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(Acts whose publication is obligatory)

**REGULATION (EC) No 842/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**  
**of 17 May 2006**  
**on certain fluorinated greenhouse gases**  
 (Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

atmosphere at a level which prevents dangerous anthropogenic interference with the climate system.

Having regard to the Treaty establishing the European Community, and in particular, Article 175(1) thereof and Article 95 thereof in relation to Articles 7, 8 and 9 of this Regulation,

- (3) Council Decision 2002/358/EC of 25 April 2002 concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfilment of commitments thereunder<sup>(2)</sup> commits the Community and its Member States to reduce their aggregate anthropogenic emissions of greenhouse gases listed in Annex A to the Kyoto Protocol by 8 % compared to 1990 levels in the period from 2008 to 2012.

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee<sup>(1)</sup>,

- (4) Most fluorinated greenhouse gases controlled under the Kyoto Protocol and this Regulation have a high global warming potential.

Acting in accordance with the procedure laid down in Article 251 of the Treaty<sup>(2)</sup>, in the light of the joint text approved by the Conciliation Committee on 14 March 2006,

- (5) Provision should be made for the prevention and minimisation of emissions of fluorinated greenhouse gases, without prejudice to Council Directive 75/442/EEC of 15 July 1975 on waste<sup>(6)</sup>, Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control<sup>(7)</sup>, Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of life vehicles<sup>(8)</sup> and Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE)<sup>(9)</sup>.

Whereas:

- (1) The Sixth Community Environment Action Programme<sup>(3)</sup> identifies climate change as a priority for action. That Programme recognises that the Community is committed to achieving an 8 % reduction in emissions of greenhouse gases in the period from 2008 to 2012 compared to 1990 levels, and that, in the longer-term, global emissions of greenhouse gases will need to be reduced by approximately 70 % compared to 1990 levels.
- (2) The ultimate objective of the United Nations Framework Convention on Climate Change, which was approved by Council Decision 94/69/EC of 15 December 1993 concerning the conclusion of the United Nations Framework Convention on Climate Change<sup>(4)</sup>, is to achieve stabilisation of greenhouse gas concentrations in the

- (6) The primary objective of this Regulation is to reduce the emissions of the fluorinated greenhouse gases covered by the Kyoto Protocol and thus to protect the environment.

<sup>(1)</sup> OJ C 108, 30.4.2004, p. 62.

<sup>(2)</sup> Opinion of the European Parliament of 31 March 2004 (OJ C 103 E, 29.4.2004, p. 600), Council Common Position of 21 June 2005 (OJ C 183 E, 26.7.2005, p. 1) and Position of the European Parliament of 26 October 2005 (not yet published in the Official Journal). Legislative Resolution of the European Parliament of 6 April 2006 and Council Decision of 25 April 2006.

<sup>(3)</sup> Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme (OJ L 242, 10.9.2002, p. 1).

<sup>(4)</sup> OJ L 33, 7.2.1994, p. 11.

<sup>(3)</sup> OJ L 130, 15.5.2002, p. 1.

<sup>(6)</sup> OJ L 194, 25.7.1975, p. 39. Directive as last amended by Regulation (EC) No 1882/2003 of the European Parliament and of the Council (OJ L 284, 31.10.2003, p. 1).

<sup>(7)</sup> OJ L 257, 10.10.1996, p. 26. Directive as last amended by Regulation (EC) No 166/2006 of the European Parliament and of the Council (OJ L 33, 4.2.2006, p. 1).

<sup>(8)</sup> OJ L 269, 21.10.2000, p. 34. Directive as last amended by Council Decision 2005/673/EC (OJ L 254, 30.9.2005, p. 69).

<sup>(9)</sup> OJ L 37, 13.2.2003, p. 24. Directive as amended by Directive 2003/108/EC (OJ L 345, 31.12.2003, p. 106).

The legal base should therefore be Article 175(1) of the Treaty.

