0C005 Specially prepared compounds or powders for the manufacture of gaseous diffusion barriers, resistant to corrosion by UF_6 (e.g. nickel or alloys containing 60 % by weight or more nickel, aluminium oxide and fully fluorinated hydrocarbon polymers), having a purity of 99,9 % by weight or more and a particle size less than 10 μm measured by ASTM B330 standard and a high degree of particle size uniformity.

0D Software

0D001 "Software" specially designed or modified for the "development", "production" or "use" of goods specified in this Category.

0E Technology

0E001 "Technology" according to the Nuclear Technology Note for the "development", "production" or "use" of goods specified in this Category.

CATEGORY 1 – SPECIAL MATERIALS AND RELATED EQUIPMENT

1A Systems, Equipment and Components

1A001 Components made from fluorinated compounds, as follows:

a. Seals, gaskets, sealants or fuel bladders, specially designed for "aircraft" or aerospace use, made from more than 50 % by weight of any of the materials specified in 1C009.b. or 1C009.c.;

b. Not used;

c. Not used.

1A002 "Composite" structures or laminates, as follows:

NB: *SEE ALSO 1A202, 9A010 and 9A110.*

a. Made from any of the following:

1. An organic "matrix" and "fibrous or filamentary materials" specified in 1C010.c. or 1C010.d.: or

2. Prepregs or preforms specified in 1C010.e.;

b. Made from a metal or carbon "matrix", and any of the following:

1. Carbon "fibrous or filamentary materials" having all of the following:

a. A "specific modulus" exceeding $10{,}15 \times 10^6$ m; and

b. A "specific tensile strength" exceeding $17{,}7 \times 10^4$ m; or

2. Materials specified in 1C010.c.

Note 1: *1A002 does not control "composite" structures or laminates made from epoxy resin impregnated carbon "fibrous or filamentary materials" for the repair of "civil aircraft" structures or laminates, having all of the following:*

a. An area not exceeding 1 m^2;

b. A length not exceeding 2,5 m; and

c. A width exceeding 15 mm.

1A002 (*continued*)

Note 2: 1A002 does not control semi-finished items, specially designed for purely civilian applications as follows:

a. Sporting goods;

b. Automotive industry;

c. Machine tool industry;

d. Medical applications.

Note 3: 1A002.b.1. does not control semi-finished items containing a maximum of two dimensions of interwoven filaments and specially designed for applications as follows:

a. Metal heat-treatment furnaces for tempering metals;

b. Silicon boule production equipment.

Note 4: 1A002 does not control finished items specially designed for a specific application.

Note 5: 1A002.b.1. does not control mechanically chopped, milled, or cut carbon "fibrous or filamentary materials" 25,0 mm or less in length.

1A003 Manufactures of non-"fusible" aromatic polyimides in film, sheet, tape or ribbon form having any of the following:

a. A thickness exceeding 0,254 mm; or

b. Coated or laminated with carbon, graphite, metals or magnetic substances.

Note: 1A003 does *not control manufactures when coated or laminated with copper and designed for the production of electronic printed circuit boards.*

NB: For "fusible" aromatic polyimides in any form, see 1C008.a.3.

1A004 Protective and detection equipment and components not specially designed for military use, as follows:

NB: SEE ALSO MILITARY GOODS CONTROLS, 2B351 AND 2B352.

a. Full face masks, filter canisters and decontamination equipment therefor, designed or modified for defence against any of the following, and specially designed components therefor:

Note: 1A004.a. includes Powered Air Purifying Respirators (PAPR) that are designed or modified for defence against agents or materials, listed in 1A004.a.

