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(Acts adopted under the EC Treaty/Euratom Treaty whose publication is obligatory)

### REGULATIONS

# COUNCIL REGULATION (EC) No 423/2007 of 19 April 2007

## concerning restrictive measures against Iran

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Articles 60 and 301 thereof,

Having regard to Council Common Position 2007/140/CFSP of 27 February 2007 concerning restrictive measures against Iran (1),

Having regard to the proposal from the Commission,

Whereas:

- (1) On 23 December 2006, the United Nations Security Council adopted Resolution 1737 (2006) (UNSCR 1737 (2006)) deciding that Iran should without further delay suspend all enrichment-related and reprocessing activities, as well as work on all heavy water-related projects, and take certain steps required by the International Atomic Energy Agency (IAEA) Board of Governors, which the United Nations Security Council deems essential to build confidence in the exclusively peaceful purpose of Iran's nuclear programme. In order to persuade Iran to comply with this mandatory decision, the United Nations Security Council decided that all Member States of the United Nations should apply a number of restrictive measures.
- (2) In line with UNSCR 1737 (2006), Common Position 2007/140/CFSP provides for certain restrictive measures against Iran. These measures include restrictions on exports and imports of goods and technology which could contribute to Iran's enrichment-related, reprocessing, or heavy water-related activities, or to the development of nuclear weapon delivery systems, a ban on the provision of related services, a ban on investment related to such goods and technology, a ban on procurement of relevant goods and technology from

Iran, as well as the freezing of funds and economic resources of persons, entities and bodies engaged in, directly associated with or providing support for such activities or development.

- (3) These measures fall within the scope of the Treaty establishing the European Community and, therefore, notably with a view to ensuring their uniform application by economic operators in all Member States, Community legislation is necessary in order to implement them as far as the Community is concerned.
- (4) This Regulation derogates from existing Community legislation that provides for general rules on exports to, and imports from, third countries, and in particular from Council Regulation (EC) No 1334/2000 of 22 June 2000 setting up a Community regime for the control of exports of dual-use items and technology (²), in so far as this Regulation covers the same goods and technology.
- (5) For reasons of expediency, the Commission should be empowered to publish the list of banned goods and technology and any amendments to it that will be adopted by the Sanctions Committee or the United Nations Security Council, and to amend the lists of persons, entities and bodies whose funds and economic resources should be frozen on the basis of decisions reached by the United Nations Security Council or by the Sanctions Committee.
- (6) As regards the procedure for establishing and amending the list referred to in Article 7(2) of this Regulation, the Council should exercise the corresponding implementing powers itself in view of the objectives of UNSCR 1737 (2006), notably to constrain Iran's development of sensitive technologies in support of its nuclear and missile programmes, and the proliferation-sensitive nature of the activities undertaken by the persons and entities supporting these programmes.

<sup>(2)</sup> OJ L 159, 30.6.2000, p. 1. Regulation as last amended by Regulation (EC) No 394/2006 (OJ L 74, 13.3.2006, p. 1).

- (7) Member States should determine the penalties applicable to infringements of the provisions of this Regulation. The penalties provided for should be proportionate, effective and dissuasive.
- (8) In order to ensure that the measures provided for in this Regulation are effective, the latter should enter into force on the day of its publication,

HAS ADOPTED THIS REGULATION:

### Article 1

For the purposes of this Regulation only, the following definitions shall apply:

- (a) 'Sanctions Committee' means the Committee of the United Nations Security Council which was established pursuant to paragraph 18 of UNSCR 1737 (2006);
- (b) 'technical assistance' means any technical support related to repairs, development, manufacture, assembly, testing, maintenance, or any other technical service, and may take forms such as instruction, advice, training, transmission of working knowledge or skills or consulting services; including verbal forms of assistance;
- (c) the term 'goods' includes items, materials and equipment;
- (d) the term 'technology' includes software;
- (e) 'investment' means acquisition or extension of a participation in enterprises, including the acquisition in full of such enterprises and the acquisition of shares and securities of a participating nature;
- (f) 'brokering services' means activities of persons, entities and partnerships acting as intermediaries by buying, selling or arranging the transfer of goods and technology, or negotiating or arranging transactions that involve the transfer of goods or technology;
- (g) 'funds' means financial assets and benefits of every kind, including but not limited to:
  - (i) cash, cheques, claims on money, drafts, money orders and other payment instruments;
  - (ii) deposits with financial institutions or other entities, balances on accounts, debts and debt obligations;

- (iii) publicly- and privately-traded securities and debt instruments, including stocks and shares, certificates representing securities, bonds, notes, warrants, debentures and derivatives contracts;
- (iv) interest, dividends or other income on or value accruing from or generated by assets;
- (v) credit, right of set-off, guarantees, performance bonds or other financial commitments;
- (vi) letters of credit, bills of lading, bills of sale; and
- (vii) documents showing evidence of an interest in funds or financial resources;
- (h) 'freezing of funds' means preventing any moving, transfer, alteration, use of, access to, or dealing with funds in any way that would result in any change in their volume, amount, location, ownership, possession, character, destination or other change that would enable the funds to be used, including portfolio management;
- (i) 'economic resources' means assets of every kind, whether tangible or intangible, movable or immovable, which are not funds but which may be used to obtain funds, goods or services;
- (j) 'freezing of economic resources' means preventing the use of economic resources to obtain funds, goods or services in any way, including, but not limited to, by selling, hiring or mortgaging them;
- (k) 'territory of the Community' means the territories of the Member States to which the Treaty is applicable, under the conditions laid down in the Treaty, including their airspace.

#### Article 2

It shall be prohibited:

- (a) to sell, supply, transfer or export, directly or indirectly, the following goods and technology, whether or not originating in the Community, to any natural or legal person, entity or body in, or for use in, Iran:
  - (i) all goods and technology contained in the Nuclear Suppliers Group and Missile Technology Control Regime lists. These goods and technology are listed in Annex I;

- (ii) other goods and technology determined by the Sanctions Committee or the United Nations Security Council as goods and technology which could contribute to Iran's enrichment-related, reprocessing, or heavy water-related activities, or to the development of nuclear weapon delivery systems. These goods and technology are also listed in Annex I;
- (b) to participate, knowingly and intentionally, in activities the object or effect of which is to circumvent the prohibition referred to in point (a).

- 1. A prior authorisation shall be required for the sale, supply, transfer or export, directly or indirectly, of the goods and technology listed in Annex II, whether or not originating in the Community, to any natural or legal person, entity or body in, or for use in, Iran.
- 2. Annex II shall include any goods and technology other than those included in Annex I, which could contribute to enrichment-related, reprocessing or heavy water-related activities, to the development of nuclear weapon delivery systems, or to the pursuit of activities related to other topics about which the International Atomic Energy Agency (IAEA) has expressed concerns or identified as outstanding.
- 3. Exporters shall supply the competent authorities with all relevant information required for their application for an export authorisation.
- 4. The competent authorities of the Member States, as indicated in the websites listed in Annex III, shall not grant any authorisation for any sale, supply, transfer or export of the goods or technology included in Annex II, if they determine that the sale, supply, transfer or export thereof would contribute to one of the following activities:
- (a) Iran's enrichment-related, reprocessing or heavy water-related activities;
- (b) the development of nuclear weapon delivery systems by Iran; or
- (c) the pursuit by Iran of activities related to other topics about which the IAEA has expressed concerns or identified as outstanding.
- 5. Under the conditions set out in paragraph 4, the competent authorities of the Member States, as indicated in the websites listed in Annex III, may annul, suspend, modify

or revoke an export authorisation which they have already granted.

- 6. Where they refuse to grant an authorisation, or annul, suspend, substantially limit or revoke an authorisation in accordance with paragraph 4, the Member States shall notify the other Member States and the Commission thereof and share the relevant information with them, while complying with the provisions concerning the confidentiality of such information of Council Regulation (EC) No 515/97 of 13 March 1997 on mutual assistance between the administrative authorities of the Member States and cooperation between the latter and the Commission to ensure the correct application of the law on customs and agricultural matters (¹).
- 7. Before a Member State grants an export authorisation which has been denied by another Member State or States, in accordance with paragraph 4, for an essentially identical transaction and for which the denial is still valid, it will first consult the Member State or States which issued the denial as provided for in paragraphs 5 and 6. If, following such consultations, the Member State concerned decides to grant an authorisation, it shall inform the other Member States and the Commission thereof, providing all relevant information to explain the decision.

#### Article 4

It shall be prohibited to purchase, import or transport the goods and technology listed in Annex I, from Iran, whether the item concerned originates in Iran or not.

- 1. It shall be prohibited:
- (a) to provide, directly or indirectly, technical assistance, or brokering services related to the goods and technology listed in Annex I and to the provision, manufacture, maintenance and use of goods listed in Annex I to any natural or legal person, entity or body in, or for use in, Iran;
- (b) to provide investment to enterprises in Iran engaged in the manufacture of goods and technology as listed in Annex I;
- (c) to provide, directly or indirectly, financing or financial assistance related to the goods and technology listed in Annex I, including in particular grants, loans and export credit insurance, for any sale, supply, transfer or export of such items, or for any provision of related technical assistance to any natural or legal person, entity or body in, or for use in, Iran;

 <sup>(</sup>¹) OJ L 82, 22.3.1997, p. 1. Regulation as last amended by Regulation (EC) No 807/2003 (OJ L 122, 16.5.2003, p. 36).

