

Council Regulation (EU) No 1283/2009 of 22 December 2009  
amending Council Regulation (EC) No 329/2007 concerning  
restrictive measures against the Democratic People's Republic of Korea

COUNCIL REGULATION (EU) No 1283/2009

of 22 December 2009

amending Council Regulation (EC) No 329/2007 concerning  
restrictive measures against the Democratic People's Republic of Korea

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 215 (1) and (2) thereof,

Having regard to Council Common Position 2009/573/CFSP of 27 July 2009<sup>(1)</sup> and Council Decision 2009/1002/CFSP of 22 December 2009<sup>(2)</sup> amending Common Position 2006/795/CFSP concerning restrictive measures against the Democratic People's Republic of Korea,

Having regard to the joint proposal from the High Representative of the Union for Foreign Affairs and Security Policy and the Commission,

Whereas:

- (1) On 20 November 2006, the Council adopted Common Position 2006/795/CFSP<sup>(3)</sup> concerning restrictive measures against the Democratic People's Republic of Korea (hereinafter referred to as 'North Korea') and implementing United Nations Security Council Resolution (UNSCR) 1718 (2006).
- (2) In accordance with UNSCR 1874 (2009), additional restrictive measures were imposed against North Korea by Common Position 2009/573/CFSP, including notably a prohibition on the supply, sale or transfer of certain items, materials, equipment, goods and technology which could contribute to North Korea's nuclear-related, other weapons of mass destruction-related or ballistic missile-related programmes. Decision 2009/1002/CFSP specifies that this prohibition shall include all dual-use goods and technology listed in Annex I to Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items (Recast)<sup>(4)</sup>.
- (3) Common Position 2009/573/CFSP also provides for the inspection of certain cargoes to and from North Korea and, in the case of aircraft and vessels, for the supply of additional pre-arrival or pre-departure information in respect of goods brought into or out of the Union. This information must be provided in accordance with the provisions on entry and exit summary declarations of Council Regulation (EEC) No 2913/92 of 12 October 1992 establishing the Community Customs Code<sup>(5)</sup>, and Commission Regulation (EEC) No 2454/93 of 2 July 1993 laying down provisions for the implementation of Council Regulation (EEC) No 2913/92 establishing the Community Customs Code<sup>(6)</sup>.

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*Status: Point in time view as at 31/12/2020.*

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- (4) Common Position 2009/573/CFSP also provides for a prohibition on bunkering services or any other services for North Korea's vessels in order to prevent the transport of items whose export is prohibited under Regulation (EC) No 329/2007<sup>(7)</sup>.
- (5) Common Position 2009/573/CFSP also extends measures to freeze funds to other categories of persons and introduces financial vigilance measures in respect of the activities of financial institutions which could contribute to North Korea's nuclear-related, other weapons of mass destruction-related or ballistic missile-related programmes.
- (6) These measures fall within the scope of the Treaty and, notably with a view to ensuring their uniform application by economic operators in all Member States, Union legislation is therefore necessary in order to implement them as far as the Union is concerned.
- (7) Regulation (EC) No 329/2007 should therefore be amended accordingly.
- (8) Any processing of personal data of natural persons under this Regulation should respect Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data<sup>(8)</sup> and Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data<sup>(9)</sup>.
- (9) In order to ensure that the measures provided for in this Regulation are effective, this Regulation should enter into force immediately,

HAS ADOPTED THIS REGULATION:

*Article 1*

Regulation (EC) No 329/2007 is hereby amended as follows:

1. Article 1(8) shall be replaced by the following:
  8. "territory of the Union" means the territories of the Member States to which the Treaty is applicable, under the conditions laid down in the Treaty, including their airspace.;
2. Article 2 shall be replaced by the following:
 

*Article 2*

  - 1 It shall be prohibited:
    - a to sell, supply, transfer or export, directly or indirectly, the goods and technology, including software, listed in Annexes I and Ia, whether or not originating in the Union, to any natural or legal person, entity or body in, or for use in North Korea;
    - b to participate, knowingly and intentionally, in activities the object or effect of which is to circumvent the prohibition referred to in point (a).
  - 2 Annex I shall include all items, materials, equipment, goods and technology, including software, which are dual-use items or technology as defined in Regulation (EC) No 428/2009<sup>(10)</sup>.

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Annex Ia shall include other items, materials, equipment, goods and technology which could contribute to North Korea's nuclear-related, other weapons of mass destruction-related or ballistic missile-related programmes.

3 It shall be prohibited to purchase, import or transport the goods and technology listed in Annexes I and Ia from North Korea, whether the item concerned originates or not in North Korea.;

3. Article 3(1) shall be replaced by the following:

1. It shall be prohibited:

- a to provide, directly or indirectly, technical assistance related to goods and technology listed in the EU Common List of Military Equipment or in Annexes I and Ia, and to the provision, manufacture, maintenance and use of goods listed in the EU Common List of Military Equipment or in Annexes I and Ia to any natural or legal person, entity or body in, or for use in, North Korea;
- b to provide, directly or indirectly, financing or financial assistance related to goods and technology listed in the EU Common List of Military Equipment or in Annexes I and Ia, 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, North Korea;
- c to obtain, directly or indirectly, technical assistance related to goods and technology listed in the EU Common List of Military Equipment or in Annexes I and Ia, and to the provision, manufacture, maintenance and use of goods listed in the EU Common List of Military Equipment or in Annexes I and Ia from any natural or legal person, entity or body in, or for use in, North Korea;
- d to obtain, directly or indirectly, financing or financial assistance related to goods and technology listed in the EU Common List of Military Equipment or in Annexes I and Ia, 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 from any natural or legal person, entity or body in, or for use in, North Korea;
- e to participate, knowingly and intentionally, in activities, the object or effect of which is to circumvent the prohibitions referred to in points (a), (b), (c) and (d).;

4. The following Article shall be inserted:

*Article 3a*

1 In order to prevent the transfer of goods and technology listed in Annexes I and Ia which could contribute to North Korea's nuclear-related, other weapons of mass destruction-related or ballistic missile-related programmes, or of the luxury goods listed in Annex III, cargo aircraft and merchant vessels to and from North Korea and North Korean vessels shall be required to submit pre-arrival or pre-departure information, for all goods brought into or out of the Union, to the competent customs authorities of the Member State concerned.

The rules governing the obligation to provide pre-arrival or pre-departure information, in particular the time limits to be respected and data to be required, shall be as laid down in the applicable provisions concerning entry and exit summary declarations

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as well as customs declarations in Regulation (EC) No 648/2005 of the European Parliament and of the Council of 13 April 2005 amending Council Regulation (EEC) No 2913/92 establishing the Community Customs Code<sup>(11)</sup>, and Commission Regulation (EC) No 1875/2006 of 18 December 2006 amending Regulation (EEC) No 2454/93 laying down provisions for the implementation of Council Regulation (EEC) No 2913/92 establishing the Community Customs Code<sup>(12)</sup>.

Furthermore, cargo aircraft and merchant vessels to and from North Korea, or their representatives, shall declare whether the goods are covered by this Regulation and, if their export is subject to authorisation, specify the particulars of the export licence granted.

Until 31 December 2010 the entry and exit summary declarations and the required additional elements referred to in this Article may be submitted in written form using commercial, port or transport information, provided that it contains the necessary particulars.

As from 1 January 2011, the required additional elements referred to in this Article shall be submitted either in written form or using the entry and exit summary declarations as appropriate.