Technical Note:

For the purposes of 1A004.a.:

1. Full face masks are also known as gas masks.

2. Filter canisters include filter cartridges.

1. "Biological agents";

2. 'Radioactive materials';

3. Chemical warfare (CW) agents; or

1A004 a. (*continued*)

4. "Riot control agents", including:

a. α-Bromobenzeneacetonitrile, (Bromobenzyl cyanide) (CA) (CAS 5798-79-8);

b. [(2-Chlorophenyl) methylene] propanedinitrile, (o-Chlorobenzylidenemalononitrile) (CS) (CAS 2698-41-1);

c. 2-Chloro-1-phenylethanone, Phenylacyl chloride (ω-chloroacetophenone) (CN) (CAS 532-27-4);

d. Dibenz-(b,f)-1,4-oxazephine (CR) (CAS 257-07-8);

e. 10-Chloro-5,10-dihydrophenarsazine, (Phenarsazine chloride), (Adamsite), (DM) (CAS 578-94-9);

f. N-Nonanoylmorpholine, (MPA) (CAS 5299-64-9);

b. Protective suits, gloves and shoes, specially designed or modified for defence against any of the following:

1. "Biological agents";

2. 'Radioactive materials'; or

3. Chemical warfare (CW) agents;

c. Detection systems, specially designed or modified for detection or identification of any of the following, and specially designed components therefor:

1. "Biological agents";

2. 'Radioactive materials'; or

3. Chemical warfare (CW) agents.

d. Electronic equipment designed for automatically detecting or identifying the presence of "explosives" residues and utilising 'trace detection' techniques (e.g., surface acoustic wave, ion mobility spectrometry, differential mobility spectrometry, mass spectrometry).

Technical Note:

'Trace detection' is defined as the capability to detect less than 1 ppm vapour, or 1 mg solid or liquid.

Note 1: 1A004.d. does not control equipment specially designed for laboratory use.

Note 2: 1A004.d. does not control non-contact walk-through security portals.

Note: 1A004 does not control:

a. Personal radiation monitoring dosimeters;

b. Occupational health or safety equipment limited by design or function to protect against hazards specific to residential safety or civil industries, including:

1. mining;

2. quarrying;

3. agriculture;

4. pharmaceutical;

1A004 d. Note: b. (*continued*)

5. medical;

6. veterinary;

7. environmental;

8. waste management;

9. food industry.

Technical Notes:

1. *1A004 includes equipment and components that have been identified, successfully tested to national standards or otherwise proven effective, for the detection of or defence against 'radioactive materials', "biological agents", chemical warfare agents, 'simulants' or "riot control agents", even if such equipment or components are used in civil industries such as mining, quarrying, agriculture, pharmaceuticals, medical, veterinary, environmental, waste management, or the food industry.*

2. *'Simulant' is a substance or material that is used in place of toxic agent (chemical or biological) in training, research, testing or evaluation.*

3. *For the purposes of 1A004, 'radioactive materials' are those selected or modified to increase their effectiveness in producing casualties in humans or animals, degrading equipment or damaging crops or the environment.*

1A005 Body armour and components therefor, as follows:

NB: *SEE ALSO MILITARY GOODS CONTROLS.*

a. Soft body armour not manufactured to military standards or specifications, or to their equivalents, and specially designed components therefor;

b. Hard body armour plates providing ballistic protection equal to or less than level IIIA (NIJ 0101.06, July 2008), or "equivalent standards".

NB: *For "fibrous or filamentary materials" used in the manufacture of body armour, see 1C010.*

Note 1: *1A005 does not control body armour when accompanying its user for the user's own personal protection.*

Note 2: *1A005 does not control body armour designed to provide frontal protection only from both fragment and blast from non-military explosive devices.*

Note 3: *1A005 does not control body armour designed to provide protection only from knife, spike, needle or blunt trauma.*

1A006 Equipment, specially designed or modified for the disposal of Improvised Explosive Devices (IEDs), as follows, and specially designed components and accessories therefor:

NB: *SEE ALSO MILITARY GOODS CONTROLS.*

a. Remotely operated vehicles;

b. 'Disruptors'.

Technical Note:

For the purposes of 1A006.b. 'disruptors' are devices specially designed for the purpose of preventing the operation of an explosive device by projecting a liquid, solid or frangible projectile.