- (d) to participate, knowingly and intentionally, in activities, the object or effect of which is to circumvent the prohibitions referred to in points (a), (b) or (c).
- The provision of:
- (a) technical assistance, or brokering services related to, goods and technology listed in Annex II and to the provision, manufacture, maintenance and use of these items, directly or indirectly to any person, entity or body in, or for use in Iran:
- (b) investment to enterprises in Iran engaged in the manufacture of goods and technology as listed in Annex II;
- (c) financing or financial assistance related to goods and technologies referred to in Annex II, including in particular grants, loans and export credit insurance, for any sale, supply, transfer or export of these items, or for any provision of related technical assistance, directly or indirectly, to any person, entity or body in, or for use in Iran:

shall be subject to an authorisation of the competent authority of the Member State concerned.

- 3. The competent authorities of the Member States, as indicated in the websites listed in Annex III, shall not grant any authorisation for the transactions referred to in paragraph 2, if they determine that the action were to contribute to one of the following activities:
- (a) Iran's enrichment-related, reprocessing or heavy waterrelated activities;
- (b) the development of nuclear weapon delivery systems by Iran: or
- (c) the pursuit by Iran of activities related to other topics about which the IAEA has expressed concerns or identified as outstanding.

## Article 6

The competent authorities of the Member States, as indicated in the websites listed in Annex III, may grant, under such terms and conditions as they deem appropriate, an authorisation for a transaction in relation to goods and technology, assistance, investment or brokering services referred to in Articles 2 or 5(1), where the Sanctions Committee has determined in advance and on a case-by-case basis that the transaction would clearly contribute neither to the development of technologies in support of Iran's proliferation sensitive nuclear activities, nor to the development of nuclear weapon devel-

- opment delivery systems, including where such goods and technology, assistance, investment or brokering services are for food, agricultural, medical or other humanitarian purposes, provided that:
- (a) the contract for delivery of the goods or technology, or for the provision of assistance, includes appropriate end-user guarantees, and
- (b) Iran has undertaken not to use the goods or technology concerned, or if applicable, the assistance concerned, in proliferation sensitive nuclear activities or for development of nuclear weapon delivery systems.

- 1. All funds and economic resources belonging to, owned, held or controlled by the persons, entities and bodies listed in Annex IV shall be frozen. Annex IV shall include the persons, entities and bodies designated by the United Nations Security Council or by the Sanctions Committee in accordance with paragraph 12 of UNSCR 1737 (2006).
- 2. All funds and economic resources belonging to, owned, held or controlled by the persons, entities and bodies listed in Annex V shall be frozen. Annex V shall include natural and legal persons, entities and bodies, not covered by Annex IV, who, in accordance with Article 5(1)(b) of Common Position 2007/140/CFSP, have been identified as:
- (a) being engaged in, directly associated with, or providing support for, Iran's proliferation-sensitive nuclear activities, or
- (b) being engaged in, directly associated with, or providing support for, Iran's development of nuclear weapon delivery systems, or
- (c) acting on behalf of or at the direction of a person, entity or body referred to under (a) or (b), or
- (d) being a legal person, entity or body owned or controlled by a person, entity or body referred to under (a) or (b), including through illicit means.
- 3. No funds or economic resources shall be made available, directly or indirectly, to or for the benefit of the natural or legal persons, entities or bodies listed in Annexes IV and V.
- 4. The participation, knowingly and intentionally, in activities the object or effect of which is, directly or indirectly, to circumvent the measures referred to in paragraphs 1, 2 and 3 shall be prohibited.

By way of derogation from Article 7, the competent authorities of the Member States, as indicated in the websites listed in Annex III, may authorise the release of certain frozen funds or economic resources, if the following conditions are met:

- (a) the funds or economic resources are the subject of a judicial, administrative or arbitral lien established before
   23 December 2006 or of a judicial, administrative or arbitral judgment rendered prior to that date;
- (b) the funds or economic resources will be used exclusively to satisfy claims secured by such a lien or recognised as valid in such a judgment, within the limits set by applicable laws and regulations governing the rights of persons having such claims:
- (c) the lien or judgment is not for the benefit of a person, entity or body listed in Annex IV or V;
- (d) recognising that the lien or judgment is not contrary to public policy in the Member State concerned; and
- (e) if Article 7(1) applies, the Sanctions Committee has been notified by the Member State of the lien or judgment.

#### Article 9

By way of derogation from Article 7 and provided payment by a person, entity or body listed in Annex IV or V is due under a contract, agreement or obligation that was concluded by, or arose for the person, entity or body concerned, before the date on which that person, entity or body has been designated by the Sanctions Committee, the Security Council or by the Council, the competent authorities of the Member States, as indicated in the websites listed in Annex III, may authorise, under such conditions as they deem appropriate, the release of certain frozen funds or economic resources, if the following conditions are met:

- (a) the competent authority concerned has determined that:
  - (i) the funds or economic resources shall be used for a payment by a person, entity or body listed in Annex IV or V;
  - (ii) the contract, agreement or obligation will not contribute to the manufacture, sale, purchase, transfer, export, import, transport or use of goods and technology listed in Annexes I and II; and
  - (iii) the payment is not in breach of Article 7(3);

- (b) if Article 7(1) applies, the Member State concerned has notified the Sanctions Committee of that determination and its intention to grant an authorisation, and the Sanctions Committee has not objected to that course of action within ten working days of notification; and
- (c) if Article 7(2) applies, the Member State concerned has notified that determination of its competent authority and its intention to grant an authorisation to the other Member States and to the Commission at least two weeks prior to the authorisation.

- 1. By way of derogation from Article 7, the competent authorities of the Member States, as indicated in the websites listed in Annex III, may authorise, under such conditions as they deem appropriate, the release of certain frozen funds or economic resources, or the making available of certain funds or economic resources, if the following conditions are met:
- (a) the competent authority concerned has determined that the funds or economic resources are:
  - (i) necessary to satisfy the basic needs of persons listed in Annex IV or V, and their dependent family members, including payments for foodstuffs, rent or mortgage, medicines and medical treatment, taxes, insurance premiums, and public utility charges;
  - (ii) intended exclusively for payment of reasonable professional fees and reimbursement of incurred expenses associated with the provision of legal services; or
  - (iii) intended exclusively for payment of fees or service charges for routine holding or maintenance of frozen funds or economic resources; and
- (b) if the authorisation concerns a person, entity or body listed in Annex IV, the Member State concerned has notified the Sanctions Committee of that determination and its intention to grant an authorisation, and the Sanctions Committee has not objected to that course of action within five working days of notification.
- 2. By way of derogation from Article 7, the competent authorities of the Member States, as indicated in the websites listed in Annex III, may authorise the release of certain frozen funds or economic resources or the making available of certain funds or economic resources, after having determined that the funds or economic resources are necessary for extraordinary expenses, provided that

- (a) if the authorisation concerns a person, entity or body listed in Annex IV, the Sanctions Committee has been notified of this determination by the Member State concerned and that the determination has been approved by that Committee, and
- (b) if the authorisation concerns a person, entity or body listed in Annex V, the competent authority has notified the grounds on which it considers that a specific authorisation should be granted to the other competent authorities of the Member States and to the Commission at least two weeks before the authorisation.
- 3. The relevant Member State shall inform the other Member States and the Commission of any authorisation granted under paragraphs 1 and 2.

- 1. Article 7(3) shall not prevent financial or credit institutions in the Community from crediting frozen accounts where they receive funds transferred by third parties to the account of a listed natural or legal person, entity or body, provided that any additions to such accounts will also be frozen. The financial or credit institution shall inform the competent authorities about such transactions without delay.
- 2. Article 7(3) shall not apply to the addition to frozen accounts of:
- (a) interest or other earnings on those accounts; or
- (b) payments due under contracts, agreements or obligations that were concluded or arose before 23 December 2006;

provided that any such interest, other earnings and payments are frozen in accordance with Article 7(1) or 7(2).

## Article 12

- 1. The freezing of funds and economic resources or the refusal to make funds or economic resources available, carried out in good faith on the basis that such action is in accordance with this Regulation, shall not give rise to liability of any kind on the part of the natural or legal person or entity or body implementing it, or its directors or employees, unless it is proved that the funds and economic resources were frozen or withheld as a result of negligence.
- 2. The prohibitions set out in Articles 5(1)(c) and 7(3) shall not give rise to liability of any kind on the part of the natural or

legal persons or entities concerned, if they did not know, and had no reasonable cause to suspect, that their actions would infringe these prohibitions.

#### Article 13

- 1. Without prejudice to the applicable rules concerning reporting, confidentiality and professional secrecy, natural and legal persons, entities and bodies shall:
- (a) supply immediately any information which would facilitate compliance with this Regulation, such as accounts and amounts frozen in accordance with Article 7, to the competent authorities of the Member States, as indicated in the websites listed in Annex III, where they are resident or located, and shall transmit such information, directly or through the Member States, to the Commission;
- (b) cooperate with the competent authorities, as indicated in the websites listed in Annex III, in any verification of this information.
- 2. Any additional information directly received by the Commission shall be made available to the Member State concerned.
- 3. Any information provided or received in accordance with this Article shall be used only for the purposes for which it was provided or received.

### Article 14

The Commission and Member States shall immediately inform each other of the measures taken under this Regulation and shall supply each other with any other relevant information at their disposal in connection with this Regulation, in particular information in respect of violations and enforcement problems and judgments handed down by national courts.