- 2 The provision by nationals of Member States or from the territories of Member States of bunkering or ship supply services, or any other servicing of vessels, to North Korean vessels is prohibited where the providers of the service have information, including from the competent customs authorities on the basis of the pre-arrival and pre-departure information referred to in paragraph 1, that provides reasonable grounds to believe that the vessels carry items whose supply, sale, transfer or export is prohibited under this Regulation, unless the provision of such services is necessary for humanitarian purposes.;

5. Article 6 shall be replaced by the following:

*Article 6*

- 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 Sanctions Committee or the UN Security Council in accordance with paragraph 8(d) of UNSCR 1718 (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 persons, entities and bodies not listed in Annex IV, who, in accordance with points (b) and (c) of Article 4(1) of Common Position 2006/795/CFSP, have been identified by the Council:

- a as responsible for North Korean nuclear-related, other weapons of mass destruction-related or ballistic missile-related programmes, as well as persons or bodies acting in their name or on their instructions and entities owned or controlled by them; or
- b as providing financial services or the transfer to, through, or from the territory of the Union, or involving nationals of Member States or entities organised under their laws, or persons or financial institutions in the territory of the Union, of any financial or other assets or resources that could contribute to North Korean nuclear-related, other weapons of mass destruction-related or ballistic missile-related programmes, as well as persons or bodies acting in their name or on their instructions and entities owned or controlled by them.

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Annex V shall be reviewed at regular intervals and at least every 12 months.

3 Annexes IV and V shall include, where available, information on listed natural persons for the purpose of identifying sufficiently the persons concerned.

Such information may include:

- a surname and given names, including alias names and titles, if any;
- b date and place of birth;
- c nationality;
- d passport and identity card numbers;
- e fiscal and social security numbers;
- f gender;
- g address or other information on whereabouts;
- h function or profession;
- i date of designation.

Annexes IV and V shall also include the grounds for listing, such as occupation.

Annexes IV and V may also include information for identification purposes as set out in this paragraph on family members of the persons listed, provided that this information is necessary in a specific case for the sole purpose of verifying the identity of the listed natural person concerned.

4 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.

5 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 and 2 shall be prohibited.;

6. Article 7 shall be replaced by the following:

*Article 7*

1 By way of derogation from Article 6, the competent authorities of the Member States, as indicated on the websites listed in Annex II, 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 Annexes 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

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- b where the authorisation concerns a person, entity and 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 6, the competent authorities of the Member States, as indicated on the websites listed in Annex II, may authorise the release of certain frozen funds or economic resources or the making available of certain frozen funds or economic resources, after having determined that the funds or economic resources are necessary for extraordinary expenses, provided that

- a where 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 where the authorisation concerns a person, entity or body listed in Annex V, the Member State concerned has notified other Member States and the Commission of the grounds on which it considers that a specific authorisation should be granted, at least two weeks prior to the authorisation.

3 The Member State concerned shall inform other Member States and the Commission of any authorisation granted under paragraphs 1 and 2.;

7. Article 8 shall be replaced by the following:

*Article 8*

By way of derogation from Article 6, the competent authorities of the Member States, as indicated on the websites listed in Annex II, 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 prior to the date on which the person, entity or body referred to in Article 6 was designated, or of a judicial, administrative or arbitral judgement 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 judgement, within the limits set by applicable laws and regulations governing the rights of persons having such claims;
- (c) the lien or judgement is not for the benefit of a person, entity or body listed in Annexes IV or V;
- (d) recognising the lien or judgement is not contrary to public policy in the Member State concerned; and
- (e) the lien or judgement in respect of persons, entities and bodies listed in Annex IV has been notified by the Member State concerned to the Sanctions Committee.;

8. Article 9 shall be replaced by the following:

*Article 9*

1 Article 6(4) shall not prevent financial or credit institutions in the Union 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

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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 6(4) 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 prior to the date on which the person, entity or body referred to in Article 6 was designated,

provided that any such interest, other earnings and payments are frozen in accordance with Article 6(1) or 6(2).;

9. Article 11 shall be replaced by the following:

*Article 11*

- 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 point (b) of Article 3(1) and in Article 6(4) shall not give rise to any kind of liability on the part of the natural or legal persons, entities or bodies concerned, if they did not know, and had no reasonable cause to suspect, that their actions would infringe these prohibitions.;

10. The following Article shall be inserted:

*Article 11a*

- 1 Credit and financial institutions which fall within the scope of Article 16 shall, in their activities with credit and financial institutions referred to in paragraph 2, and in order to prevent such activities contributing to North Korea's nuclear-related, other weapons of mass destruction-related or ballistic missile-related programmes:

- a exercise continuous vigilance over account activity, particularly by means of their programmes on customer due diligence and obligations relating to the prevention of money-laundering and the financing of terrorism;
- b require that in payment instructions all information fields which relate to the originator and beneficiary of the transaction in question be completed and, if that information is not supplied, refuse the transaction;
- c maintain all records of transactions for a period of five years and make them available to national authorities on request; and
- d if they suspect or have reasonable grounds to suspect that funds are related to proliferation financing, promptly report their suspicions to the financial intelligence unit (FIU) or another competent authority designated by the Member State concerned, as indicated on the websites listed in Annex II, without prejudice to Article 3(1) or Article 6. The FIU or another competent authority shall serve as a national centre for receiving and analysing suspicious transaction reports regarding potential proliferation financing. The FIU or other such competent authority shall have access, directly or indirectly, on a timely basis to the financial, administrative and law enforcement information that it requires in order to properly undertake this function, including the analysis of suspicious transaction reports.

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- 2 The measures set out in paragraph 1 shall apply to credit and financial institutions in their activities with:
- a credit and financial institutions domiciled in North Korea;
  - b branches and subsidiaries falling within the scope of Article 16 of credit and financial institutions domiciled in North Korea, as listed in Annex VI;
  - c branches and subsidiaries falling outside the scope of Article 16 of credit and financial institutions domiciled in North Korea, as listed in Annex VI; and
  - d credit and financial institutions that are neither domiciled in North Korea nor fall within the scope of Article 16 but are controlled by persons or entities domiciled in North Korea, as listed in Annex VI.;

11. Article 13 shall be replaced by the following:

*Article 13*

- 1 The Commission shall be empowered to:
- a amend Annex Ia on the basis of determinations made by either the Sanctions Committee or the UN Security Council and, where appropriate, add the reference numbers taken from the Combined Nomenclature as set out in Annex I to Regulation (EEC) No 2658/87;
  - b amend Annex II on the basis of information supplied by Member States;
  - c amend Annex III in order to refine or adapt the list of goods included therein, according to any definition or guidelines that may be promulgated by the Sanctions Committee or to add the reference numbers taken from the Combined Nomenclature as set out in Annex I to Regulation (EEC) No 2658/87, if necessary or appropriate;
  - d amend Annex IV on the basis of determinations made by either the Sanctions Committee or the UN Security Council; and
  - e amend Annexes V and VI in accordance with decisions taken concerning Annexes II, III, IV and V to Common Position 2006/795/CFSP.

- 2 The Commission shall process personal data in order to carry out the tasks incumbent on it under this Regulation and in accordance with the provisions of Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data<sup>(13)</sup>.;

12. Article 16 shall be replaced by the following:

*Article 16*

This Regulation shall apply:

- (a) within the territory of the Union;
- (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 Union 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 Union.;



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13. Annex I shall be replaced by the text in Annex I to this Regulation;
14. Annex IV shall be replaced by the text in Annex II to this Regulation;
15. The text in Annex III to this Regulation shall be added as Annex V;
16. The text in Annex IV to this Regulation shall be added as Annex VI.