- (7) Nevertheless, it is appropriate to take measures at Community level on the basis of Article 95 of the Treaty to harmonise requirements on the use of fluorinated greenhouse gases and the marketing and labelling of products and equipment containing fluorinated greenhouse gases. Marketing and use restrictions for certain applications of fluorinated greenhouse gases are considered appropriate where viable alternatives are available and improvement of containment and recovery is not feasible. Voluntary initiatives by some industry sectors should also be taken into account, as well as the fact that the development of alternatives is still ongoing.
- (8) The application and enforcement of this Regulation should spur technological innovation by encouraging continued development of alternative technologies and transition to already existing technologies that are more environmentally friendly.
- (9) Member States should facilitate the cross-border shipment of recovered fluorinated greenhouse gases for destruction or reclamation within the Community in accordance with the Regulation of the European Parliament and of the Council on shipments of waste <sup>(1)</sup>.
- (10) The placing on the market of the products and equipment containing fluorinated greenhouse gases as listed in Annex II is detrimental to the objectives and commitments of the Community and its Member States with regard to climate change and it is therefore necessary to restrict the placing on the market of these products and equipment as regards the Community. This could also be the case concerning other applications containing fluorinated greenhouse gases and therefore the need for an extension of Annex II should be reviewed, taking account of the environmental benefits, the technical feasibility and cost effectiveness.
- (11) Annex II to Decision 2002/358/EC lays down different targets for individual Member States and Member States have adopted different strategies to achieve these targets. Member States should be able to maintain existing national measures adopted in order to meet those targets for a limited period of time in accordance with Article 95 of the Treaty.
- (12) In order to contribute to the fulfilment of the commitments of the Community and its Member States under the UN Framework Convention on Climate Change, the Kyoto Protocol and Decision 2002/358/EC, Directive 2006/40/EC of the European Parliament and of the Council of 17 May 2006 relating to emissions from air conditioning systems

in motor vehicles and amending Council Directive 70/156/EEC <sup>(2)</sup> and this Regulation, which both contribute to prevention and minimisation of emissions of fluorinated greenhouse gases, should be adopted and published in the *Official Journal of the European Union* simultaneously.

- (13) Provision should be made for the monitoring, evaluation and review of the provisions contained in this Regulation.
- (14) Member States should lay down rules on penalties applicable to infringements of this Regulation and ensure that those rules are implemented. Those penalties must be effective, proportionate and dissuasive.
- (15) This Regulation respects the fundamental rights and observes the principles recognised in particular by the Charter of Fundamental Rights of the European Union.
- (16) Since the objectives of this Regulation, namely the containment and reporting of certain fluorinated greenhouse gases and the control of use and placing on the market of products and equipment containing certain fluorinated greenhouse gases, in order to protect the environment and to preserve the internal market, cannot be sufficiently achieved by the Member States and can therefore by reason of the scale and effects of this Regulation be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Regulation does not go beyond what is necessary in order to achieve those objectives.
- (17) The measures necessary for the implementation of this Regulation should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission <sup>(3)</sup>,

HAVE ADOPTED THIS REGULATION:

#### Article 1

#### Scope

The objective of this Regulation is to contain, prevent and thereby reduce emissions of the fluorinated greenhouse gases covered by the Kyoto Protocol. It shall apply to the fluorinated greenhouse gases listed in Annex A to that Protocol. Annex I to this Regulation contains a list of the fluorinated greenhouse gases currently covered by this Regulation, together with their global warming potentials. In the light of revisions provided for by Article 5(3) of the Kyoto Protocol and accepted by the Community and its Member States, Annex I may be reviewed and if appropriate may then be updated.

<sup>(2)</sup> See page 12 of this Official Journal.

<sup>(3)</sup> OJ L 184, 17.7.1999, p. 23.

<sup>(1)</sup> Not yet published in the Official Journal.

This Regulation addresses the containment, use, recovery and destruction of the fluorinated greenhouse gases listed in Annex I; the labelling and disposal of products and equipment containing those gases; the reporting of information on those gases; the control of uses referred to in Article 8 and the placing on the market prohibitions of the products and equipment referred to in Article 9 and Annex II; and the training and certification of personnel and companies involved in activities provided for by this Regulation.

This Regulation shall apply without prejudice to Directives 75/442/EEC, 96/61/EC, 2000/53/EC and 2002/96/EC.