- 1. The Commission shall:
- (a) amend Annex I on the basis of determinations made by either the United Nations Security Council or the Sanctions Committee;
- (b) amend Annex III on the basis of information supplied by Member States;

- (c) amend Annex IV on the basis of determinations made by either the United Nations Security Council or the Sanctions Committee.
- 2. The Council, acting by qualified majority, shall establish, review and amend the list of persons, entities and bodies referred to in Article 7(2) and in full accordance with the determinations made by the Council in respect of Annex II to Common Position 2007/140/CFSP. The list in Annex V shall be reviewed in regular intervals and at least every 12 months.
- 3. The Council shall state individual and specific reasons for decisions taken pursuant to paragraph 2 and make them known to the persons, entities and bodies concerned.

- 1. Member States shall lay down the rules on penalties applicable to infringements of this Regulation and shall take all measures necessary to ensure that they are implemented. The penalties provided for shall be effective, proportionate and dissuasive.
- 2. Member States shall notify the Commission of those rules without delay after the entry into force of this Regulation and shall notify it of any subsequent amendment.

### Article 17

1. Member States shall designate the competent authorities referred to in this Regulation and identify them in or through the websites as listed in Annex III.

2. Member States shall notify the Commission of their competent authorities without delay after the entry into force of this Regulation and shall notify it of any subsequent amendment.

#### Article 18

This Regulation shall apply:

- (a) within the territory of the Community;
- (b) on board any aircraft or any vessel under the jurisdiction of a Member State:
- (c) to any person inside or outside the territory of the Community who is a national of a Member State;
- (d) to any legal person, entity or body which is incorporated or constituted under the law of a Member State;
- (e) to any legal person, entity or body in respect of any business done in whole or in part within the Community.

### Article 19

This Regulation shall enter into force on the day of its publication in the Official Journal of the European Union.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Luxembourg, 19 April 2007.

For the Council
The President
Brigitte ZYPRIES

## ANNEX I

## Goods and technology referred to in Article 2

### Note:

Where possible, the items in this Annex are defined by reference to the list of dual-use items set out in Annex I to Regulation (EC) No 1334/2000. If an item in this Annex is not identical to an item included in that Annex, the reference number taken from the list of dual-use items is preceded by 'ex' and the description of the goods or technology found in this Annex shall be decisive.

I.A. Goods

. . .

I.B. Technology

...

### ANNEX II

## Goods and technology referred to in Article 3

### Notes:

- 1. Unless otherwise stated, reference numbers used in the column below entitled 'Description' refer to the descriptions of dual-use items and technology set out in Annex I to Regulation (EC) No 1334/2000.
- 2. A reference number in the column below entitled 'Related item from Annex I to Regulation (EC) No 394/2006' means that the characteristics of the item described in the column 'Description' lie outside the parameters set out in the description of the dual-use entry referred to.
- 3. Definitions of terms between 'single quotation marks' are given in a technical note to the relevant item.
- 4. Definitions of terms between "double quotation marks" can be found in Annex I to Regulation (EC) No 394/2006.

## II.A. **GOODS**

## A0 Nuclear materials, facilities, and equipment

| No        | Description   | Related item from<br>Annex I to<br>Regulation (EC)<br>No 394/2006 |
|-----------|---|---|
| II.A0.001 | Hollow cathode lamps as follows:  | _   |
|           | a. Iodine hollow cathode lamps with windows in pure silicon or quartz   |   |
|           | b. Uranium hollow cathode lamps   |   |
| II.A0.002 | Faraday isolators in the wavelength range 500-650 nm  | _   |
| II.A0.003 | Optical gratings in the wavelength range 500-650 nm   | _   |
| II.A0.004 | Optical fibres in the wavelength range 500–650 nm coated with anti-reflecting layers in the wavelength range 500–650 nm and having core diameter greater than 0,4 mm but not exceeding 2 mm   | _   |
| II.A0.005 | Nuclear reactor vessel components and testing equipment, other than those specified in 0A001, as follows:   | 0A001   |
|           | 1. Seals  |   |
|           | 2. Internal components  |   |
|           | 3. Sealing, testing and measurement equipment   |   |
| II.A0.006 | Nuclear detection systems for detection, identification or quantification of radioactive materials and radiation of nuclear origin and specially designed components therefor, other than those specified in 0A001.j or 1A004c                  | 0A001.j<br>1A004.c  |
| II.A0.007 | Bellows-sealed valves made of aluminium alloy or stainless steel type 304 or 316 L.  Note: This item does not control bellow valves defined in 0B001.c.6 and 2A226  | 0B001.c.6<br>2A226  |
| II.A0.008 | Plane, convex and concave mirrors, coated with high-reflecting or controlled multi-<br>layers in the wavelength range 500 nm-650 nm   | 0B001.g.5   |
| II.A0.009 | Lenses, polarisers, half-wave retarder plates ( $\lambda/2$ plates), quarter-wave retarder plates ( $\lambda/4$ plates), laser windows in silicon or quartz and rotators, coated with anti-reflecting layers in the wavelength range 500–650 nm | 0B001.g   |
| II.A0.010 | Pipes, piping, flanges, fittings made of, or lined with nickel or nickel alloy containing more than 40 % nickel by weight, other than those specified in 2B350.h.1.   | 2B350   |

| No        | Description  | Related item from<br>Annex I to<br>Regulation (EC)<br>No 394/2006 |
|-----------|--|---|
| II.A0.011 | Vacuum pumps other than those specified in 0B002.f.2. or 2B231, as follows:  — Turbomolecular pumps having a flowrate equal to or greater than 400 l/s  — Roots-type vacuum roughing pumps having a volumetric aspiration flowrate greater than 200 m³/h  Bellows-sealed, scroll, dry compressor, and bellows sealed, scroll, dry vacuum pumps | 0B002.f.2<br>2B231  |
| II.A0.012 | Shielded enclosures for the manipulation, storage and handling of radioactive substances (hot cells).  | 0B006   |
| II.A0.013 | "Natural uranium" or "depleted uranium" or thorium in the form of metal, alloy, chemical compound or concentrate and any other material containing one or more of the foregoing, other than those specified in 0C001.  | 0C001   |

## A1 Materials, chemicals, 'micro-organisms' and 'toxins'

| No        | Description   | Related item from<br>Annex I to<br>Regulation (EC)<br>No 394/2006 |
|-----------|---|---|
| II.A1.001 | Bis(2-ethylhexyl) phosphoric acid (HDEHP or D2HPA) CAS 298-07-7 solvent in any quantity, with a purity greater than 90 %  | _   |
| II.A1.002 | Fluorine gas (Chemical Abstract Number (CAS) 7782-41-4), with a purity greater than 95 %  | _   |
| II.A1.003 | Seals and gaskets made of any of the following materials  a. Copolymers of vinylidene fluoride having 75 % or more beta crystalline structure without stretching;   |   |
|           | <ul> <li>b. Fluorinated polyimides containing 10 % by weight or more of combined fluorine;</li> <li>c. Fluorinated phosphazene elastomers containing 30 % by weight or more of combined fluorine;</li> </ul>  |   |
|           | d. Polychlorotrifluoroethylene (PCTFE, e.g. Kel-F ®); e. Viton fluoro-elastomers;   |   |
|           | f. Polytetrafluoroethylene (PTFE).  |   |
| II.A1.004 | Personal equipment for detecting radiation of nuclear origin, including personal dosimeters   | 1A004.c   |
|           | Note: This item does not control nuclear detection systems defined in item 1A004.c  |   |
| II.A1.005 | Electrolytic cells for fluorine production with an output capacity greater than 100 g of fluorine per hour.   | 1B225   |
|           | Note: This item does not control electrolytic cells defined in item 1B225   |   |
| II.A1.006 | Platinised catalysts, other than those specified in 1A225, 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 and substitutes therefor. | 1B231, 1A225  |

| No        | Description   | Related item from<br>Annex I to<br>Regulation (EC)<br>No 394/2006 |
|-----------|---|---|
| II.A1.007 | Aluminium and its alloys, other than those specified in 1C002.b.4 or 1C202.a, in crude or semi-fabricated form having either of the following characteristics:  a. Capable of an ultimate tensile strength of 460 MPa or more at 293 K (20 °C); or b. Having a tensile strength of 415 MPa or more at 298 K (25 °C).  | 1C002.b.4<br>1C202.a  |
| II.A1.008 | Magnetic metals, of all types and of whatever form, having an initial relative permeability of 120 000 or more and a thickness between 0,05 and 0,1 mm  | 1C003.a   |
| II.A1.009 | <ul> <li>"Fibrous or filamentary materials" or prepregs, as follows:</li> <li>a. Carbon or aramid "fibrous or filamentary materials" having either of the following characteristics:</li> <li>1. A "specific modulus" exceeding 10 × 10<sup>6</sup> m; or</li> <li>2. A "specific tensile strength" exceeding 17 × 10<sup>4</sup> m;</li> <li>b. Glass "fibrous or filamentary materials" having either of the following characteristics:</li> <li>1. A "specific modulus" exceeding 3.18 × 10<sup>6</sup> m; or</li> <li>2. A "specific tensile strength" exceeding 76,2 × 10<sup>3</sup> m;</li> <li>c. Thermoset resin impregnated continuous "yarns", "rovings", "tows" or "tapes" with a width of 15 mm or less (prepregs), made from carbon or glass "fibrous or filamentary materials" other than those specified in II.A1.010.a. or b.</li> </ul> | 1C010.a,<br>1C010.b,<br>1C210.a,<br>1C210.b                       |
|           | Note: This item does not control fibrous or filamentary materials defined in items 1C010.a, 1C010.b, 1C210.a and 1C210.b  |   |
| II.A1.010 | Resin-impregnated or pitch-impregnated fibres (prepregs), metal or carbon-coated fibres (preforms) or "carbon fibre preforms", as follows:  a. made from "fibrous or filamentary materials" specified in II.A1.009 above;  b. Epoxy resin "matrix" impregnated carbon "fibrous or filamentary materials" (prepregs), specified in 1C010.a., 1C010.b. or 1C010.c., for the repair of aircraft structures or laminates, in which the size of individual sheets of prepreg does not exceed 50 cm × 90 cm;  c. Prepregs specified in 1C010.a., 1C010.b. or 1C010.c., when impregnated with phenolic or epoxy resins having a glass transition temperature (Tg) less than 433 K (160 °C) and a cure temperature lower than the glass transition temperature.  Note: This item does not control fibrous or filamentary materials defined in item 1C010.e        | 1C010.e, 1C210  |
| II.A1.011 | Reinforced silicon carbide ceramic composites usable for nose tips, re-entry vehicles, nozzle flaps, usable in "missiles", other than specified in 1C107.   | 1C107   |
| II.A1.012 | Maraging steels, other than those specified in 1C116 or 1C216, 'capable of' an ultimate tensile strength of 2 050 MPa or more, at 293 K (20 °C).  Technical Note:  The phrase maraging steel 'capable of' encompasses maraging steel before or after heat treatment.  | 1C216   |