*Article 2*

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 Brussels, 22 December 2009.

*For the Council*

*The President*

A. CARLGREN

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## ANNEX I

## ANNEX I

### GOODS AND TECHNOLOGY REFERRED TO IN ARTICLES 2 AND 3

All goods and technology listed in Annex I to Regulation (EC) No 428/2009.

## ANNEX Ia

### GOODS AND TECHNOLOGY REFERRED TO IN ARTICLES 2 AND 3

Other items, materials, equipment, goods and technology which could contribute to North Korea's nuclear-related, other weapons of mass destruction-related or ballistic missile-related programmes.

1. Unless otherwise stated, reference numbers used in the column entitled "Description" refer to the descriptions of dual use items and technology set out in Annex I to Regulation (EC) No 428/2009.
2. A reference number in the column entitled "Related item from Annex I to Regulation (EC) No 428/2009" 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 428/2009.

#### GENERAL NOTES

1. The object of the prohibitions contained in this Annex should not be defeated by the export of any non-prohibited goods (including plants) containing one or more prohibited components when the prohibited component or components are the principal element of the goods and can feasibly be removed or used for other purposes.

*N.B.: In judging whether the prohibited component or components are to be considered the principal element, it is necessary to weigh the factors of quantity, value and technological know-how involved and other special circumstances which might establish the prohibited component or components as the principal element of the goods being procured.*

2. Goods specified in this Annex include both new and used goods.

#### GENERAL TECHNOLOGY NOTE (GTN)(To be read in conjunction with Part C)

1. The sale, supply, transfer or export of "technology" which is "required" for the "development", "production" or "use" of goods the sale, supply, transfer or export of which is prohibited in Part A (Goods) below, is prohibited in accordance with the provisions of Part B.
2. The "technology" "required" for the "development", "production" or "use" of prohibited goods remains under prohibition even when applicable to non-prohibited goods.

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3. Prohibitions do not apply to that “technology” which is the minimum necessary for the installation, operation, maintenance (checking) and repair of those goods which are not prohibited.
4. Prohibitions on “technology” transfer do not apply to information “in the public domain”, to “basic scientific research” or to the minimum necessary information for patent applications.

#### A. GOODS

#### NUCLEAR MATERIALS, FACILITIES, AND EQUIPMENT

##### I.A0.

##### GOODS

No	Description	Related item from Annex I to Regulation (EC) No 428/2009
I.A0.001	Hollow cathode lamps as follows: a. Iodine hollow cathode lamps with windows in pure silicon or quartz; b. Uranium hollow cathode lamps.	
I.A0.002	Faraday isolators in the wavelength range 500 nm – 650 nm	
I.A0.003	Optical gratings in the wavelength range 500 nm – 650 nm	
I.A0.004	Optical fibres in the wavelength range 500 nm – 650 nm coated with anti-reflecting layers in the wavelength range 500 nm – 650 nm and having a core diameter greater than 0,4 mm but not exceeding 2 mm.	
I.A0.005	Nuclear reactor vessel components and testing equipment, other than those specified in 0A001, as follows: a. Seals; b. Internal components;	0A001

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	c. Sealing, testing and measurement equipment.	
I.A0.006	Nuclear detection systems, other than those specified in 0A001.j. or 1A004.c., for detection, identification or quantification of radioactive materials or radiation of nuclear origin and specially designed components thereof. <i>N.B: For personal equipment refer to I.A1.004 below.</i>	0A001.j. 1A004.c.
I.A0.007	Bellows-sealed valves other than those specified in 0B001.c.6., 2A226 or 2B350, made of aluminium alloy or stainless steel type 304, 304L or 316L.	0B001.c.6.2A226 2B350
I.A0.008	Laser mirrors, other than those specified in 6A005.e., consisting of substrates having a thermal expansion coefficient of $10^{-6} \text{ K}^{-1}$ or less at 20 °C (e.g. fused silica or sapphire). <i>Note: This item does not cover optical systems specially designed for astronomical applications, except if the mirrors contain fused silica.</i>	0B001.g.5. 6A005.e.
I.A0.009	Laser lenses, other than those specified in 6A005.e.2, consisting of substrates having a thermal expansion coefficient of $10^{-6} \text{ K}^{-1}$ or less at 20 °C (e.g. fused silica).	0B001.g. 6A005.e.2.
I.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
I.A0.011	Vacuum pumps other than those specified in 0B002.f.2. or 2B231, as follows:	0B002.f.2. 2B231

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	<p>a. Turbo-molecular pumps having a flow-rate equal to or greater than 400 l/s;</p> <p>b. Roots type vacuum roughing pumps having a volumetric aspiration flow-rate greater than 200 m<sup>3</sup>/h;</p> <p>c. Bellows-sealed, scroll, dry compressor, and bellows-sealed, scroll, dry vacuum pumps.</p>	
I.A0.012	Shielded enclosures for the manipulation, storage and handling of radioactive substances (hot cells).	0B006
I.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
I.A0.014	Detonation chambers having a capacity of explosion absorption of more than 2,5 kg TNT equivalent.	

## SPECIAL MATERIALS AND RELATED EQUIPMENT

### I.A1.

#### GOODS

No	Description	Related item from Annex I to Regulation (EC) No 428/2009
I.A1.001	Bis(2-ethylhexyl) phosphoric acid (HDEHP or D2HPA) Chemical Abstract Number (CAS): [CAS 298-07-7] solvent in any quantity, with a purity greater than 90 %.	

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I.A1.002	Fluorine gas CAS: [7782-41-4], with a purity of at least 95 %.	
I.A1.003	<p>Ring-shaped seals and gaskets, having an inner diameter of 400 mm or less, made of any of the following materials:</p> <ul style="list-style-type: none"> <li>a. Copolymers of vinylidene fluoride having 75 % or more beta crystalline structure without stretching;</li> <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> <li>d. Polychlorotrifluoroethylene (PCTFE, e.g. Kel-F<sup>®</sup>);</li> <li>e. Fluoro-elastomers (e.g., Viton<sup>®</sup>, Tecnoflon<sup>®</sup>);</li> <li>f. Polytetrafluoroethylene (PTFE).</li> </ul>	1A001
I.A1.004	Personal equipment for detecting radiation of nuclear origin, other than that specified in 1A004.c., including personal dosimeters.	1A004.c.
I.A1.005	Electrolytic cells for fluorine production, other than those specified in 1B225, with an output capacity greater than 100 g of fluorine per hour.	1B225
I.A1.006	Catalysts, other than those specified in 1A225 or 1B231, containing platinum, palladium or rhodium, usable for promoting the hydrogen isotope exchange reaction	1A225 1B231

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	between hydrogen and water for the recovery of tritium from heavy water or for the production of heavy water.	
I.A1.007	<p>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:</p> <p>a. “Capable of” an ultimate tensile strength of 460 MPa or more at 293 K (20 °C); or</p> <p>b. Having a tensile strength of 415 MPa or more at 298 K (25 °C).</p> <p><i>Technical note: The phrase alloys “capable of” encompasses alloys before or after heat treatment.</i></p>	1C002.b.4. 1C202.a.
I.A1.008	<p>Magnetic metals, of all types and of whatever form, other than those specified in 1C003.a. having an “initial relative permeability” of 120 000 or more and a thickness between 0,05 mm and 0,1 mm.</p> <p><i>Technical note: Measurement of “initial relative permeability” must be performed on fully annealed materials.</i></p>	1C003.a.
I.A1.009	<p>“Fibrous or filamentary materials” or prepregs, other than those specified in 1C010.a., 1C010.b., 1C210.a. or 1C210.b. as follows:</p> <p>a. Aramid “fibrous or filamentary materials” having either of the following characteristics:</p> <p>1.A “specific modulus” exceeding</p>	1C010.a. 1C010.b. 1C210.a. 1C210.b.