## Article 2

### Definitions

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

1. 'fluorinated greenhouse gases' means hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF<sub>6</sub>) as listed in Annex I and preparations containing those substances, but excludes substances controlled under Regulation (EC) No 2037/2000 of the European Parliament and of the Council of 29 June 2000 on substances that deplete the ozone layer <sup>(1)</sup>;
2. 'hydrofluorocarbon' means an organic compound consisting of carbon, hydrogen and fluorine, and where no more than six carbon atoms are contained in the molecule;
3. 'perfluorocarbon' means an organic compound consisting of carbon and fluorine only, and where no more than six carbon atoms are contained in the molecule;
4. 'global warming potential' means the climatic warming potential of a fluorinated greenhouse gas relative to that of carbon dioxide. The global warming potential (GWP) is calculated in terms of the 100-year warming potential of one kilogram of a gas relative to one kilogram of CO<sub>2</sub>. The GWP figures listed in Annex I are those published in the third assessment report (TAR) adopted by the Intergovernmental Panel on Climate Change (2001 IPCC GWP values) <sup>(2)</sup>;
5. 'preparation' means for the purposes of the obligations in this Regulation, excluding destruction, a mixture composed of two or more substances at least one of which is a fluorinated greenhouse gas, except where the total global warming potential of the preparation is less than 150. The total global warming potential <sup>(3)</sup> of the preparation shall be determined in accordance with Part 2 of Annex I;
6. 'operator' means the natural or legal person exercising actual power over the technical functioning of the equipment and systems covered by this Regulation; a Member State may, in defined, specific situations, designate the owner as being responsible for the operator's obligations;
7. 'placing on the market' means the supplying of or making available to a third party within the Community for the first time, against payment or free of charge, products and equipment containing or whose functioning relies upon fluorinated greenhouse gases, and includes import into the customs territory of the Community;
8. 'use' means the utilisation of fluorinated greenhouse gases in the production, refilling, servicing or maintenance of products and equipment covered by this Regulation;
9. 'heat pump' means a device or installation that extracts heat at low temperature from air, water or earth and supplies heat;
10. 'leakage detection system' means a calibrated mechanical, electrical or electronic device for detecting leakage of fluorinated greenhouse gases which, on detection, alerts the operator;
11. 'hermetically sealed system' means a system in which all refrigerant containing parts are made tight by welding, brazing or a similar permanent connection which may include capped valves and capped service ports that allow proper repair or disposal and which have a tested leakage rate of less than 3 grams per year under a pressure of at least a quarter of the maximum allowable pressure;
12. 'container' means a product which is designed primarily for transporting or storing fluorinated greenhouse gases;
13. 'a non-refillable container' means a container that is designed not to be refilled and is used in the servicing, maintenance or filling of refrigeration, air-conditioning or heat pump equipment, fire protection systems or high-voltage switchgear, or to store or transport fluorinated greenhouse gas based solvents;
14. 'recovery' means the collection and storage of fluorinated greenhouse gases from, for example, machinery, equipment and containers;
15. 'recycling' means the reuse of a recovered fluorinated greenhouse gas following a basic cleaning process;
16. 'reclamation' means the reprocessing of a recovered fluorinated greenhouse gas in order to meet a specified standard of performance;

<sup>(1)</sup> OJ L 244, 29.9.2000, p. 1. Regulation as last amended by Commission Regulation (EC) No 29/2006 (OJ L 6, 11.1.2006, p. 27).

<sup>(2)</sup> IPCC Third Assessment Climate Change 2001. A Report of the Intergovernmental Panel on Climate Change (<http://www.ipcc.ch/pub/reports.htm>).

<sup>(3)</sup> For the calculation of the GWP of non-fluorinated greenhouse gases in preparations, the values published in the First IPCC Assessment shall apply, see: Climate Change, The IPCC Scientific Assessment, J.T. Houghton, G.J. Jenkins, J.J. Ephraums (ed.), Cambridge University Press, Cambridge (UK) 1990.

17. 'destruction' means the process by which all or most of a fluorinated greenhouse gas is permanently transformed or decomposed into one or more stable substances which are not fluorinated greenhouse gases;
18. 'stationary application or equipment' means an application or equipment which is normally not in transit during operation;
19. 'novelty aerosol' means those aerosol generators marketed and intended for sale to the general public for entertainment and decorative purposes as listed in the Annex to Directive 94/48/EC <sup>(1)</sup>.