| No        | Description   | Related item from<br>Annex I to<br>Regulation (EC)<br>No 394/2006 |
|-----------|---|---|
| II.A1.013 | Tungsten, tantalum, tungsten carbide, tantalum carbide and alloys, having both of the following characteristics:  a. In forms having a hollow cylindrical or spherical symmetry (including cylinder segments) with an inside diameter between 50 mm and 300 mm; and  b. A mass greater than 5 kg.  Note: This item does not control tungsten, tungsten carbide and alloys defined in item 1C226 | 1C226   |

## A2 Materials Processing

| Description  | Related item from<br>Annex I to<br>Regulation (EC)<br>No 394/2006  |
|--|--|
| Vibration test systems, equipment and components therefor, other than those specified in 2B116:  | 2B116  |
| a. Vibration test systems employing feedback or closed loop techniques and incorporating a digital controller, capable of vibrating a system at an acceleration equal to or greater than 0,1g rms between 0,1 Hz and 2 kHz and imparting forces equal to or greater than 50 kN, measured "bare table"; |  |
| b. Digital controllers, combined with specially designed vibration test software, with a 'real-time bandwidth' greater than 5 kHz designed for use with vibration test systems specified in a.;  |  |
| c. Vibration thrusters (shaker units), with or without associated amplifiers, capable of imparting a force equal to or greater than 50 kN, measured 'bare table', and usable in vibration test systems specified in a.;  |  |
| d. Test piece support structures and electronic units designed to combine multiple shaker units in a system capable of providing an effective combined force equal to or greater than 50 kN, measured 'bare table', and usable in vibration systems specified in a.                                    |  |
| Technical note: 'bare table' means a flat table, or surface, with no fixture or fittings.  |  |
| Machine tools for grinding having positioning accuracies with 'all compensations available' equal to or less (better) than 15 $\mu m$ according to ISO 230/2 (1988) (1) or national equivalents along any linear axis.   | 2B201.b,<br>2B001.c  |
| Note: This item does not control machine tools for grinding defined in items 2B201.b and 2B001.c   |  |
| Components and numerical controls, specially designed for machine tools specified in 2B001, 2B201, or in II.A2.002 above.  |  |
|  | <ul> <li>Vibration test systems, equipment and components therefor, other than those specified in 2B116:</li> <li>a. Vibration test systems employing feedback or closed loop techniques and incorporating a digital controller, capable of vibrating a system at an acceleration equal to or greater than 0,1g rms between 0,1 Hz and 2 kHz and imparting forces equal to or greater than 50 kN, measured "bare table";</li> <li>b. Digital controllers, combined with specially designed vibration test software, with a 'real-time bandwidth' greater than 5 kHz designed for use with vibration test systems specified in a.;</li> <li>c. Vibration thrusters (shaker units), with or without associated amplifiers, capable of imparting a force equal to or greater than 50 kN, measured 'bare table', and usable in vibration test systems specified in a.;</li> <li>d. Test piece support structures and electronic units designed to combine multiple shaker units in a system capable of providing an effective combined force equal to or greater than 50 kN, measured 'bare table', and usable in vibration systems specified in a.</li> <li>Technical note: 'bare table' means a flat table, or surface, with no fixture or fittings.</li> <li>Machine tools for grinding having positioning accuracies with 'all compensations available' equal to or less (better) than 15 μm according to ISO 230/2 (1988) (1) or national equivalents along any linear axis.</li> <li>Note: This item does not control machine tools for grinding defined in items 2B201.b and 2B001.c</li> <li>Components and numerical controls, specially designed for machine tools specified in</li> </ul> |

| No        | Description  | Related item from<br>Annex I to<br>Regulation (EC)<br>No 394/2006 |
|-----------|--|---|
| II.A2.003 | Balancing machines and related equipment as follows:   | 2B119   |
|           | a. Balancing machines, designed or modified for dental or other medical equipment, having all the following characteristics:   |   |
|           | 1. Not capable of balancing rotors/assemblies having a mass greater than 3 kg;   |   |
|           | 2. Capable of balancing rotors/assemblies at speeds greater than 12 500 rpm;   |   |
|           | 3. Capable of correcting unbalance in two planes or more; and  |   |
|           | 4. Capable of balancing to a residual specific unbalance of 0,2 g mm per kg of rotor mass;   |   |
|           | b. Indicator heads designed or modified for use with machines specified in a. above.   |   |
|           | Technical note: Indicator heads are sometimes known as balancing instrumentation.  |   |
| II.A2.004 | Remote manipulators that can be used to provide remote actions in radiochemical separation operations or hot cells, other than those specified in 2B225, having either of the following characteristics: | 2B225   |
|           | a. A capability of penetrating 0,3 m or more of hot cell wall (through the wall operation); or   |   |
|           | b. A capability of bridging over the top of a hot cell wall with a thickness of 0,3 m or more (over the wall operation).   |   |
|           | Technical note:  Remote manipulators provide translation of human operator actions to a remote operating arm and terminal fixture. They may be of 'master/slave' type or operated by joystick or keypad. |   |
| II.A2.005 | Controlled atmosphere heat treatment furnaces, as follows:   | 2B226, 2B227  |
|           | Furnaces capable of operation at temperatures above 400 °C.  |   |
| II.A2.006 | Oxidation furnaces capable of operation at temperatures above 400 °C   | 2B226, 2B227  |
| II.A2.007 | 'Pressure transducers', other than those defined in 2B230, capable of measuring absolute pressures at any point in the range 0 to 200 kPa and having both of the following characteristics:              | 2B230   |
|           | a. Pressure sensing elements made of or protected by "Materials resistant to corrosion by ${\rm UF}_6$ ", and  |   |
|           | b. Having either of the following characteristics:   |   |
|           | 1. A full scale of less than 200 kPa and an 'accuracy' of better than ± 1 % of full scale; or  |   |
|           | 2. A full scale of 200 kPa or greater and an 'accuracy' of better than 2 kPa.  |   |
|           | Technical note:  |   |
|           | For the purposes of 2B30, 'accuracy' includes non-linearity, hysteresis and repeatability at ambient temperature.  |   |