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- |    |   |  |
|----|---|--|
|    |   | $10 \times 10^6$<br>m; or  |
|    | 2.A   | “specific<br>tensile<br>strength”<br>exceeding<br>$17 \times 10^4$<br>m;   |
| b. | Glass “fibrous<br>or filamentary<br>materials”<br>having either of<br>the following<br>characteristics:   |  |
|    | 1.A   | “specific<br>modulus”<br>exceeding<br>$3,18 \times 10^6$<br>m; or          |
|    | 2.A   | “specific<br>tensile<br>strength”<br>exceeding<br>$76,2 \times 10^3$<br>m; |
| c. | Thermoset resin-<br>impregnated<br>continuous “yarns”,<br>“rovings”, “tows”<br>or “tapes” with<br>a width of 15<br>mm or less (once<br>prepregs), made<br>from glass “fibrous<br>or filamentary<br>materials” other<br>than those specified<br>in I.A1.010.a.<br>below. |  |
| d. | Carbon “fibrous<br>or filamentary<br>materials”;  |  |
| e. | Thermoset resin-<br>impregnated<br>continuous<br>“yarns”, “rovings”,<br>“tows”, or “tapes”,<br>made from<br>carbon “fibrous<br>or filamentary<br>materials”;  |  |



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	<p>f. Polyacrylonitrile (PAN) continuous “yarns”, “rovings”, “tows” or “tapes”.</p> <p>g. Para-aramid “fibrous or filamentary materials” (Kevlar® and other Kevlar®-like fibres).</p>	
I.A1.010	<p>Resin-impregnated or pitch-impregnated fibres (prepregs), metal or carbon-coated fibres (preforms) or “carbon fibre preforms”, as follows:</p> <p>a. Made from “fibrous or filamentary materials” specified in I.A1.009 above;</p> <p>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, of which the size of individual sheets does not exceed 50 cm × 90 cm;</p> <p>c. Prepregs specified in 1C010.a., 1C010.b. or 1C010.c., when impregnated with phenolic or epoxy resins having a glass transition temperature (T<sub>g</sub>) less than 433 K (160 °C) and a cure temperature lower than the glass transition temperature.</p>	<p>1C010</p> <p>1C210</p>

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I.A1.011	Reinforced silicon carbide ceramic composites usable for nose tips, re-entry vehicles, nozzle flaps, usable in “missiles”, other than those specified in 1C107.	1C107
I.A1.012	Not used	
I.A1.013	Tantalum, tantalum carbide, tungsten, tungsten carbide and alloys thereof, other than those specified in 1C226, having both of the following characteristics: <ul style="list-style-type: none"> <li>a. In forms having a hollow cylindrical or spherical symmetry (including cylinder segments) with an inside diameter between 50 mm and 300 mm; <i>and</i></li> <li>b. A mass greater than 5 kg.</li> </ul>	1C226
I.A1.014	“Elemental powders” of cobalt, neodymium or samarium or alloys or mixtures thereof containing at least 20 % by weight of cobalt, neodymium or samarium, with a particle size less than 200 µm. <i>Technical note:</i> <i>“Elemental powder” means a high purity powder of one element.</i>	
I.A1.015	Pure tributyl phosphate (TBP) [CAS No 126-73-8] or any mixture having a TBP content of more than 5 % by weight.	
I.A1.016	Maraging steel, other than those specified by 1C116 or 1C216. <i>Technical notes:</i> <ul style="list-style-type: none"> <li>1. <i>The phrase maraging steel “capable of” encompasses</i></li> </ul>	1C116 1C216

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	<p><i>maraging steel before or after heat treatment.</i></p> <p>2. <i>Maraging steels are iron alloys generally characterised by high nickel, very low carbon content and the use of substitutional elements or precipitates to produce strengthening and age-hardening of the alloy.</i></p>	
I.A1.017	<p>Metals, metal powders and material as follows:</p> <p>a. Tungsten and tungsten alloys, other than those specified in 1C117, in the form of uniform spherical or atomized particles of 500 µm (micrometre) diameter or less with a tungsten content of 97 % by weight or more;</p> <p>b. Molybdenum and molybdenum alloys, other than those specified in 1C117, in the form of uniform spherical or atomized particles of 500 µm diameter or less with a molybdenum content of 97 % by weight or more;</p> <p>c. Tungsten materials in the solid form, other than those specified in 1C226 having material compositions as follows:</p>	<p>1C117 1C226</p>

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	<ol style="list-style-type: none"> <li>1. Tungsten and alloys containing 97 % by weight or more of tungsten;</li> <li>2. Copper infiltrated tungsten containing 80 % by weight or more of tungsten;</li> <li>or</li> <li>3. Silver infiltrated tungsten containing 80 % by weight or more of tungsten.</li> </ol>	
I.A1.018	<p>Soft magnetic alloys, other than those specified in 1C003, having a chemical composition as follows:</p> <ol style="list-style-type: none"> <li>a Iron content between 30 % and 60 %; and</li> <li>b Cobalt content between 40 % and 60 %.</li> </ol>	1C003
I.A1.019	Not used	
I.A1.020	Graphite, other than that specified in 0C004 or 1C107.a, designed or specified for use in Electrical Discharge Machining (EDM) machines	0C004 1C107a

## MATERIALS PROCESSING

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## I.A2.

## GOODS

No	Description	Related item from Annex I to Regulation (EC) No 428/2009
I.A2.001	<p>Vibration test systems, equipment and components thereof, other than those specified in 2B116:</p> <p>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 0,1 g rms between 0,1 Hz and 2 kHz and imparting forces equal to or greater than 50 kN, measured “bare table”;</p> <p>b. Digital controllers, combined with specially designed vibration test “software”, with a “real-time control bandwidth” greater than 5 kHz designed for use with vibration test systems specified in a.;</p> <p><i>Technical note: “Real-time control bandwidth” is defined as the maximum rate at which a controller can execute complete cycles of sampling, processing data and</i></p>	2B116

**a** Manufacturers calculating positioning accuracy in accordance with ISO 230/2 (1997) should consult the competent authorities of the Member State in which they are established.

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	<p><i>transmitting control signals.</i></p> <p>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.;</p> <p>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.</p> <p><i>Technical note: “bare table” means a flat table, or surface, with no fixture or fittings.</i></p>	
I.A2.002	Machine tools, other than those specified in 2B001.c. or 2B201.b., for grinding having positioning accuracies with “all compensations available” equal to or less (better) than 15 µm according to ISO 230/2 (1988) <sup>a</sup> or national equivalents along any linear axis.	2B001.c. 2B201.b.
I.A2.002a	Components and numerical controls, specially designed for machine tools specified in 2B001, 2B201, or I.A2.002 above.	

<sup>a</sup> Manufacturers calculating positioning accuracy in accordance with ISO 230/2 (1997) should consult the competent authorities of the Member State in which they are established.