### Article 3

#### Containment

1. Operators of the following stationary applications: refrigeration, air conditioning and heat pump equipment, including their circuits, as well as fire protection systems, which contain fluorinated greenhouse gases listed in Annex I, shall, using all measures which are technically feasible and do not entail disproportionate cost:

- (a) prevent leakage of these gases; and
- (b) as soon as possible repair any detected leakage.

2. Operators of the applications referred to in paragraph 1 shall ensure that they are checked for leakage by certified personnel who comply with the requirements of Article 5, according to the following schedule:

- (a) applications containing 3 kg or more of fluorinated greenhouse gases shall be checked for leakage at least once every 12 months; this shall not apply to equipment with hermetically sealed systems, which are labelled as such and contain less than 6 kg of fluorinated greenhouse gases;
- (b) applications containing 30 kg or more of fluorinated greenhouse gases shall be checked for leakage at least once every six months;
- (c) applications containing 300 kg or more of fluorinated greenhouse gases shall be checked for leakage at least once every three months.

The applications shall be checked for leakage within one month after a leak has been repaired to ensure that the repair has been effective.

For the purposes of this paragraph, 'checked for leakage' means that the equipment or system is examined for leakage using direct or indirect measuring methods, focusing on those parts of the equipment or system most likely to leak. The direct and

indirect measuring methods of checking for leakage shall be specified in the standard checking requirements referred to in paragraph 7.

3. Operators of the applications referred to in paragraph 1, containing 300 kg or more of fluorinated greenhouse gases, shall install leakage detection systems. These leakage detection systems shall be checked at least once every 12 months to ensure their proper functioning. In the case of such fire protection systems installed before 4 July 2007, leakage detection systems shall be fitted by 4 July 2010.

4. Where a properly functioning appropriate leakage detection system is in place, the frequency of the checks required under paragraph 2(b) and (c) shall be halved.

5. In the case of fire protection systems where there is an existing inspection regime in place to meet ISO 14520 standard, these inspections may also fulfil the obligations of this Regulation as long as those inspections are at least as frequent.

6. Operators of the applications referred to in paragraph 1, containing 3 kg or more of fluorinated greenhouse gases, shall maintain records on the quantity and type of fluorinated greenhouse gases installed, any quantities added and the quantity recovered during servicing, maintenance and final disposal. They shall also maintain records of other relevant information including the identification of the company or technician who performed the servicing or maintenance, as well as the dates and results of the checks carried out under paragraphs 2, 3 and 4 and relevant information specifically identifying the separate stationary equipment of applications referred to in paragraph 2(b) and (c). These records shall be made available on request to the competent authority and to the Commission.

7. By 4 July 2007, the Commission shall establish, in accordance with the procedure referred to in Article 12(2), the standard leakage checking requirements for each of the applications referred to in paragraph 1 of this Article.

### Article 4

#### Recovery

1. Operators of the following types of stationary equipment shall be responsible for putting in place arrangements for the proper recovery by certified personnel, who comply with the requirements of Article 5, of fluorinated greenhouse gases to ensure their recycling, reclamation or destruction:

- (a) the cooling circuits of refrigeration, air-conditioning and heat pump equipment;
- (b) equipment containing fluorinated greenhouse gas-based solvents;

<sup>(1)</sup> Directive 94/48/EC of the European Parliament and of the Council of 7 December 1994 amending for the 13th time Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations (OJ L 331, 21.12.1994, p. 7).

- (c) fire protection systems and fire extinguishers; and
- (d) high-voltage switchgear.

2. When a refillable or non-refillable fluorinated greenhouse gas container reaches the end of its life, the person utilising the container for transport or storage purposes shall be responsible for putting in place arrangements for the proper recovery of any residual gases it contains to ensure their recycling, reclamation or destruction.

3. The fluorinated greenhouse gases contained in other products and equipment, including mobile equipment unless it is serving military operations, shall, to the extent that it is technically feasible and does not entail disproportionate cost, be recovered by appropriately qualified personnel, to ensure their recycling, reclamation or destruction.