| II.A2.008  Liquid-liquid contacting equipment (mixer-settlers, pulsed columns, centringal contactors); and liquid distributor, vapour distributor or liquid collectors designed for such equipment, where all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Alloys with more than 25 % nickel and 20 % chromium by weight;  2. Fluoropolymers;  3. Glass (including vitrified or enamelled coating or glass lining);  4. Graphite or 'carbon graphite';  5. Nickel or alloys with more than 40 % nickel by weight;  6. Tantalum or tantalum alloys;  7. Titanium or trianium alloys;  8. Zirconium or zirconium alloys; or  9. Stainless steel.  Technical note:  Carbon graphite' is a composition consisting of amorphous carbon and graphite, in which the graphite content is 8 % or more by weight.  II.A2.009  Industrial equipment and components, other than those specified in 2B350.d, as follows:  Heat exchangers or condensers with a heat transfer surface area greater than 0.05 m², and less than 30 m²; and tobes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluid(s) are made from any of the following materials:  1. Alloys with more than 25 % nickel and 20 % chromium by weight;  2. Fluoropolymers;  3. Glass (including vitrified or enamelled coatings or glass lining);  4. Graphite or 'carbon graphite';  5. Nickel or alloys with more than 40 % nickel by weight;  6. Tantalum or tantium alloys;  7. Titanium or titanium alloys;  8. Zirconium or zirconium alloys;  9. Silkon carbide;  10. Titanium carbide; or  11. Stainless steel.  Note: This item does not control vehicle radiators.  II.A2.010  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with mundiacturer's specified maximum flow-rate greater than 6,0 m²/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 6,0 m²/hour, or yacuum pumps with manuf | No        | Description   | Related item from<br>Annex I to<br>Regulation (EC)<br>No 394/2006 |
|--|-----------|---|---|
| 2. Fluoropolymers; 3. Glass (including vitrified or enamelled coating or glass lining); 4. Graphite or 'carbon graphite'; 5. Nickel or alloys with more than 40 % nickel by weight; 6. Tantalum or tantalum alloys; 7. Titanium or zirconium alloys; 8. Zirconium or zirconium alloys; 9. Stainless steel. Technical note: 'Carbon graphite' is a composition consisting of amorphous carbon and graphite, in which the graphite content is 8 % or more by weight.  II.A2.009 Industrial equipment and components, other than those specified in 2B350.d, as follows: Heat exchangers or condensers with a heat transfer surface area greater than 0.05 m², and less than 30 m²; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluid(s) are made from any of the following materials:  1. Alloys with more than 25 % nickel and 20 % chromium by weight;  2. Fluoropolymers; 3. Glass (including vitrified or enamelled coatings or glass lining): 4. Graphite or 'carbon graphite'; 5. Nickel or alloys with more than 40 % nickel by weight; 6. Tantalum or tantalum alloys; 8. Zirconium or zirconium alloys; 9. Silicon carbide; 10. Titanium carbide; or 11. Stainless steel. Note: This item does not control vehicle radiators.  II.A2.010 Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0.6 m²/hour, or vacuum pumps with manufacturer's specified maximum flow-wate greater than 5 m²/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kt²a) conditions); and casing (nump bodies), preformed casing liness, impeliers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel.   | II.A2.008 | contactors); and liquid distributor, vapour distributor or liquid collectors designed for such equipment, where all surfaces that come in direct contact with the chemical(s)   | 2B350.e   |
| 3. Glass (including vitrified or enamelled coating or glass lining): 4. Graphite or 'carbon graphite'; 5. Nickel or alloys with more than 40 % nickel by weight; 6. Tantalum or tantalum alloys; 7. Titanium or titanium alloys; 8. Zirronium or zirconium alloys; or 9. Stainless steel.  Technical note:  'Carbon graphite' is a composition consisting of amorphous carbon and graphite, in which the graphite content is 8 % or more by weight.  II.A2.009  Industrial equipment and components, other than those specified in 2B350.d, as follows:  Heat exchangers or condensers with a heat transfer surface area greater than 0.05 m², and less than 30 m²; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluid(s) are made from any of the following materials:  1. Alloys with more than 25 % nickel and 20 % chromium by weight;  2. Fluoropolymers; 3. Glass (including vitrified or enamelled coatings or glass lining); 4. Graphite or 'carbon graphite'; 5. Nickel or alloys with more than 40 % nickel by weight; 6. Tantalum or tantalum alloys; 7. Titanium or titanium alloys; 8. Zirconium or zirconium alloys; 9. Silicon carbide; 10. Titanium carbide; or 11. Stainless steel.  Note: This item does not control vehicle radiators.  II.A2.010  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 6 m³/hour or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101.3 kPa) conditions; and casings (pump bodies), performed casing lines, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,               |           | 1. Alloys with more than 25 % nickel and 20 % chromium by weight;   |   |
| 4. Graphite or 'carbon graphite'; 5. Nickel or alloys with more than 40 % nickel by weight; 6. Tantalum or tantalum alloys; 7. Titanium or titanium alloys; 8. Zirconium or zirconium alloys; or 9. Stainless steel.  Technical note:  'Carbon graphite' is a composition consisting of amorphous carbon and graphite, in which the graphite content is 8 % or more by weight.  II.A2.009  Industrial equipment and components, other than those specified in 2B350.d, as follows:  Heat exchangers or condensers with a heat transfer surface area greater than 0.05 m², and less than 30 m²; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluid's) are made from any of the following materials:  1. Alloys with more than 25 % nickel and 20 % chromium by weight;  2. Fluoropolymers;  3. Glass (including vitrified or enamelled coatings or glass lining);  4. Graphite or 'carbon graphite';  5. Nickel or alloys with more than 40 % nickel by weight;  6. Tantalum or tantalum alloys;  7. Titanium or titanium alloys;  8. Zirconium or zirconium alloys;  9. Silicon carbide;  10. Titanium carbide; or  11. Stainless steel.  Note: This item does not control vehicle radiators.  II.A2.010  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101.3 kPa) conditions; and casings (pump bodies, preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,  |           | 2. Fluoropolymers;  |   |
| 5. Nickel or alloys with more than 40 % nickel by weight; 6. Tantalum or tantalum alloys; 7. Titanium or titanium alloys; 8. Zirconium or zirconium alloys; or 9. Stainless steel. Technical note: Varbon graphite' is a composition consisting of amorphous carbon and graphite, in which the graphite content is 8 % or more by weight.  II.A2.009 Industrial equipment and components, other than those specified in 2B350.d, as follows: Heat exchangers or condensers with a heat transfer surface area greater than 0.05 m², and less than 30 m²; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluid(s) are made from any of the following materials:  1. Alloys with more than 25 % nickel and 20 % chromium by weight; 2. Fluoropolymers; 3. Glass (including vitrified or enamelled coatings or glass lining); 4. Graphite or 'carbon graphite'; 5. Nickel or alloys with more than 40 % nickel by weight; 6. Tantalum or tantalum alloys; 7. Titanium or titanium alloys; 8. Zirconium or zirconium alloys; 9. Silicon carbide; or 11. Stainless steel. Note: This item does not control vehicle radiators.  II.A2.010 Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0.6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 0.6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101.3 k7a) conditions; and casings (pump bodies), performed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,  |           | 3. Glass (including vitrified or enamelled coating or glass lining);  |   |
| 6. Tantalum or tantalum alloys; 7. Titanium or titanium alloys; 8. Zirconium or zirconium alloys; or 9. Stainless steel. Technical note:  'Carbon graphite' is a composition consisting of amorphous carbon and graphite, in which the graphite content is 8 % or more by weight.  II.A2.009  II.A2.009  II.A2.009  Industrial equipment and components, other than those specified in 2B350.d, as follows: Heat exchangers or condensers with a heat transfer surface area greater than 0.05 m², and less than 30 m²; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluid(s) are made from any of the following materials:  1. Alloys with more than 25 % nickel and 20 % chromium by weight; 2. Huoropolymers; 3. Glass (including vitrified or enamelled coatings or glass lining); 4. Graphite or 'carbon graphite'; 5. Nickel or alloys with more than 40 % nickel by weight; 6. Tantalum or tantalum alloys; 7. Titanium or titanium alloys; 8. Zirconium or zirconium alloys; 9. Silicon carbide; or 11. Stainless steel. Note: This item does not control vehicle radiators.  II.A2.010  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0 fm²/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m²/hour (measured under standard temperature (273 K (0 °C)) and pressure (1013 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,  |           | 4. Graphite or 'carbon graphite';   |   |
| 7. Titanium or titanium alloys; 8. Zirconium or zirconium alloys; or 9. Stainless steel. Technical note:  "Carbon graphite' is a composition consisting of amorphous carbon and graphite, in which the graphite content is 8 % or more by weight.  II.A2.009 Industrial equipment and components, other than those specified in 2B350.d, as follows:  Heat exchangers or condensers with a heat transfer surface area greater than 0.05 m², and less than 30 m²; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluidly are made from any of the following materials:  1. Alloys with more than 25 % nickel and 20 % chromium by weight;  2. Fluoropolymers;  3. Glass (including vitrified or enamelled coatings or glass lining);  4. Graphite or 'carbon graphite';  5. Nickel or alloys with more than 40 % nickel by weight;  6. Tantalum or tantalum alloys;  7. Titanium or titanium alloys;  8. Zirconium or zirconium alloys;  9. Silicon carbide;  10. Titanium carbide; or  11. Stainless steel.  Note: This item does not control vehicle radiators.  II.A2.010 Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m²/lbour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 0,6 m²/lbour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m²/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed caising liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel.   |           | 5. Nickel or alloys with more than 40 % nickel by weight;   |   |