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I.A2.003	<p>Balancing machines and related equipment as follows:</p> <p>a. Balancing machines, designed or modified for dental or other medical equipment, having all the following characteristics:</p> <ol style="list-style-type: none"> <li>1. Not capable of balancing rotors/ assemblies having a mass greater than 3 kg;</li> <li>2. Capable of balancing rotors/ assemblies at speeds greater than 12 500 rpm;</li> <li>3. Capable of correcting unbalance in two planes or more; <i>and</i></li> <li>4. Capable of balancing to a residual specific unbalance of 0,2 g × mm per kg of rotor mass;</li> </ol> <p>b. “Indicator heads” designed or modified for use with machines specified in a. above.</p> <p><i>Technical note:</i></p>	2B119
a	Manufacturers calculating positioning accuracy in accordance with ISO 230/2 (1997) should consult the competent authorities of the Member State in which they are established.	

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	<i>“Indicator heads” are sometimes known as balancing instrumentation.</i>	
I.A2.004	<p>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:</p> <p>a. A capability of penetrating a hot cell wall of 0,3 m or more (through the wall operation); or</p> <p>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).</p> <p><i>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.</i></p>	2B225
I A2.005	<p>Controlled atmosphere heat treatment furnaces or oxidation furnaces capable of operation at temperatures above 400 °C</p> <p><i>Note: This item does not cover tunnel kilns with roller or car conveyance, tunnel kilns with conveyor belt, pusher type kilns or shuttle kilns, specially designed for the production of glass, tableware ceramics or structural ceramics.</i></p>	2B226 2B227
I.A2.006	Not used	
I.A2.007	“Pressure transducers”, other than those defined in 2B230, capable of measuring	2B230

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	<p>absolute pressures at any point in the range 0 to 200 kPa and having both of the following characteristics:</p> <p>a. Pressure sensing elements made of or protected by “Materials resistant to corrosion by uranium hexafluoride (UF<sub>6</sub>)”, and</p> <p>b. Having either of the following characteristics:</p> <p>1. A full scale of less than 200 kPa and an “accuracy” of better than ± 1 % of full scale; or</p> <p>2. A full scale of 200 kPa or greater and an “accuracy” of better than 2 kPa.</p> <p><i>Technical note: For the purposes of 2B230, “accuracy” includes non-linearity, hysteresis and repeatability at ambient temperature.</i></p>	
I.A2.008	Liquid-liquid contacting equipment (mixer-settlers, pulsed columns, centrifugal contactors); and liquid distributors, vapour distributors or liquid collectors designed for such equipment, where all surfaces that come in direct contact with the chemical(s) being	2B350.e.
a	Manufacturers calculating positioning accuracy in accordance with ISO 230/2 (1997) should consult the competent authorities of the Member State in which they are established.	

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	<p>processed are made from any of the following materials:</p> <ol style="list-style-type: none"> <li>a. Alloys with more than 25 % nickel and 20 % chromium by weight;</li> <li>b. Fluoropolymers;</li> <li>c. Glass (including vitrified or enamelled coating or glass lining);</li> <li>d. Graphite or “carbon graphite”;</li> <li>e. Nickel or alloys with more than 40 % nickel by weight;</li> <li>f. Tantalum or tantalum alloys;</li> <li>g. Titanium or titanium alloys;</li> <li>h. Zirconium or zirconium alloys; or</li> <li>i. Stainless steel.</li> </ol> <p><i>Technical note:</i>  <i>“Carbon graphite” is a composition consisting of amorphous carbon and graphite, in which the graphite content is 8 % or more by weight.</i></p>	
I.A2.009	<p>Industrial equipment and components, other than those specified in 2B350.d., as follows:</p> <p>Heat exchangers or condensers with a heat transfer surface area greater than 0,05 m<sup>2</sup>, 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 fluid(s) are made from any of the following materials:</p> <ol style="list-style-type: none"> <li>a. Alloys with more than 25 % nickel</li> </ol>	2B350.d.
<b>a</b>	Manufacturers calculating positioning accuracy in accordance with ISO 230/2 (1997) should consult the competent authorities of the Member State in which they are established.	

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	<p>and 20 % chromium by weight;</p> <p>b. Fluoropolymers;</p> <p>c. Glass (including vitrified or enamelled coating or glass lining);</p> <p>d. Graphite or “carbon graphite”;</p> <p>e. Nickel or alloys with more than 40 % nickel by weight;</p> <p>f. Tantalum or tantalum alloys;</p> <p>g. Titanium or titanium alloys;</p> <p>h. Zirconium or zirconium alloys;</p> <p>i. Silicon carbide;</p> <p>j. Titanium carbide; or</p> <p>k. Stainless steel.</p> <p><i>Note: This item does not cover vehicle radiators.</i></p> <p><i>Technical note:</i>  <i>The materials used for gaskets and seals and other implementation of sealing functions do not determine the status of control of the heat exchanger.</i></p>	
I.A2.010	<p>Multiple-seal, and seal-less pumps, other than those specified in 2B350.i, suitable for corrosive fluids, with manufacturer's specified maximum flow-rate greater than 0,6 m<sup>3</sup>/hour, or vacuum pumps with manufacturer's specified maximum flow-rate greater than 5 m<sup>3</sup>/hour [measured under standard temperature (273 K or 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</p>	2B350.i.
<b>a</b>	<p>Manufacturers calculating positioning accuracy in accordance with ISO 230/2 (1997) should consult the competent authorities of the Member State in which they are established.</p>	

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	<p>in direct contact with the chemical(s) being processed are made from any of the following materials:</p> <ul style="list-style-type: none"> <li>a. Alloys with more than 25 % nickel and 20 % chromium by weight;</li> <li>b. Ceramics;</li> <li>c. Ferrosilicon;</li> <li>d. Fluoropolymers;</li> <li>e. Glass (including vitrified or enamelled coatings or glass lining);</li> <li>f. Graphite or “carbon graphite”;</li> <li>g. Nickel or alloys with more than 40 % nickel by weight;</li> <li>h. Tantalum or tantalum alloys;</li> <li>i. Titanium or titanium alloys;</li> <li>j. Zirconium or zirconium alloys;</li> <li>k. Niobium (columbium) or niobium alloys;</li> <li>l. Stainless Steel; or</li> <li>m. Aluminium Alloys.</li> </ul> <p><i>Technical note: The materials used for gaskets and seals and other implementation of sealing functions do not determine the status of control of the pump.</i></p>	
I.A2.011	<p>“Centrifugal separators”, other than those specified in 2B352.c., capable of continuous separation without the propagation of aerosols and manufactured from:</p> <ul style="list-style-type: none"> <li>a. Alloys with more than 25 % nickel and 20 % chromium by weight;</li> </ul>	2B352.c.
a	Manufacturers calculating positioning accuracy in accordance with ISO 230/2 (1997) should consult the competent authorities of the Member State in which they are established.	