4. Recovery, for the purpose of recycling, reclamation or destruction of the fluorinated greenhouse gases, pursuant to paragraphs 1 to 3, shall take place before the final disposal of that equipment and, when appropriate, during its servicing and maintenance.

#### Article 5

##### Training and certification

1. By 4 July 2007, on the basis of information received from Member States and in consultation with the relevant sectors, minimum requirements and the conditions for mutual recognition shall be established in accordance with the procedure referred to in Article 12(2) in respect of training programmes and certification for both the companies and the relevant personnel involved in installation, maintenance or servicing of the equipment and systems covered by Article 3(1) as well as for the personnel involved in the activities provided for in Articles 3 and 4.

2. By 4 July 2008, Member States shall establish or adapt their own training and certification requirements, on the basis of the minimum requirements referred to in paragraph 1. Member States shall notify the Commission of their training and certification programmes. Member States shall give recognition to the certificates issued in another Member State and shall not restrict the freedom to provide services or the freedom of establishment for reasons relating to the certification issued in another Member State.

3. The operator of the relevant application shall ensure that the relevant personnel have obtained the necessary certification, referred to in paragraph 2, which implies appropriate knowledge of the applicable regulations and standards as well as the necessary competence in emission prevention and recovery of fluorinated greenhouse gases and handling safely the relevant type and size of equipment.

4. By 4 July 2009 Member States shall ensure that the companies involved in carrying out the activities provided for in Articles 3 and 4 shall only take delivery of fluorinated

greenhouse gases where their relevant personnel hold the certificates mentioned in paragraph 2 of this Article.

5. By 4 July 2007 the Commission shall determine, in accordance with the procedure referred to in Article 12(2), the format of the notification referred to in paragraph 2 of this Article.

#### Article 6

##### Reporting

1. By 31 March 2008 and every year thereafter, each producer, importer and exporter of fluorinated greenhouse gases shall communicate to the Commission by way of a report, sending the same information to the competent authority of the Member State concerned, the following data in respect of the preceding calendar year:

- (a) each producer who produces more than one tonne of fluorinated greenhouse gases per annum shall communicate:
  - its total production of each fluorinated greenhouse gas in the Community, identifying the main categories of applications (e.g. mobile air-conditioning, refrigeration, air-conditioning, foams, aerosols, electrical equipment, semi-conductor manufacture, solvents and fire protection) in which the substance is expected to be used,
  - the quantities of each fluorinated greenhouse gas it has placed on the market in the Community,
  - any quantities of each fluorinated greenhouse gas recycled, reclaimed or destroyed;
- (b) each importer who imports more than one tonne of fluorinated greenhouse gases per annum, including any producers who also import, shall communicate:
  - the quantity of each fluorinated greenhouse gas it has imported or placed on the market in the Community, separately identifying the main categories of applications (e.g. mobile air-conditioning, refrigeration, air-conditioning, foams, aerosols, electrical equipment, semi-conductor manufacture) in which the substance is expected to be used,
  - any quantities of each used fluorinated greenhouse gas it has imported for recycling, for reclamation or for destruction;
- (c) each exporter who exports more than one tonne of fluorinated greenhouse gases per annum, including any producers who also export, shall communicate:
  - the quantities of each fluorinated greenhouse gas it has exported from the Community,

- any quantities of each used fluorinated greenhouse gas it has exported for recycling, for reclamation or for destruction.
2. By 4 July 2007, the Commission shall determine, in accordance with the procedure referred to in Article 12(2), the format of the reports referred to in paragraph 1 of this Article.
  3. The Commission shall take appropriate steps to protect the confidentiality of the information submitted to it.
  4. Member States shall establish reporting systems for the relevant sectors referred to in this Regulation, with the objective of acquiring, to the extent possible, emission data.

#### Article 7

##### Labelling

1. Without prejudice to the provisions of Directive 67/548/EEC <sup>(1)</sup> and of Directive 1999/45/EC <sup>(2)</sup> in respect of the labelling of dangerous substances and preparations, the products and equipment, listed in paragraph 2, containing fluorinated greenhouse gases shall not be placed on the market unless the chemical names of the fluorinated greenhouse gases are identified by way of a label using the accepted industry nomenclature. Such label shall clearly indicate that the product or equipment contains fluorinated greenhouse gases covered by the Kyoto Protocol and their quantity, and this shall be clearly and indelibly stated on the product or equipment, adjacent to the service points for charging or recovering the fluorinated greenhouse gas, or on that part of the product or equipment which contains the fluorinated greenhouse gas. Hermetically sealed systems shall be labelled as such.