| 8. Zirconium or zirconium alloys; or 9. Stainless steel. Technical note:  "Carbon graphite' is a composition consisting of amorphous carbon and graphite, in which the graphite content is 8 % or more by weight.  II.A2.009 Industrial equipment and components, other than those specified in 2B350.d, as follows:  Heat exchangers or condensers with a heat transfer surface area greater than 0.05 m², and less than 30 m²; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluid(s) are made from any of the following materials:  1. Alloys with more than 25 % nickel and 20 % chromium by weight;  2. Huoropolymers;  3. Glass (including vitrified or enamelled coatings or glass lining);  4. Graphite or 'carbon graphite';  5. Nickel or alloys with more than 40 % nickel by weight;  6. Tantalum or tantalum alloys;  7. Titanium or titanium alloys;  8. Zirconium or zirconium alloys;  9. Silicon carbide;  10. Titanium carbide; or  11. Stainless steel.  Note: This item does not control vehicle radiators.  II.A2.010 Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0 m²/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m²/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel.  |           | 6. Tantalum or tantalum alloys;   |   |
| 9. Stainless steel.  Technical note:  'Carbon graphite' is a composition consisting of amorphous carbon and graphite, in which the graphite content is 8 % or more by weight.  ILA2.009  Industrial equipment and components, other than those specified in 2B350.d, as follows:  Heat exchangers or condensers with a heat transfer surface area greater than 0.05 m², and less than 30 m²; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluid(s) are made from any of the following materials:  1. Alloys with more than 25 % nickel and 20 % chromium by weight;  2. Fluoropolymers;  3. Glass (including vitrified or enamelled coatings or glass lining);  4. Graphite or 'carbon graphite';  5. Nickel or alloys with more than 40 % nickel by weight;  6. Tantalum or tantalum alloys;  7. Titanium or titanium alloys;  8. Zirconium or zirconium alloys;  9. Silicon carbide;  10. Titanium carbide; or  11. Stainless steel.  Note: This item does not control vehicle radiators.  ILA2.010  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 0 m²/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 k²a) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,   |           | 7. Titanium or titanium alloys;   |   |
| Technical note:  'Carbon graphite' is a composition consisting of amorphous carbon and graphite, in which the graphite content is 8 % or more by weight.  II.A2.009  Industrial equipment and components, other than those specified in 2B350.d, as follows:  Heat exchangers or condensers with a heat transfer surface area greater than 0,05 m², and less than 30 m²; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluid(s) are made from any of the following materials:  1. Alloys with more than 25 % nickel and 20 % chromium by weight;  2. Fluoropolymers;  3. Glass (including vitrified or enamelled coatings or glass lining);  4. Graphite or 'carbon graphite';  5. Nickel or alloys with more than 40 % nickel by weight;  6. Tantalum or tantalum alloys;  7. Titanium or titanium alloys;  8. Zirconium or zirconium alloys;  9. Silicon carbide;  10. Titanium carbide; or  11. Stainless steel.  Note: This item does not control vehicle radiators.  II.A2.010  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than greater than 5 m³/hour (neasured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,   |           | 8. Zirconium or zirconium alloys; or  |   |
| 'Carbon graphite' is a composition consisting of amorphous carbon and graphite, in which the graphite content is 8 % or more by weight.  II.A2.009 Industrial equipment and components, other than those specified in 2B350.d, as follows: Heat exchangers or condensers with a heat transfer surface area greater than 0.05 m², and less than 30 m²; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluid(s) are made from any of the following materials:  1. Alloys with more than 25 % nickel and 20 % chromium by weight;  2. Fluoropolymers;  3. Glass (including vitrified or enamelled coatings or glass lining):  4. Graphite or 'carbon graphite';  5. Nickel or alloys with more than 40 % nickel by weight;  6. Tantalum or tantalum alloys;  7. Titanium or zirconium alloys;  8. Zirconium or zirconium alloys;  9. Silicon carbide;  10. Titanium carbide; or  11. Stainless steel.  Note: This item does not control vehicle radiators.  II.A2.010 Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °0) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,  |           | 9. Stainless steel.   |   |
| II.A2.009 Industrial equipment and components, other than those specified in 2B350.d, as follows:  Heat exchangers or condensers with a heat transfer surface area greater than 0.05 m², and less than 30 m²; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluid(s) are made from any of the following materials:  1. Alloys with more than 25 % nickel and 20 % chromium by weight;  2. Fluoropolymers;  3. Glass (including vitrified or enamelled coatings or glass lining);  4. Graphite or 'carbon graphite';  5. Nickel or alloys with more than 40 % nickel by weight;  6. Tantalum or tantalum alloys;  7. Titanium or titanium alloys;  8. Zirconium or zirconium alloys;  9. Silicon carbide;  10. Titanium carbide; or  11. Stainless steel.  Note: This item does not control vehicle radiators.  II.A2.010  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0.6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 0.7 m²/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 0.7 m²/hour, or procude designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,   |           | Technical note:   |   |
| Heat exchangers or condensers with a heat transfer surface area greater than 0,05 m², and less than 30 m²; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluid(s) are made from any of the following materials:  1. Alloys with more than 25 % nickel and 20 % chromium by weight;  2. Fluoropolymers;  3. Glass (including vitrified or enamelled coatings or glass lining);  4. Graphite or 'carbon graphite';  5. Nickel or alloys with more than 40 % nickel by weight;  6. Tantalum or tantalum alloys;  7. Titanium or titanium alloys;  8. Zirconium or zirconium alloys;  9. Silicon carbide;  10. Titanium carbide; or  11. Stainless steel.  Note: This item does not control vehicle radiators.  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing lines, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,  |           |   |   |
| and less than 30 m²; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the fluid(s) are made from any of the following materials:  1. Alloys with more than 25 % nickel and 20 % chromium by weight;  2. Fluoropolymers;  3. Glass (including vitrified or enamelled coatings or glass lining);  4. Graphite or 'carbon graphite';  5. Nickel or alloys with more than 40 % nickel by weight;  6. Tantalum or tantalum alloys;  7. Titanium or titanium alloys;  8. Zirconium or zirconium alloys;  9. Silicon carbide;  10. Titanium carbide; or  11. Stainless steel.  Note: This item does not control vehicle radiators.  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,   | II.A2.009 |   | 2B350.d   |
| 2. Fluoropolymers; 3. Glass (including vitrified or enamelled coatings or glass lining); 4. Graphite or 'carbon graphite'; 5. Nickel or alloys with more than 40 % nickel by weight; 6. Tantalum or tantalum alloys; 7. Titanium or zirconium alloys; 8. Zirconium or zirconium alloys; 9. Silicon carbide; 10. Titanium carbide; or 11. Stainless steel. Note: This item does not control vehicle radiators.  II.A2.010  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0.6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,   |           | and less than 30 m <sup>2</sup> ; and tubes, plates, coils or blocks (cores) designed for such heat exchangers or condensers, where all surfaces that come in direct contact with the   |   |
| 3. Glass (including vitrified or enamelled coatings or glass lining); 4. Graphite or 'carbon graphite'; 5. Nickel or alloys with more than 40 % nickel by weight; 6. Tantalum or tantalum alloys; 7. Titanium or zirconium alloys; 8. Zirconium or zirconium alloys; 9. Silicon carbide; 10. Titanium carbide; or 11. Stainless steel. Note: This item does not control vehicle radiators.  II.A2.010  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0.6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,  |           | 1. Alloys with more than 25 % nickel and 20 % chromium by weight;   |   |
| 4. Graphite or 'carbon graphite';  5. Nickel or alloys with more than 40 % nickel by weight;  6. Tantalum or tantalum alloys;  7. Titanium or titanium alloys;  8. Zirconium or zirconium alloys;  9. Silicon carbide;  10. Titanium carbide; or  11. Stainless steel.  Note: This item does not control vehicle radiators.  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,  |           | 2. Fluoropolymers;  |   |
| 5. Nickel or alloys with more than 40 % nickel by weight; 6. Tantalum or tantalum alloys; 7. Titanium or titanium alloys; 8. Zirconium or zirconium alloys; 9. Silicon carbide; 10. Titanium carbide; or 11. Stainless steel. Note: This item does not control vehicle radiators.  II.A2.010  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,   |           | 3. Glass (including vitrified or enamelled coatings or glass lining);   |   |
| 6. Tantalum or tantalum alloys; 7. Titanium or titanium alloys; 8. Zirconium or zirconium alloys; 9. Silicon carbide; 10. Titanium carbide; or 11. Stainless steel. Note: This item does not control vehicle radiators.  II.A2.010  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,   |           | 4. Graphite or 'carbon graphite';   |   |
| 7. Titanium or titanium alloys;  8. Zirconium or zirconium alloys;  9. Silicon carbide;  10. Titanium carbide; or  11. Stainless steel.  Note: This item does not control vehicle radiators.  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,   |           | 5. Nickel or alloys with more than 40 % nickel by weight;   |   |
| 8. Zirconium or zirconium alloys; 9. Silicon carbide; 10. Titanium carbide; or 11. Stainless steel.  Note: This item does not control vehicle radiators.  II.A2.010  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,  |           | 6. Tantalum or tantalum alloys;   |   |
| 9. Silicon carbide; 10. Titanium carbide; or 11. Stainless steel.  Note: This item does not control vehicle radiators.  II.A2.010  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,  |           | 7. Titanium or titanium alloys;   |   |
| 10. Titanium carbide; or 11. Stainless steel.  Note: This item does not control vehicle radiators.  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,   |           | 8. Zirconium or zirconium alloys;   |   |
| II.A2.010  Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,  |           | 9. Silicon carbide;   |   |
| II.A2.010 Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,   |           | 10. Titanium carbide; or  |   |
| II.A2.010 Multiple-seal, and seal-less pumps, other than those specified in 2B350i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,   |           | 11. Stainless steel.  |   |
| corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of the following materials:  1. Stainless steel,  |           | Note: This item does not control vehicle radiators.   |   |
|  | II.A2.010 | corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m³/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m³/hour (measured under standard temperature (273 K (0 °C)) and pressure (101,3 kPa) conditions); and casings (pump bodies), preformed casing liners, impellers, rotors or jet pump nozzles designed for such pumps, in which all surfaces that come in direct contact with the chemical(s) being processed are made from any of | 2B350.i   |
| 2. Aluminium alloy.  |           | 1. Stainless steel,   |   |
|  |           | 2. Aluminium alloy.   |   |