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	<p>b. Fluoropolymers;</p> <p>c. Glass (including vitrified or enamelled coating or glass lining);</p> <p>d. Nickel or alloys with more than 40 % nickel by weight;</p> <p>e. Tantalum or tantalum alloys;</p> <p>f. Titanium or titanium alloys; or</p> <p>g. Zirconium or zirconium alloys.</p> <p><i>Technical note:</i>  <i>“Centrifugal separators” include decanters.</i></p>	
I.A2.012	Sintered metal filters, other than those specified in 2B352.d., made of nickel or nickel alloy with more than 40 % nickel by weight.	2B352.d.
I.A2.013	Spin-forming machines and flow-forming machines, other than those specified by 2B009, 2B109 or 2B209 and specially designed components therefor. <i>Technical note:</i> <i>For the purpose of this item, machines combining the functions of spin-forming and flow-forming are regarded as flow-forming machines.</i>	2B009 2B109 2B209
<p><b>a</b> Manufacturers calculating positioning accuracy in accordance with ISO 230/2 (1997) should consult the competent authorities of the Member State in which they are established.</p>		

## ELECTRONICS

### I.A3.

### GOODS

No	Description	Related item from Annex I to Regulation (EC) No 428/2009
I.A3.001	High voltage direct current power supplies, other than those specified in 0B001.j.5.	0B001.j.5. 3A227

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	<p>or 3A227, having both of the following characteristics:</p> <p>a. Capable of continuously producing, over a time period of eight hours, 10 kV or more, with output power of 5 kW or more with or without sweeping; and</p> <p>b. Current or voltage stability better than 0,1 % over a time period of four hours.</p>	
I.A3.002	<p>Mass spectrometers, other than those specified in 0B002.g or 3A233, capable of measuring ions of 200 atomic mass units or more and having a resolution of better than 2 parts in 200, as follows, and ion sources therefor:</p> <p>a. Inductively coupled plasma mass spectrometers (ICP/MS);</p> <p>b. Glow discharge mass spectrometers (GDMS);</p> <p>c. Thermal ionisation mass spectrometers (TIMS);</p> <p>d. Electron bombardment mass spectrometers which have a source chamber constructed from, lined with or plated with “materials resistant to corrosion by uranium hexafluoride UF<sub>6</sub>”;</p> <p>e. Molecular beam mass spectrometers having either of</p>	0B002.g 3A233

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	<p>the following characteristics:</p> <ol style="list-style-type: none"> <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; <i>or</i></li> <li>2. A source chamber constructed from, lined with or plated with materials resistant to UF<sub>6</sub>;</li> </ol> <p>f. Mass spectrometers equipped with a micro-fluorination ion source designed for actinides or actinide fluorides.</p>	
I.A3.003	<p>Frequency changers or generators, other than those specified by 0B001.b.13 or 3A225, having all of the following characteristics, and specially designed components and software therefor:</p> <ol style="list-style-type: none"> <li>a. Multiphase output capable of providing a power of 40 W or greater;</li> <li>b. Capable of operating in the frequency range</li> </ol>	0B001.b.13. 3A225

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	<p>between 600 and 2 000 Hz; and</p> <p>c. Frequency control better (less) than 0,1 %.</p> <p><i>Technical notes:</i></p> <p>1. <i>Frequency changers are also known as converters, inverters, generators, electronic test equipment, AC power supplies, variable speed motor drives or variable frequency drives.</i></p> <p>2. <i>The functionality specified in this item may be met by certain equipment marketed as; electronic test equipment, AC power supplies, variable speed motor drives or variable frequency drives.</i></p>	
I.A3.004	Spectrometers and diffractometers, designed for the indicative test or quantitative analysis of the elemental composition of metals or alloys without chemical decomposition of the material.	

## SENSORS AND LASERS

### I.A6.

### GOODS

No	Description	Related item from Annex I to Regulation (EC) No 428/2009
I.A6.001	Yttrium aluminium garnet (YAG) rods.	



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I.A6.002	Optical equipment and components, other than those specified in 6A002 or 6A004.b as follows: Infrared optics in the wavelength range 9 µm – 17 µm and components thereof, including cadmium telluride (CdTe) components.	6A002 6A004.b.
I.A6.003	Wave front corrector systems, other than mirrors specified in 6A004.a, 6A005.e or 6A005.f., for use with a laser beam having a diameter exceeding 4 mm, and specially designed components thereof, including control systems, phase front sensors and “deformable mirrors” including bimorph mirrors.	6A004.a. 6A005.e. 6A005.f.
I.A6.004	Argon ion “lasers”, other than those specified in 0B001.g.5, 6A005 and or 6A205.a., having an average output power equal to or greater than 5 W.	0B001.g.5. 6A005.a.6. 6A205.a.
I.A6.005	Semiconductor “lasers”, other than those specified in 0B001.g.5., 0B001.h.6. or 6A005.b., and components thereof, as follows: 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.  <i>Notes:</i>  1. <i>Semiconductor “lasers” are commonly called “laser” diodes.</i>	0B001.g.5. 0B001.h.6. 6A005.b.

*Status: Point in time view as at 31/12/2020.*

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	2. <i>This item does not cover “laser” diodes with a wavelength in the range 1,2 µm – 2,0 µm.</i>	
I.A6.006	<p>Tunable semiconductor “lasers” and tunable semiconductor “laser” arrays, other than those specified in 0B001.h.6. or 6A005.b., of a wavelength between 9 µm and 17 µm, as well as array stacks of semiconductor “lasers” containing at least one tunable semiconductor “laser” array of such wavelength.</p> <p><i>Note:</i> <i>Semiconductor “lasers” are commonly called “laser” diodes.</i></p>	0B001.h.6. 6A005.b.
I.A6.007	<p>Solid state “tunable” “lasers”, other than those specified in 0B001.g.5., 0B001.h.6. or 6A005.c.1., and specially designed components thereof as follows:</p> <ol style="list-style-type: none"> <li>a. Titanium-sapphire lasers,</li> <li>b. Alexandrite lasers.</li> </ol>	0B001.g.5. 0B001.h.6. 6A005.c.1.
I.A6.008	<p>Neodymium-doped (other than glass) “lasers”, other than those specified in 6A005.c.2.b., having an output wavelength greater than 1,0 µm but not exceeding 1,1 µm and output energy exceeding 10 J per pulse.</p>	6A005.c.2.b.
I.A6.009	<p>Components of acousto-optics, as follows:</p> <ol style="list-style-type: none"> <li>a. Framing tubes and solid-state imaging devices having a recurrence frequency equal to or exceeding 1 kHz;</li> <li>b. Recurrence frequency supplies;</li> </ol>	6A203.b.4.

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	c. Pockels cells.	
I.A6.010	<p>Radiation-hardened cameras, or lenses thereof, other than those specified in 6A203.c., specially designed, or rated as radiation-hardened, to withstand a total radiation dose greater than <math>50 \times 10^3</math> Gy(silicon) (<math>5 \times 10^6</math> rad (silicon)) without operational degradation.</p> <p><i>Technical note:</i> The term Gy(silicon) refers to the energy in Joules per kilogram absorbed by an unshielded silicon sample when exposed to ionising radiation.</p>	6A203.c.
I.A6.011	<p>Tunable pulsed dye laser amplifiers and oscillators, other than those specified in 0B001.g.5, 6A005 and or 6A205.c., having all of the following characteristics:</p> <ol style="list-style-type: none"> <li>Operating at wavelengths between 300 nm and 800 nm;</li> <li>An average output power greater than 10 W but not exceeding 30 W;</li> <li>A repetition rate greater than 1 kHz; and</li> <li>Pulse width less than 100 ns.</li> </ol> <p><i>Note:</i> This item does not cover single mode oscillators.</p>	0B001.g.5. 6A005 6A205.c.
I.A6.012	<p>Pulsed carbon dioxide “lasers”, other than those specified in, 0B001.h.6., 6A005.d. or 6A205.d., having all of the following characteristics:</p> <ol style="list-style-type: none"> <li>Operating at wavelengths between 9, <math>\mu\text{m}</math> and 11 <math>\mu\text{m}</math>;</li> </ol>	0B001.h.6. 6A005.d. 6A205.d.