Information on the fluorinated greenhouse gases, including their global warming potential, shall be included in the instruction manuals provided for such products and equipment.

2. Paragraph 1 shall apply to the following types of products and equipment:
  - (a) refrigeration products and equipment which contain perfluorocarbons or preparations containing perfluorocarbons;
  - (b) refrigeration and air conditioning products and equipment (other than those contained in motor vehicles), heat pumps, fire protection systems and fire extinguishers, if the respective type of product or equipment contains hydrofluorocarbons or preparations containing hydrofluorocarbons;

<sup>(1)</sup> Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (OJ L 196, 16.8.1967, p. 1). Directive as last amended by Commission Directive 2004/73/EC (OJ L 152, 30.4.2004, p. 1).

<sup>(2)</sup> Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations (OJ L 200, 30.7.1999, p. 1). Directive as last amended by Commission Directive 2006/8/EC (OJ L 19, 24.1.2006, p. 12).

- (c) switchgear which contains sulphur hexafluoride or preparations containing sulphur hexafluoride; and
- (d) all fluorinated greenhouse gas containers.

3. The form of the label to be used shall be established in accordance with the procedure referred to in Article 12(2). Labelling requirements additional to those set out in paragraph 1 shall, if appropriate, be adopted in accordance with the same procedure. Before submitting a proposal to the Committee referred to in Article 12(1), the Commission shall review the desirability of including additional environmental information, including the global warming potential, on labels, taking due account of existing labelling schemes already applicable to the products and equipment referred to in paragraph 2.

#### Article 8

##### Control of use

1. The use of sulphur hexafluoride or preparations thereof in magnesium die-casting, except where the quantity of sulphur hexafluoride used is below 850 kg per year, shall be prohibited from 1 January 2008.
2. The use of sulphur hexafluoride or preparations thereof for the filling of vehicle tyres shall be prohibited from 4 July 2007.

#### Article 9

##### Placing on the market

1. The placing on the market of products and equipment containing, or whose functioning relies upon, fluorinated greenhouse gases, as listed in Annex II shall be prohibited as specified in that Annex.
2. Paragraph 1 shall not apply to products and equipment shown to be manufactured before the date of entry into force of the relevant placing on the market prohibition.
3. (a) Where a Member State has, by 31 December 2005, adopted national measures which are stricter than those laid down in this Article and which fall within the scope of this Regulation, concerning the placing on the market of products and equipment containing, or whose functioning relies upon, fluorinated greenhouse gases, that Member State may, subject to point (b), maintain those national measures until 31 December 2012.
  - (b) The Member State in question shall notify the national measures to the Commission, accompanied by justification in support of those measures, by 4 July 2007. Such

measures must be compatible with the Treaty. The Commission shall provide to the Committee referred to in Article 12(1) relevant information on such measures.

#### Article 10

##### Review

1. On the basis of progress in potential containment or replacement of fluorinated greenhouse gases in air conditioning systems, other than those fitted to motor vehicles referred to in Council Directive 70/156/EEC of 6 February 1970 on the approximation of laws relating to the type-approval of motor vehicles and their trailers <sup>(1)</sup>, and in refrigeration systems contained in modes of transport, the Commission shall review this Regulation and publish a report by 31 December 2007 at the latest. It shall, if appropriate, accompany this report with legislative proposals by 31 December 2008, with a view to applying the provisions of Article 3 to air-conditioning systems, other than those fitted to motor vehicles referred to in Directive 70/156/EEC, and refrigeration systems contained in modes of transport.