| No        | Description   | Related item from<br>Annex I to<br>Regulation (EC)<br>No 394/2006 |
|-----------|---|---|
| II.A2.011 | Centrifugal separators, capable of continuous separation without the propagation of aerosols and manufactured from: | 2B352.c   |
|           | 1. Alloys with more than 25 % nickel and 20 % chromium by weight;   |   |
|           | 2. Fluoropolymers;  |   |
|           | 3. Glass (including vitrified or enamelled coating or glass lining);  |   |
|           | 4. Nickel or alloys with more than 40 % nickel by weight;   |   |
|           | 5. Tantalum or tantalum alloys;   |   |
|           | 6. Titanium or titanium alloys; or  |   |
|           | 7. Zirconium or zirconium alloys.   |   |
|           | Note: This item does not control centrifugal separators defined in item 2B352.c.                                    |   |
| II.A2.012 | Sintered metal filters made of nickel or nickel alloy with a nickel content of 40 % or more by weight.              | 2B352.d   |
|           | Note: This item does not control filters defined in item 2B352.d.   |   |

## A3 Electronics

| No        | Description  | Related item from<br>Annex I to<br>Regulation (EC)<br>No 394/2006 |
|-----------|--|---|
| II.A3.001 | High voltage direct current power supplies having both of the following characteristics:  a. Capable of continuously producing, over a time period of eight hours, 10 kV or greater, with output power of 5 kW or greater with or without sweeping; and b. Current or voltage stability better than 0,1 % over a time period of four hours.  Note: This item does not control power supplies defined in items 0B001.j.5 and 3A227.   | 3A227   |
| II.A3.002 | <ul> <li>Mass spectrometers, other than those specified in 3A233 or 0B002g, capable of measuring ions of 200 atomic mass units or greater and having a resolution of better than 2 parts in 200, as follows, and ion sources therefor:</li> <li>a. Inductively coupled plasma mass spectrometers (ICP/MS);</li> <li>b. Glow discharge mass spectrometers (GDMS);</li> <li>c. Thermal ionisation mass spectrometers (TIMS);</li> <li>d. Electron bombardment mass spectrometers which have a source chamber constructed from, lined with or plated with "Materials resistant to corrosion by UF<sub>6</sub>";</li> <li>e. Molecular beam mass spectrometers having either of the following characteristics:</li> <li>1. A source chamber constructed from, lined with or plated with stainless steel or molybdenum and equipped with a cold trap capable of cooling to 193 K (-80 °C) or less; or</li> <li>2. A source chamber constructed from, lined with or plated with "Materials resistant to corrosion by UF<sub>6</sub>";</li> <li>f. Mass spectrometers equipped with a microfluorination ion source designed for actinides or actinide fluorides.</li> </ul> | 3A233   |

## A6 Sensors and Lasers

| No        | Description   | Related item from<br>Annex I to<br>Regulation (EC)<br>No 394/2006 |
|-----------|---|---|
| II.A6.001 | Yttrium aluminium garnet (YAG) rods   |   |
| II.A6.002 | Infrared optics in the wavelength range 9–17 µm and components therefor, including cadmium telluride (CdTe) components.  Note: This item does not control cameras and components defined in item 6A003  | 6A003   |
|           | The first action and total components action at the street  |   |
| II.A6.003 | Wave front corrector systems for use with a laser beam having a diameter exceeding 4 mm, and specially designed components therefor, including control systems, phase front sensors and "deformable mirrors" including bimorph mirrors.                       | 6A004.a,<br>6A005.e,<br>6A005.f                                   |
|           | Note: This item does not control mirrors defined in 6A004.a, 6A005.e and 6A005.f  |   |
| II.A6.004 | Argon ion "lasers" having an average output power equal to or greater than 5 W  | 6A005.a.6,<br>6A205.a   |
|           | Note: This item does not control argon ion "lasers" defined in items 0B001.g.5., 6A005 and 6A205.a  |   |
| II.A6.005 | Semiconductor "lasers" and components therefor, as follows:   | 6A005.b   |
|           | a. Individual semiconductor "lasers" with an output power greater than 200 mW each, in quantities larger than 100;  |   |
|           | b. Semiconductor "laser" arrays having an output power greater than 20 W.  Notes:   |   |
|           | 1. Semiconductor "lasers" are commonly called "laser" diodes.   |   |
|           | 2. This item does not control "lasers" defined in items 0B001.g.5, 0B001.h.6 and 6A005b.  |   |
|           | 3. This item does not control "laser" diodes with a wavelength in the range 1 200–2 000 nm.   |   |
| II.A6.006 | Tunable semiconductor "lasers" and tunable semiconductor "laser" arrays, of a wavelength between 9 $\mu m$ and 17 $\mu m$ , as well as array stacks of semiconductor "lasers" containing at least one tunable semiconductor "laser array" of such wavelength. | 6A005.b   |
|           | Notes:  |   |
|           | 1. Semiconductor "lasers" are commonly called "laser" diodes.   |   |
|           | 2. This item does not control semiconductor "lasers" defined in items 0B001.h.6 and 6A005.b.  |   |
| II.A6.007 | Solid state "tunable" "lasers" as follows, and specially designed components therefor:  | 6A005.c.1   |
|           | a. Titanium-sapphire lasers;  |   |
|           | b. Alexandrite lasers.  |   |
|           | Note: This item does not control titanium-sapphire and alexandrite lasers defined in items 0B001.g.5, 0B001.h.6 and 6A005.c.1   |   |

| No        | Description   | Related item from<br>Annex I to<br>Regulation (EC)<br>No 394/2006 |
|-----------|---|---|
| II.A6.008 | Neodymium-doped (other than glass) "lasers", having an output wavelength exceeding 1 000 nm but not exceeding 1 100 nm and output energy exceeding 10 J per pulse.  | 6A005.c.2   |
|           | Note: This item does not control neodymium-doped (other than glass) "lasers" defined in item 6A005.c.2.b  |   |
| II.A6.009 | Components of acousto-optics, as follows:   | 6A203.b.4.c   |
|           | a. Framing tubes and solid-state imaging devices having a recurrence frequency equal to or exceeding 1kHz;  |   |
|           | b. Recurrence frequency supplies;   |   |
|           | c. Pockels cells.   |   |
| II.A6.010 | Radiation-hardened cameras, or lenses therefor, other than those specified in 6A203c, specially designed or rated as radiation hardened to withstand a total radiation dose greater than $50 \times 10^3$ Gy(silicon) (5 × $10^6$ rad (silicon)) without operational degradation. | 6A203.c   |
|           | Technical note:  The term Gy(silicon) refers to the energy in Joules per kilogram absorbed by an unshielded silicon sample when exposed to ionising radiation.  |   |
| II.A6.011 | Tunable pulsed dye laser amplifiers and oscillators, having all of the following characteristics:   | 6A205.c   |
|           | 1. Operating at wavelengths between 300 nm and 800 nm;  |   |
|           | 2. An average output power greater than 10 W but not exceeding 30 W;  |   |
|           | 3. A repetition rate greater than 1 kHz; and  |   |
|           | 4. Pulse width less than 100 ns.  |   |
|           | Notes:  |   |
|           | 1. This item does not control single mode oscillators.  |   |
|           | 2. This item does not control tunable pulsed dye laser amplifiers and oscillators defined in item 6A205.c, 0B001.g.5 and 6A005  |   |
| II.A6.012 | Pulsed carbon dioxide "lasers" having all of the following characteristics:   | 6A205.d   |
|           | 1. Operating at wavelengths between 9 000 nm and 11 000 nm;   |   |
|           | 2. A repetition rate greater than 250 Hz;   |   |
|           | 3. An average output power greater than 100 W but not exceeding 500 W; and  |   |
|           | 4. Pulse width of less than 200 ns.   |   |
|           | Note: This item does not control pulsed carbon dioxide laser amplifiers and oscillators defined in item 6A205.d, 0B001.h.6 and 6A005d.  |   |

## A7 Navigation and Avionics

| No        | Description  | Related item from<br>Annex I to<br>Regulation (EC)<br>No 394/2006 |
|-----------|--|---|
| II.A7.001 | Inertial systems and specially designed components, as follows:  | 7A003, 7A103  |
|           | I. Inertial navigation systems which are certified for use on "civil aircraft" by civil authorities of a State participating in the Wassenaar Arrangement, and specially designed components, as follows:  |   |
|           | a. Inertial navigation systems (INS) (gimballed or strapdown) and inertial equipment designed for "aircraft", land vehicle, vessels (surface or underwater) or "spacecraft" for attitude, guidance or control, having any of the following characteristics, and specially designed components therefor:  |   |
|           | 1. Navigation error (free inertial) subsequent to normal alignment of 0,8 nautical mile per hour (nm/hr) 'Circular Error Probable' (CEP) or less (better); or  |   |
|           | 2. Specified to function at linear acceleration levels exceeding 10 g;   |   |
|           | b. Hybrid inertial navigation systems embedded with Global Navigation Satellite Systems(s) (GNSS) or with "Data-Based Referenced Navigation" ("DBRN") System(s) for attitude, guidance or control, subsequent to normal alignment, having an INS navigation position accuracy, after loss of GNSS or "DBRN" for a period of up to four minutes, of less (better) than 10 metres 'Circular Error Probable' (CEP); |   |
|           | c. Inertial Equipment for Azimuth, Heading, or North Pointing having any of the following characteristics, and specially designed components therefor:   |   |
|           | Designed to have an Azimuth, Heading, or North Pointing accuracy equal to, or less (better) than 6 arc minutes RMS at 45 degrees latitude; or  |   |
|           | 2. Designed to have a non-operating shock level of 900 g or greater at a duration of 1 msec, or greater.   |   |
|           | Note: The parameters of I.a. and I.b. are applicable with any of the following environmental conditions:   |   |
|           | 1. Input random vibration with an overall magnitude of 7,7 g rms in the first half hour and a total test duration of one and one half hour per axis in each of the three perpendicular axes, when the random vibration meets the following:  |   |
|           | a. A constant power spectral density (PSD) value of $0.04~{\rm g^2/Hz}$ over a frequency interval of 15 to 1 000 Hz; and   |   |
|           | b. The PSD attenuates with frequency from 0,04 $\rm g^2/Hz$ to 0,01 $\rm g^2/Hz$ over a frequency interval from 1 000 to 2 000 Hz;   |   |
|           | 2. A roll and yaw rate of equal to or more than + 2,62 radian/s (150 deg/s); or  |   |
|           | 3. According to national standards equivalent to 1. or 2. above.   |   |
|           |  |   |