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|----|---|
| b. | A repetition rate greater than 250 Hz;                                  |
| c. | An average output power greater than 100 W but not exceeding 500 W; and |
| d. | Pulse width less than 200 ns.   |

## NAVIGATION AND AVIONICS

### I.A7.

#### GOODS

No	Description	Related item from Annex I to Regulation (EC) No 428/2009
I.A7.001	<p>Inertial navigation systems and specially designed components thereof, as follows:</p> <p>a. 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 thereof, as follows:</p> <p>1. Inertial navigation systems (INS) (gimballed or strapdown) and inertial equipment designed for “aircraft”, land vehicle, vessels (surface or</p>	<p>7A001 7A003 7A101 7A103</p>

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	<p>underwater)                  or                  “spacecraft”                  for                  attitude,                  guidance                  or control,                  having                  any of the                  following                  characteristics,                  and                  specially                  designed                  components                  thereof:</p> <p>a. Navigation                  error                  (free                  inertial)                  subsequent                  to                  normal                  alignment                  of                  0,8                  nautical                  mile                  per                  hour                  (nm/                  hr)                  “Circular                  Error                  Probable” (CEP)                  or                  less                  (better);</p> <p><i>or</i></p> <p>b. Specified                  to                  function                  at                  linear                  acceleration                  levels                  exceeding                  10                  g;</p>
2.	Hybrid Inertial Navigation Systems

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|-----------|--|-------------------|
| <p>3.</p> | <p>embedded with Global Navigation Satellite System(s) (GNSS) or with “Data-Based Referenced Navigation 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); Inertial Equipment for Azimuth, Heading, or North Pointing having any of the following characteristics, and specially</p> | <p>” (“DBRN”)</p> |
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*Status: Point in time view as at 31/12/2020.*

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- |    |  |
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|    | designed components thereof:   |
|    | a. 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 |
|    | b. Designed to have a non-operating shock level of at least 900 g at a duration of at least 1 msec.  |
| b. | Theodolite systems incorporating inertial equipment specially designed   |

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- 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 thereof.
- c. 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 down-hole well services operations.

*Note: The parameters of a.1. and a.2. 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 a half hours 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 g<sup>2</sup>/Hz over a frequency interval*



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|  | <p><i>of 15 to 1 000 Hz;<br/>and<br/>b. The PSD attenuates with a frequency from 0,04 g<sup>2</sup>/Hz to 0,01 g<sup>2</sup>/Hz over a frequency interval from 1 000 to 2 000 Hz;</i></p> <p><i>2. A roll and yaw rate equal to or greater than +2,62 radian/s (150 deg/s); or</i></p> <p><i>3. According to national standards equivalent to 1. or 2. above.</i></p> <p><i>Technical notes:</i></p> <p><i>1. a.2. 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.</i></p> <p><i>2. “Circular Error Probable” (CEP)<br/>– In a circular normal distribution, the radius of the circle containing 50 percent of the individual measurements being made, or the radius of the circle within which there is a 50 percent probability of being located.</i></p> |
|--|---|

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## I.A9.

## GOODS

No	Description	Related item from Annex I to Regulation (EC) No 428/2009
I.A9.001	Explosive bolts.	

## B. SOFTWARE

No	Description	Related item from Annex I to Regulation (EC) No 428/2009
I.B.001	Software required for the development, production or use of the items in Part A. (Goods).	

## C. TECHNOLOGY

No	Description	Related item from Annex I to Regulation (EC) No 428/2009
I.C.001	Technology required for the development, production or use of the items in Part A. (Goods).	

## ANNEX II

## ANNEX IV

**List of persons, entities and bodies referred to in Article 6(1)**

## A. Natural persons:

- (1) **Han** Yu-ro. Post: Director of Korea Ryongaksan General Trading Corporation. Other information: involved in North Korea's ballistic missile programme. Date of designation: 16.7.2009.
- (2) **Hwang** Sok-hwa. Post: Director of the General Bureau of Atomic Energy (GBAE). Other information: involved in North Korea's nuclear programme as Chief of the Scientific Guidance Bureau in the GBAE, served on the Science Committee in the Joint Institute for Nuclear Research. Date of designation: 16.7.2009.

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- (3) **Ri Hong-sop**. Year of birth: 1940. Post: Former director, Yongbyon Nuclear Research Centre. Other information: oversaw three core facilities that assist in the production of weapons-grade plutonium: the Fuel Fabrication Facility, the Nuclear Reactor, and the Reprocessing Plant. Date of designation: 16.7.2009.
- (4) **Ri Je-son** (alias **Ri Che-son**). Year of birth: 1938. Post: Director of the General Bureau of Atomic Energy (GBAE), chief agency directing North Korea's nuclear programme. Other information: facilitates several nuclear endeavours including GBAE's management of Yongbyon Nuclear Research Centre and Namchongang Trading Corporation. Date of designation: 16.7.2009.
- (5) **Yun Ho-jin** (alias **Yun Ho-chin**). Date of birth: 13.10.1944. Post: Director of Namchongang Trading Corporation. Other information: oversees the import of items needed for the uranium enrichment programme. Date of designation: 16.7.2009.

B. Legal persons, entities and bodies

- (1) **Korea Mining Development Trading Corporation** (aka (a) CHANGGWANG SINYONG CORPORATION; (b) EXTERNAL TECHNOLOGY GENERAL CORPORATION; (c) DPRKN MINING DEVELOPMENT TRADING COOPERATION; (d) "KOMID"). Address: Central District, Pyongyang, DPRK. Other information: Leading arms dealer and main exporter of goods and equipment related to ballistic missiles and conventional weapons. Date of designation: 24.4.2009.
- (2) **Korea Ryonbong General Corporation** (aka (a) KOREA YONBONG GENERAL CORPORATION; (b) LYONGAKSAN GENERAL TRADING CORPORATION). Address: Pot'onggang District, Pyongyang, DPRK; Rakwon-dong, Pothonggang District, Pyongyang, DPRK. Other information: Defence conglomerate specialising in acquisition for DPRK defence industries and support to that country's military-related sales. Date of designation: 24.4.2009.
- (3) **Tanchon Commercial Bank** (aka (a) CHANGGWANG CREDIT BANK; (b) KOREA CHANGGWANG CREDIT BANK). Address: Saemul 1-Dong Pyongchon District, Pyongyang, DPRK. Other information: Main DPRK financial entity for sales of conventional arms, ballistic missiles, and goods related to the assembly and manufacture of such weapons. Date of designation: 24.4.2009.
- (4) **General Bureau of Atomic Energy** (GBAE) (aka General Department of Atomic Energy (GDAE)). Address: Haeudong, Pyongchen District, Pyongyang, DPRK. Other information: The GBAE is responsible for North Korea's nuclear programme, which includes the Yongbyon Nuclear Research Centre and its 5-MWe (25-MWt) plutonium production research reactor, as well as its fuel fabrication and reprocessing facilities. The GBAE has held nuclear-related meetings and discussions with the International Atomic Energy Agency. GBAE is the primary North Korean Government agency for overseeing nuclear programmes, including the operation of the Yongbyon Nuclear Research Centre. Date of designation: 16.7.2009.

