometers (TIMS)	3A233
Thermal sensors using optical fibres	6A002d.3.
Thermoplastic liquid crystal copolymers	1C008
Thio—ethers	1C006
Thiodiglycol	1C350
Thionyl chloride	1C350
Thorium metal, alloys, compounds and concentrates	A10
Thrust chamber, high pressure	9A006
Thrust tabs	9A106
	9A108
Thrust vector control sub—systems	9A106
	9A108
Thrust vector control systems	9A008
Thulium—YAG (Tm: YAG) lasers	6A005c.1.
Thulium—YSGG (Tm: YSGG) lasers	6A005c.1.
Tilt rotor/tilt wing power transfer system technology	9E003d.
Tilting spindles	2B009
Time or frequency domain processing and correlation equipment	6A001a.2.c.
Titanium alloys	1C202
Titanium alloys or powders	1C002
Titanium aluminides	1C002
Titanium doped sapphire laser host material	6C005a.
Titanium—sapphire (Ti: Al <sub>203</sub> ) lasers	6A005c.1.
Torpedo nets	ML9
Torpedoes	ML4
Tow—placement machines	1B001b.
Towed acoustic hydrophone arrays	6A001a.2.b.
Toxic gas monitoring systems	2B351
Toxicological agents	ML7
Toxins	1C351
Tracking radar	6A0081.1.
Tracking systems	ML5

Tracking systems, precision	6A108b.1.
Trailers, ammunition	ML6
Training equipment, military	ML14
Transducers, for acoustic projectors	6A100a.1.c.
Transducers, hydrophone	6A001a.2.a.
Transient recorders	3A202
Transistors, microwave	3A001b.3.
Translation encoders (transcoders)	5A001b.
Transmultiplex equipment	5A001b.
Travelling wave tubes	3A001b.1.
Tray exchange towers	B40
Triethanolamine	1C350
Triethanolamine hydrochloride	1C350
Triethyl phosphite	1C350
Triethylene glycol dinitrate (TEGDN)	1C115
Triggered spark—gaps	3A228
Trimethyl phosphite	1C350
Tritium plant	1B231
Tritium, compounds and mixtures	1C235
Tropospheric scatter communication equipment	5A990
Trusted Computer System Evaluation Criteria (TCSEC)	5A002f.
Tunable band—pass filters	3A001b.5.
Tunable band—stop filters	3A001b.5.
Tunable lasers, solid state	6A005c.1.
Tunable optical filters	6A004d.2.
Tungsten	1C226
Tungsten alloys	1C004
	1C226
Tungsten and alloys	1C117
Tungsten carbide	1C226
Turbocompound engines	9A101
Turboexpanders	B40
Turbofan engines	9A101
Turbojet engines	9A101

Turning machines	2B001
Turning machines for optical quality surfaces	2B002
TV cameras, radiation—hardened	6A203c.
Two dimensional focal plane arrays	6A002a.
UF <sub>6</sub> auxiliary equipment	B20
UF <sub>6</sub> liquefaction stations	B20
UF <sub>6</sub> product and tails stations	B20
UF <sub>6</sub> production plant	B30
Ultrasonic test equipment for nuclear reactors	B100
Underwater cameras	8A002e.
Underwater communication cable	5A001e.3.
Underwater communications systems	5A001b.11.
Underwater detection devices, military	ML9
Underwater electronic imaging systems	8A002f.
Underwater noise reduction software	8D002
Underwater noise reduction technology	8E002
Underwater optical fibres and accessories	5A001e.3.
Underwater swimming apparatus	ML17
Underwater vehicles	8A001
Underwater velocity measurement equipment	6A001c.
Underwater vessels	ML9
Underwater vision systems	8A002d.
Unmanned airborne vehicles	ML10
Unmanned tethered submersible vehicles	8A001c.
Unmanned untethered submersible vehicles	8A001d.
Uranium cooling equipment	B10b.6.
Uranium fluoride (UF <sub>5</sub> ) product filter collectors	B10b.7.
Uranium metal, alloys, compounds and concentrates	A10
Uranium titanium alloys	1C004
Uranium vapour product and tails collector systems	B10b.
Uranium, enriched	A20
Vacuum headers	B20
Vacuum induction furnaces	2B226

Vacuum manifolds	B20
Vacuum melting and casting furnaces	2B227
Vacuum pumps	B20
	2B231
Validation and programme proof software	4D003a.
Valves, bellows	2B350
Valves, bellows seal	2A226
Valves, diaphragm	2B350
Valves, double-seal	2B350
Valves, for gaseous diffusion isotope separation plant	B10b.1.
Variola virus	1C351
Vector processors	4A003
Vehicles fitted with mountings for arms	ML6
Vehicles modified for military use	ML6
Vehicles, military	ML6
Velocity interferometers (VISARs)	6A225
Velocity measurement equipment, underwater	6A001c.
Venezuelan equine encephalitis virus	1C351
Ventilated propellers	8A002o.
Verotoxin	1C351
Vesicular stomatitis virus	1C352
Vessel positioning systems, acoustic	6A001a.1.d.
Vessels	8A001
	8A990
Vessels, military	ML9
Vibration test equipment	2B116
Vibration test equipment software	2D101
	9D004a.
Vibration test equipment, acoustic	9B006
Vibrio cholerae	1C351
Video cameras incorporating solid state sensors	6A003b.1.
Vinylidene fluoride	1C009
Vinylidene fluoride polymers	1A001
Virus protection software	5D002c.3.

Viruses	ML7
	1C351
	1C352
Vortex tubes, aerodynamic isotope separation	B10b.3.
Wafer handling systems	3B006
Wafers, semiconductor with function determined	3A001a.
Wafers, with epitaxial layers	3C001
Warships	ML9
Water cannon	PL5001
Water distillation towers	B40
Water jet cutting machines	2B001
Water tunnels	8B001
Water—hydrogen sulphide exchange tray columns	1B229
Water—screw propellers	8A002o.
Wave division multiplex equipment	5A001b.4.
Waveguides, flexible	3A001b.7.
Weapon control systems	ML5
Weapon sights	ML5
Weapons using caseless ammunition	ML1
Weaving machines	1B001c.
Western equine encephalitis virus	1C351
Wet—spinning equipment for refractory ceramics	1B001d.
	1B101d.
White pox	1C351
Wide—swath bathymetric survey systems	6A001a.1.
Wind tunnel aero-model technology	9E003b.
Wind tunnels	9B105
Wind tunnels, control systems for	9B005
Wire type electrical discharge machines	2B001
Work stations, computers	4A003
X—ray resist materials	3C002
X—ray systems, flash discharge	3A001e.5.
	3A201c.

Yellow fever virus	1C351
Zinc selenide (ZnSe), substrate blanks	6C004a.
Zinc sulphide (ZnS), substrate blanks	6C004a.
Zirconium fluoride (ZrF <sub>4</sub> ) glass	6C004f.
Zirconium metal or alloy tubes	B50
Zirconium metal, alloys and compounds	1C234
Zoonoses	1C351