2. By 4 July 2011, the Commission shall publish a report based on the experience of the application of this Regulation. In particular, the report shall:

- (a) assess the impact of relevant provisions on emissions and projected emissions of fluorinated greenhouse gases and examine the cost-effectiveness of these provisions;
  - (b) in the light of future assessment reports of the IPCC, assess whether additional fluorinated greenhouse gases should be added to Annex I;
  - (c) evaluate the training and certification programmes established by Member States under Article 5(2);
  - (d) assess the need for Community standards relating to the control of emissions of fluorinated greenhouse gases from products and equipment, in particular as regards foam, including technical requirements with respect to the design of products and equipment;
  - (e) evaluate the effectiveness of containment measures carried out by operators under Article 3 and assess whether maximum leakage rates for installations can be established;
  - (f) assess and, if appropriate, may propose a modification of the reporting requirements in Article 6(1), in particular the one tonne quantitative limit, and assess the need for the competent authorities to report periodically to the Commission estimated emissions based on representative samples to improve the practical application of those reporting requirements;
  - (g) assess the need for the development and dissemination of notes describing best available techniques and best environmental practices concerning the prevention and minimisation of emissions of fluorinated greenhouse gases;
  - (h) include an overall summary of the development, both within the Community and at an international level, of the state of technology, in particular as regards foams, experience gained, environmental requirements and any impacts on the functioning of the internal market;
  - (i) assess whether the substitution of sulphur hexafluoride in sand casting, permanent mould casting and high-pressure die-casting is technically feasible and cost-effective and, if appropriate, propose a revision of Article 8(1) by 1 January 2009; it shall also review the exemption contained in Article 8(1) in the light of further assessment of the available alternatives by 1 January 2010;
  - (j) assess whether the inclusion of further products and equipment containing fluorinated greenhouse gases in Annex II is technically feasible and cost-effective, taking account of energy-efficiency, and, if appropriate, make proposals to amend Annex II in order to include such further products and equipment;
  - (k) assess whether Community provisions concerning the global warming potential of fluorinated greenhouse gases should be amended; any changes should take account of technological and scientific developments and the need to respect industrial product planning timescales;
  - (l) assess the need for further action by the Community and its Member States in the light of existing and new international commitments regarding the reduction of greenhouse gas emissions.
3. Where necessary, the Commission shall present appropriate proposals for revision of the relevant provisions of this Regulation.

#### Article 11

Without prejudice to relevant Community law, in particular Community rules on State aid and Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on Information Society services <sup>(2)</sup>, Member States may promote the placing on the market of products and equipment which use alternatives to gases with a high global warming potential and which are efficient, innovative and further reduce the climate impact.

<sup>(1)</sup> OJ L 42, 23.2.1970, p. 1. Directive as last amended by Directive 2005/64/EC of the European Parliament and of the Council (OJ L 310, 25.11.2005, p. 10).

<sup>(2)</sup> OJ L 204, 21.7.1998, p. 37. Directive as last amended by the 2003 Act of Accession.

*Article 12***Committee**

1. The Commission shall be assisted by the Committee instituted by Article 18 of Regulation (EC) No 2037/2000.

2. Where reference is made to this paragraph, Articles 5 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

The period laid down in Article 5(6) of Decision 1999/468/EC shall be set at three months.

3. The Committee shall adopt its Rules of Procedure.

*Article 13***Penalties**

1. Member States shall lay down rules on penalties applicable to infringements of the provisions of this Regulation and shall take all measures necessary to ensure that such rules are implemented. The penalties provided for shall be effective, proportionate and dissuasive.

2. Member States shall notify the rules on penalties to the Commission by 4 July 2008 and shall also notify it without delay of any subsequent amendment affecting those rules.

*Article 14*

Without prejudice to Article 9(3), Member States may maintain or introduce more stringent protective measures in accordance with the procedures laid down in Article 95 of the Treaty, in relation to Articles 7, 8 and 9 of this Regulation, or Article 176 of the Treaty in relation to other Articles of this Regulation.

*Article 15***Entry into force**

This Regulation shall enter into force on the 20th day following its publication in the *Official Journal of the European Union*.

It shall apply with effect from 4 July 2007, with the exception of Article 9 and Annex II, which shall apply from 4 July 2006.

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

Done at Strasbourg, 17 May 2006.