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- (5) **Hong Kong Electronics** (aka Hong Kong Electronics Kish Co.). Address: Sanaee St., Kish Island, Iran. Other information: (a) owned or controlled by, or acts or purports to act for or on behalf of Tanchon Commercial Bank and KOMID; (b) Hong Kong Electronics has transferred millions of dollars of proliferation-related funds on behalf of Tanchon Commercial Bank and KOMID (both designated by the UN Sanctions Committee in April 2009) since 2007. Hong Kong Electronics has facilitated the movement of money from Iran to North Korea on behalf of KOMID. Date of designation: 16.7.2009.
- (6) **Korea Hyoksin Trading Corporation** (aka Korea Hyoksin Export And Import Corporation). Address: Rakwon-dong, Pothonggang District, Pyongyang, DPRK. Other information: (a) located in Pyongyang, DPRK; (b) subordinate to Korea Ryonbong General Corporation (designated by the UN Sanctions Committee in April 2009) and is involved in the development of weapons of mass destruction. Date of designation: 16.7.2009.
- (7) **Korean Tangun Trading Corporation**. Other information: (a) located in Pyongyang, DPRK; (b) Korea Tangun Trading Corporation is subordinate to the DPRK's Second Academy of Natural Sciences and is primarily responsible for the procurement of commodities and technologies to support North Korea's defence research and development programmes, including, but not limited to, weapons of mass destruction and delivery system programmes and procurement, including materials that are controlled or prohibited under relevant multilateral control regimes. Date of designation: 16.7.2009.
- (8) **Namchongang Trading Corporation** (aka (a) NCG, (b) Namchongang Trading, (c) Nam Chon Gang Corporation, (d) Nomchongang Trading Co., (e) Nam Chong Gan Trading Corporation). Other information: (a) located in Pyongyang, DPRK; (b) Namchongang is a North Korean trading company subordinate to the GBAE. Namchongang has been involved in the procurement of Japanese-origin vacuum pumps that were identified at a North Korean nuclear facility, as well as nuclear-related procurement associated with a German individual. It has further been involved in the purchase of aluminium tubes and other equipment specifically suitable for a uranium enrichment programme from the late 1990s. Its representative is a former diplomat who served as North Korea's representative for the IAEA inspection of the Yongbyon nuclear facilities in 2007. Namchongang's proliferation activities are of grave concern given North Korea's past proliferation activities. Date of designation: 16.7.2009

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## ANNEX III

## ‘ANNEX V

## LIST OF PERSONS, ENTITIES AND BODIES REFERRED TO IN ARTICLE 6(2)

## A.

## PERSONS

#	Name (and possible aliases)	Identifying information	Reasons
1.	CHANG Song-taek (alias JANG Song-Taek)	Date of birth: 2.2.1946 or 06.02.1946 or 23.02.1946 (North Hamgyong province) Passport number (as of 2006): PS 736420617	Member of the National Defence Commission. Director of the Administrative Department of the Korean Workers’ Party.
2.	CHON Chi Bu		Member of the General Bureau of Atomic Energy, former technical director of Yongbyon.
3.	CHU Kyu-Chang (alias JU Kyu-Chang)	Date of birth: between 1928 and 1933	First Deputy Director of the Defence Industry Department (ballistics programme), Korean Workers’ Party, Member of the National Defence Commission.
4.	HYON Chol-hae	Year of birth: 1934 (Manchuria, China)	Deputy Director of the General Political Department of the People's Armed Forces (military adviser to Kim Jong Il).
5.	JON Pyong-ho	Year of birth: 1926	Secretary of the Central Committee of the Korean Workers’ Party, Head of the Central Committee's Military Supplies Industry Department controlling the

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			Second Economic Committee of the Central Committee, member of the National Defence Commission.
6.	KIM Tong-un	Year of birth: 1936 Passport number: 554410660	Director of “Office 39” of the Central Committee of the Workers’ Party, which is involved in proliferation financing.
7.	KIM-Yong-chun (alias Young-chun)	Date of birth: 04.03.1935	Deputy Chairman of the National Defence Commission, Minister for the People's Armed Forces, special adviser to Kim Jong Il on nuclear strategy.
8.	O Kuk-Ryol	Year of birth: 1931 (Jilin Province, China)	Deputy Chairman of the National Defence Commission, supervising the acquisition abroad of advanced technology for nuclear and ballistics programmes.
9.	PAEK Se-bong	Year of birth: 1946	Chairman of the Second Economic Committee (responsible for the ballistics programme) of the Central Committee of the Korean Workers’ Party. Member of the National Defence Commission.
10.	PAK Jae-gyong (alias Chae-Kyong)	Year of birth: 1933 Passport number: 554410661	Deputy Director of the General Political Department of the People's Armed Forces and Deputy Director of the Logistics Bureau of the People's Armed Forces (military

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			adviser to Kim Jong II).
11.	PYON Yong Rip (alias Yong-Nip)	Date of birth: 20.09.1929 Passport number: 645310121 (issued on 13.09.2005)	President of the Academy of Science, involved in WMD- related biological research.
12.	RYOM Yong		Director of the General Bureau of Atomic Energy (entity designated by the United Nations), in charge of international relations.
13.	SO Sang-kuk	Year of birth: between 1932 and 1938	Head of the Department of Nuclear Physics, Kim II Sung University.

## B.

### ENTITIES AND BODIES

#	Name (and possible aliases)	Identifying information	Reasons
1.	Yongbyon Nuclear Research Centre		Research centre which has taken part in the production of military-grade plutonium. Centre maintained by the General Bureau of Atomic Energy (entity designated by the United Nations, 16.07.2009).
2.	Korea Pugang Mining and Machinery Corporation ltd		Subsidiary of Korea Ryongbong General Corporation (entity designated by the United Nations, 24.04.2009); operates facilities for the production of aluminium powder, which can be used in missiles.

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3.	Korean Ryengwang Trading Corporation		Subsidiary of Korea Ryongbong General Corporation (entity designated by the United Nations, 24.04.2009).
4.	Sobaeku United Corp. (alias Sobaeksu United Corp.)		State-owned company, involved in research into, and the acquisition of, sensitive products and equipment. It possesses several deposits of natural graphite, which provide raw material for two processing facilities which, inter alia, produce graphite blocks that can be used in missiles.'

## ANNEX IV

## ANNEX VI

**LIST OF CREDIT AND FINANCIAL INSTITUTIONS, BRANCHES  
AND SUBSIDIARIES REFERRED TO IN ARTICLE 11A**



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- (1) OJ L 197, 29.7.2009, p. 111.
- (2) OJ L 344, 23.12.2009, p. 47
- (3) OJ L 322, 22.11.2006, p. 32.
- (4) OJ L 134, 29.5.2009, p. 1.
- (5) OJ L 302, 19.10.1992, p. 1.
- (6) OJ L 253, 11.10.1993, p. 1.
- (7) OJ L 88, 29.3.2007, p. 1.
- (8) OJ L 8, 12.1.2001, p. 1.
- (9) OJ L 281, 23.11.1995, p. 31.
- (10) OJ L 134, 29.5.2009, p. 1.?’;
- (11) OJ L 117, 4.5.2005, p. 13.
- (12) OJ L 360, 19.12.2006, p. 64.?’;
- (13) OJ L 8, 12.1.2001, p. 1.?’;

**Status:**

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**Changes to legislation:**

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