

Non-fluorinated Polymeric Substances and Fibrous or Filamentary Materials
Subject to Control under the Import and Export (Strategic Commodities) Regulations
(from 4 February 2010)

<u>Category</u>	<u>Description</u>
1C008	<p>Non-fluorinated polymeric substances, as follows:</p> <ul style="list-style-type: none"> (a) (1) Bismaleimides; (2) Aromatic polyamide-imides; (3) Aromatic polyimides; (4) Aromatic polyetherimides having a glass transition temperature (T_g) exceeding 513 K (240°C); <p>N.B. : For non-"fusible" aromatic polyimides in film, sheet, tape or ribbon form, see 1A003.</p> <p>Note:</p> <p>1C008(a) includes the substances in liquid or solid "fusible" form, including resin, powder, pellet, film, sheet, tape and ribbon.</p> <ul style="list-style-type: none"> (b) Thermoplastic liquid crystal copolymers having a heat distortion temperature exceeding 523 K (250°C) measured according to ISO 75-2 (2004), method A or national equivalents, with a load of 1.80 N/mm² and composed of: <ul style="list-style-type: none"> (1) Any of the following: <ul style="list-style-type: none"> (a) Phenylene, biphenylene or naphthalene; or (b) Methyl, tertiary-butyl or phenyl substituted phenylene, biphenylene or naphthalene; and (2) Any of the following acids: <ul style="list-style-type: none"> (a) Terephthalic acid; (b) 6-hydroxy-2 naphthoic acid; or (c) 4-hydroxybenzoic acid; (c) [Repealed] (d) Polyarylene ketones; (e) Polyarylene sulphides, where the arylene group is biphenylene, triphenylene or combinations thereof; (f) Polybiphenylenethersulphone having a glass transition temperature (T_g) exceeding 513 K (240°C). <p>Technical Note:</p> <p>The glass transition temperature (T_g) for 1C008 materials is determined using the method described in ISO 11357-2 (1999) or national equivalents.</p>
1C010	<p>"Fibrous or filamentary materials" which may be used in organic "matrix", metallic "matrix" or carbon "matrix" "composite" structures or laminates, as follows:</p> <p>N.B.:</p> <p>See also 1C210 and 9C110.</p> <ul style="list-style-type: none"> (a) Organic "fiibrous or filamentary materials", having all of the following: <ul style="list-style-type: none"> (1) A "specific modulus" exceeding 12.7 x 10⁶ m; and (2) A "specific tensile strength" exceeding 23.5 x 10⁴ m; <p>Note:</p> <p>1C010(a) does not control polyethylene.</p> (b) Carbon "fibrous or filamentary materials", having all of the following: <ul style="list-style-type: none"> (1) A "specific modulus" exceeding 12.7 x 10⁶ m; and (2) A "specific tensile strength" exceeding 23.5 x 10⁴ m; <p>Technical Note:</p> <p>Properties for materials described in 1C010(b) should be determined using Suppliers of Advance Composite Materials Association (SACMA) recommended methods</p>

SRM 12 to 17, ISO 10618(2004) 10.2.1 Method A or national equivalent tow tests and based on lot average.

Note:

1C010(b) does not include fabric made from "fibrous or filamentary materials" for the repair of "civil aircraft" structures or laminates, in which the size of individual sheets does not exceed 100cm x 100cm .

- (c) Inorganic "fibrous or filamentary materials", having all of the following:
- (1) A "specific modulus" exceeding 2.54×10^6 m; and
 - (2) A melting, softening, decomposition or sublimation point exceeding 1922 K (1 649°C) in an inert environment;

Note:

1C010(c) does not control:

1. Discontinuous, multiphase, polycrystalline alumina fibres in chopped fibre or random mat form, containing 3 weight percent or more silica, with a specific modulus of less than 10×10^6 m.
 2. Molybdenum and molybdenum alloy fibres.
 3. Boron fibres.
 4. Discontinuous ceramic fibres with a melting, softening, decomposition or sublimation point lower than 2043 K (1770°C) in an inert environment.
- (d) "Fibrous or filamentary materials":
- (1) Composed of any of the following:
 - (a) Polyetherimides controlled by 1C008(a); or
 - (b) Materials controlled by 1C008(b) to 1C008(f); or
 - (2) Composed of materials controlled by 1C010(d)(1)(a) or 1C010(d)(1)(b) and "commingled" with other fibres controlled by 1C010(a), 1C010(b) or 1C010(c);
- (e) Resin-impregnated or pitch-impregnated fibres (prepregs), metal or carbon-coated fibres (preforms) or "carbon fibre preforms", as follows:
- (1) Made from "fibrous or filamentary materials" controlled by 1C010(a), 1C010(b) or 1C010(c);
 - (2) Made from organic or carbon "fibrous or filamentary materials":
 - (a) With a "specific tensile strength" exceeding 17.7×10^4 m;
 - (b) With a "specific modulus" exceeding 10.15×10^6 m;
 - (c) Not controlled by 1C010(a) or 1C010(b); and
 - (d) When impregnated with materials controlled by 1C008 or 1C009(b), having a glass transition temperature (T_g) exceeding 383 K (110°C) or with phenolic or epoxy resins, having a glass transition temperature (T_g) equal to or exceeding 418 K (145°C);

Note:

1C010(e) does not include:

1. Epoxy resin "matrix" impregnated carbon "fibrous or filamentary materials" (prepregs) for the repair of "civil aircraft" structures or laminates, in which the size of individual sheets of prepreg does not exceed 100cm x 100cm; and
2. Prepregs when impregnated with phenolic or epoxy resins having a glass transition temperature (T_g) less than 433 K (160°C) and a cure temperature lower than the glass transition temperature.

Technical Note:

The glass transition temperature (T_g) for 1C010(e) materials is determined using the method described in ASTM D-3418 using the dry method. The glass transition temperature for phenolic and epoxy resins is determined using the method described in ASTM D-4065 at a frequency of 1 Hz and a heating rate of 2 K (°C) per minute using the dry method.