*For the European Parliament*

*The President*

J. BORRELL FONTELLES

*For the Council*

*The President*

H. WINKLER



## ANNEX I

## PART 1

## Fluorinated greenhouse gases referred to in Article 2(1)

Fluorinated greenhouse gas	Chemical Formula	Global warming potential (GWP)
Sulphur hexafluoride	SF <sub>6</sub>	22 200
<i>Hydrofluorocarbons (HFCs):</i>		
HFC-23	CHF <sub>3</sub>	12 000
HFC-32	CH <sub>2</sub> F <sub>2</sub>	550
HFC-41	CH <sub>3</sub> F	97
HFC-43-10mee	C <sub>5</sub> H <sub>2</sub> F <sub>10</sub>	1 500
HFC-125	C <sub>2</sub> HF <sub>5</sub>	3 400
HFC-134	C <sub>2</sub> H <sub>2</sub> F <sub>4</sub>	1 100
HFC-134a	CH <sub>2</sub> FCF <sub>3</sub>	1 300
HFC-152a	C <sub>2</sub> H <sub>4</sub> F <sub>2</sub>	120
HFC-143	C <sub>2</sub> H <sub>3</sub> F <sub>3</sub>	330
HFC-143a	C <sub>2</sub> H <sub>3</sub> F <sub>3</sub>	4 300
HFC-227ea	C <sub>3</sub> HF <sub>7</sub>	3 500
HFC-236cb	CH <sub>2</sub> FCF <sub>2</sub> CF <sub>3</sub>	1 300
HFC-236ea	CHF <sub>2</sub> CHFCF <sub>3</sub>	1 200
HFC-236fa	C <sub>3</sub> H <sub>2</sub> F <sub>6</sub>	9 400
HFC-245ca	C <sub>3</sub> H <sub>3</sub> F <sub>5</sub>	640
HFC-245fa	CHF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>	950
HFC-365mfc	CF <sub>3</sub> CH <sub>2</sub> CF <sub>2</sub> CH <sub>3</sub>	890
<i>Perfluorocarbons (PFCs):</i>		
Perfluoromethane	CF <sub>4</sub>	5 700
Perfluoroethane	C <sub>2</sub> F <sub>6</sub>	11 900
Perfluoropropane	C <sub>3</sub> F <sub>8</sub>	8 600
Perfluorobutane	C <sub>4</sub> F <sub>10</sub>	8 600
Perfluoropentane	C <sub>5</sub> F <sub>12</sub>	8 900
Perfluorohexane	C <sub>6</sub> F <sub>14</sub>	9 000
Perfluorocyclobutane	c-C <sub>4</sub> F <sub>8</sub>	10 000

**PART 2****Method of calculating the total global warming potential (GWP) for a preparation**

The total GWP for a preparation is a weighted average, derived from the sum of the weight fractions of the individual substances multiplied by their GWPs.

$$\Sigma (\text{Substance X \%} \times \text{GWP}) + (\text{Substance Y \%} \times \text{GWP}) + \dots (\text{Substance N \%} \times \text{GWP})$$

where % is the contribution by weight with a weight tolerance of +/- 1 %.

For example: applying the formula to a theoretical blend of gases consisting of 23 % HFC-32; 25 % HFC-125 and 52 % HFC-134a;

$$\Sigma (23 \% \times 550) + (25 \% \times 3\,400) + (52 \% \times 1\,300)$$

$$\rightarrow \text{Total GWP} = 1\,652,5$$

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## ANNEX II

**Placing on the market prohibitions in accordance with Article 9**

Fluorinated greenhouse gases	Products and equipment	Date of prohibition
Fluorinated greenhouse gases	Non-refillable containers	4 July 2007
Hydrofluorocarbons and perfluorocarbons	Non-confined direct-evaporation systems containing refrigerants	4 July 2007
Perfluorocarbons	Fire protection systems and fire extinguishers	4 July 2007
Fluorinated greenhouse gases	Windows for domestic use	4 July 2007
Fluorinated greenhouse gases	Other windows	4 July 2008
Fluorinated greenhouse gases	Footwear	4 July 2006
Fluorinated greenhouse gases	Tyres	4 July 2007
Fluorinated greenhouse gases	One component foams, except when required to meet national safety standards	4 July 2008
Hydrofluorocarbons	Novelty aerosols	4 July 2009