| No | Description  | Related item from<br>Annex I to<br>Regulation (EC)<br>No 394/2006 |
|----|--|---|
|    | Technical notes:   |   |
|    | I.b. refers to systems in which an INS and other independent navigation aids are built into a single unit (embedded) in order to achieve improved performance.   |   |
|    | 2. 'Circular Error Probable' (CEP) — In a circular normal distribution, the radius of the circle containing 50 % of the individual measurements being made, or the radius of the circle within which there is a 50 % probability of being located.   |   |
|    | II. Theodolite systems incorporating inertial equipment specially designed for civil surveying purposes and designed to have an Azimuth, Heading, or North Pointing accuracy equal to, or less (better) than 6 arc minutes RMS at 45 degrees latitude, and specially designed components therefor. |   |
|    | III. Inertial or other equipment using accelerometers specified in 7A001 or 7A101, where such accelerometers are specially designed and developed as MWD (Measurement While Drilling) sensors for use in downhole well services operations.  |   |

## II.B. TECHNOLOGY

| No       | Description  | Related item from<br>Annex I to<br>Regulation (EC)<br>No 394/2006 |
|----------|--|---|
| II.B.001 | Technology required for the development, production or use of the items in Part A (Goods) above. |   |

### ANNEX III

Websites for information on the competent authorities referred to in Articles 3(4), 3(5), 5(3), 6, 8, 9, 10(1), 10(2), 13(1) and 17 and address for notifications to the European Commission

BELGIUM

http://www.diplomatie.be/eusanctions

BULGARIA

http://www.mfa.government.bg

CZECH REPUBLIC

http://www.mfcr.cz/mezinarodnisankce

DENMARK

http://www.um.dk/da/menu/Udenrigspolitik/FredSikkerhedOgInternationalRetsorden/Sanktioner/Sanktio

GERMANY

http://www.bmwi.de/BMWi/Navigation/Aussenwirtschaft/Aussenwirtschaftsrecht/embargos.html

**ESTONIA** 

http://web-visual.vm.ee/est/kat\_622/

GREECE

http://www.ypex.gov.gr/www.mfa.gr/en-US/Policy/Multilateral+Diplomacy/International+Sanctions/Policy/Multilateral+Diplomacy/International+Sanctions/Policy/Multilateral+Diplomacy/International+Sanctions/Policy/Multilateral+Diplomacy/International+Sanctions/Policy/Multilateral+Diplomacy/International+Sanctions/Policy/Multilateral+Diplomacy/International+Sanctions/Policy/Multilateral+Diplomacy/International+Sanctions/Policy/Multilateral+Diplomacy/International+Sanctions/Policy/Multilateral+Diplomacy/International+Sanctions/Policy/Multilateral+Diplomacy/International+Sanctions/Policy/Multilateral+Diplomacy/International+Sanctions/Policy/Multilateral+Diplomacy/International+Sanctions/Policy/Multilateral+Diplomacy/International+Sanctions/Policy/Multilateral+Diplomacy/International+Sanctions/Policy/Multilateral+Diplomacy/International+Sanctions/Policy/Multilateral+Diplomacy/Nultilateral+D

**SPAIN** 

www.mae.es/es/MenuPpal/Asuntos/Sanciones+Internacionales

FRANCE

http://www.diplomatie.gouv.fr/autorites-sanctions/

**IRELAND** 

 $http://www.dfa.ie/un\_eu\_restrictive\_measures\_ireland/competent\_authorities$ 

ITALY

http://www.esteri.it/UE/deroghe.html

**CYPRUS** 

http://www.mfa.gov.cy/sanctions

LATVIA

http://www.mfa.gov.lv/en/security/4539

LITHUANIA

http://www.urm.lt

LUXEMBOURG

http://www.mae.lu/sanctions

## HUNGARY

http://www.kulugyminiszterium.hu/kum/hu/bal/nemzetkozi\_szankciok.htm

### MALTA

http://www.doi.gov.mt/EN/bodies/boards/sanctions\_monitoring.asp

#### **NETHERLANDS**

http://www.minbuza.nl/sancties

#### **AUSTRIA**

http://www.bmeia.gv.at/view.php3?f\_id=12750&LNG=en&version=

### POLAND

http://www.msz.gov.pl

#### **PORTUGAL**

http://www.min-nestrangeiros.pt

#### ROMANIA

http://www.mae.ro/index.php?unde=doc&id=32311&idlnk=1&cat=3

#### SLOVENIA

http://www.mzz.gov.si/si/zunanja\_politika/mednarodna\_varnost/omejevalni\_ukrepi/

#### SLOVAKIA

http://www.foreign.gov.sk

#### **FINLAND**

http://formin.finland.fi/kvyhteistyo/pakotteet

**SWEDEN** 

### UNITED KINGDOM

http://www.fco.gov.uk/competentauthorities

Address for notifications to the European Commission:

European Commission

DG External Relations

Directorate A. Crisis Platform and Policy Coordination in CFSP

Unit A.2. Crisis Management and Conflict Prevention

CHAR 12/106

B-1049 Bruxelles/Brussel (Belgium) E-mail: relex-sanctions@ec.europa.eu

Tel.: (32 2) 295 55 85, 299 11 76

Fax: (32 2) 299 08 73

#### ANNEX IV

## List of persons, entities and bodies referred to in Article 7(1)

- A. Legal persons, entities and bodies
  - (1) Atomic Energy Organisation of Iran (AEOI). Other information: Involved in Iran's nuclear programme.
  - (2) Defence Industries Organisation (DIO). Other information: (a) Overarching MODAFL-controlled entity, some of whose subordinates have been involved in the centrifuge programme making components, and in the missile programme, (b) Involved in Iran's nuclear programme.
  - (3) Fajr Industrial Group. Other information: (a) Formerly Instrumentation Factory Plant, (b) Subordinate entity of AIO, (c) Involved in Iran's ballistic missile programme.
  - (4) Farayand Technique. Other information: (a) Involved in Iran's nuclear programme (centrifuge programme), (b) Identified in IAEA reports.
  - (5) Kala-Electric (alias Kalaye Electric). Other information: (a) Provider for PFEP Natanz, (b) Involved in Iran's nuclear programme.
  - (6) Mesbah Energy Company. Other information: (a) Provider for A40 research reactor Arak, (b) Involved in Iran's nuclear programme.
  - (7) Pars Trash Company. Other information: (a) Involved in Iran's nuclear programme (centrifuge programme), (b) Identified in IAEA reports.
  - (8) 7th of Tir. Other information: (a) Subordinate of DIO, widely recognized as being directly involved in Iran's nuclear programme, (b) Involved in Iran's nuclear programme.
  - (9) Shahid Bagheri Industrial Group (SBIG). Other information: (a) Subordinate entity of AIO, (b) Involved in Iran's ballistic missile programme.
  - (10) Shahid Hemmat Industrial Group (SHIG). Other information: (a) subordinate entity of AIO, (b) Involved in Iran's ballistic missile programme.
- B. Natural persons
  - (1) Dawood Agha-Jani. Function: Head of the PFEP (Natanz). Other information: Person involved in Iran's nuclear programme.
  - (2) Behman Asgarpour. Function: Operational Manager (Arak). Other information: Person involved in Iran's nuclear programme.

- (3) Bahmanyar Morteza Bahmanyar. Function: Head of Finance & Budget Dept, AIO. Other information: Person involved in Iran's ballistic missile programme.
- (4) Ahmad Vahid Dastjerdi. Function: Head of the AIO. Other information: Person involved in Iran's ballistic missile programme.
- (5) Reza-Gholi Esmaeli. Function: Head of Trade & International Affairs Dept, AIO. Other information: Person involved in Iran's ballistic missile programme.
- (6) Ali Hajinia Leilabadi. Function: Director General of Mesbah Energy Company. Other information: Person involved in Iran's nuclear programme.
- (7) Jafar Mohammadi. Function: Technical Adviser to the AEOI (in charge of managing the production of valves for centrifuges). Other information: Person involved in Iran's nuclear programme.
- (8) Ehsan Monajemi. Function: Construction Project Manager, Natanz. Other information: Person involved in Iran's nuclear programme.
- (9) Mohammad Mehdi Nejad Nouri. Title: Lt Gen. Function: Rector of Malek Ashtar University of Defence Technology. Other information: The chemistry department of Ashtar University of Defence Technology is affiliated to MODALF and has conducted experiments on beryllium). Person involved in Iran's nuclear programme.
- (10) Mohammad Qannadi. Function: AEOI Vice President for Research & Development. Other information: Person involved in Iran's nuclear programme.
- (11) Yahya Rahim Safavi. Title: Maj Gen. Function: Commander, IRGC (Pasdaran). Other information: Person involved in both Iran's nuclear and ballistic missile programmes.
- (12) Hosein Salimi. Title: General. Function: Commander of the Air Force, IRGC (Pasdaran). Other information: Person involved in Iran's ballistic missile programme.

ANNEX V

List of persons, entities and bodies referred to in Article 7(2)