Note: *1A006 does not control equipment when accompanying its operator.*

1A007 Equipment and devices, specially designed to initiate charges and devices containing "energetic materials", by electrical means, as follows:

NB: SEE ALSO MILITARY GOODS CONTROLS, 3A229 AND 3A232.

a. Explosive detonator firing sets designed to drive explosive detonators specified in 1A007.b.;

b. Electrically driven explosive detonators as follows:

1. Exploding bridge (EB);

2. Exploding bridge wire (EBW);

3. Slapper;

4. Exploding foil initiators (EFI).

Technical Notes:

1. The word initiator or igniter is sometimes used in place of the word detonator.

2. For the purpose of 1A007.b. the detonators of concern all utilise a small electrical conductor (bridge, bridge wire, or foil) that explosively vaporises when a fast, high-current electrical pulse is passed through it. In non-slapper types, the exploding conductor starts a chemical detonation in a contacting high explosive material such as PETN (pentaerythritoltetranitrate). In slapper detonators, the explosive vaporization of the electrical conductor drives a flyer or slapper across a gap, and the impact of the slapper on an explosive starts a chemical detonation. The slapper in some designs is driven by magnetic force. The term exploding foil detonator may refer to either an EB or a slapper-type detonator.

1A008 Charges, devices and components, as follows:

a. 'Shaped charges' having all of the following:

1. Net Explosive Quantity (NEQ) greater than 90 g; and

2. Outer casing diameter equal to or greater than 75 mm;

b. Linear shaped cutting charges having all of the following, and specially designed components therefor:

1. An explosive load greater than 40 g/m; and

2. A width of 10 mm or more;

c. Detonating cord with explosive core load greater than 64 g/m;

d. Cutters, other than those specified in 1A008.b., and severing tools, having a Net Explosive Quantity (NEQ) greater than 3,5 kg.

Technical Note:

'Shaped charges' are explosive charges shaped to focus the effects of the explosive blast.

1A102 Resaturated pyrolized carbon-carbon components designed for space launch vehicles specified in 9A004 or sounding rockets specified in 9A104.

1A202 Composite structures, other than those specified in 1A002, in the form of tubes and having both of the following characteristics:

NB: SEE ALSO 9A010 AND 9A110.

a. An inside diameter of between 75 mm and 400 mm; and

b. Made with any of the "fibrous or filamentary materials" specified in 1C010.a. or b. or 1C210.a. or with carbon prepreg materials specified in 1C210.c.

1A225 Platinized catalysts specially designed or prepared for promoting the hydrogen isotope exchange reaction between hydrogen and water for the recovery of tritium from heavy water or for the production of heavy water.

1A226 Specialized packings which may be used in separating heavy water from ordinary water, having both of the following characteristics:

a. Made of phosphor bronze mesh chemically treated to improve wettability; and

b. Designed to be used in vacuum distillation towers.

1A227 High-density (lead glass or other) radiation shielding windows, having all of the following characteristics, and specially designed frames therefor:

a. A 'cold area' greater than 0,09 m^2;

b. A density greater than 3 g/cm^3; and

c. A thickness of 100 mm or greater.

Technical Note:

In 1A227 the term 'cold area' means the viewing area of the window exposed to the lowest level of radiation in the design application.

1B Test, Inspection and Production Equipment

1B001 Equipment for the production or inspection of "composite" structures or laminates specified in 1A002 or "fibrous or filamentary materials" specified in 1C010, as follows, and specially designed components and accessories therefor:

NB: SEE ALSO 1B101 AND 1B201.

a. Filament winding machines, of which the motions for positioning, wrapping and winding fibres are coordinated and programmed in three or more 'primary servo positioning' axes, specially designed for the manufacture of "composite" structures or laminates, from "fibrous or filamentary materials";

b. 'Tape-laying machines', of which the motions for positioning and laying tape are coordinated and programmed in five or more 'primary servo positioning' axes, specially designed for the manufacture of "composite" airframe or 'missile' structures;

Note: In 1B001.b., 'missile' means complete rocket systems and unmanned aerial vehicle systems.

Technical Note:

For the purposes of 1B001.b., 'tape-laying machines' have the ability to lay one or more 'filament bands' limited to widths greater than 25,4 mm and less than or equal to 304,8 mm, and to cut and restart individual 'filament band' courses during the laying process.

c. Multidirectional, multidimensional weaving machines or interlacing machines, including adapters and modification kits, specially designed or modified for weaving, interlacing or braiding fibres, for "composite" structures;

Technical Note:

For the purposes of 1B001.c., the technique of interlacing includes knitting.