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NOTE

From:	General Secretariat of the Council
To:	Permanent Representatives Committee
No. Cion doc.:	15984/12 ENV 843 ENT 284 MI 706 CODEC 2614 - COM(2012) 643 final
Subject:	Proposal for a Regulation of the European Parliament and of the Council on fluorinated greenhouse gases - Analysis and approval of the final compromise text

1. On 4 October 2013, Coreper gave a mandate to the Presidency to enter into negotiations with the European Parliament on the above mentioned proposal with a view to reaching a first reading agreement on the abovementioned proposal. Four informal trilogues took place on 7 October, 6 and 27 November and 16 December 2013. The Presidency reported to the Committee at each occasion and the mandate of the Presidency was revised by the Committee in preparation for informal trilogues.
2. A compromise text resulting from the last trilogue meeting is set out in the Annex to this note (all changes compared to the original Commission proposal are marked).

3. The final compromise includes in particular:
- bans (point 11) on refrigerators and freezers for commercial use with GWP of 150 or more (1 January 2022), (point 11b) multipack centralised refrigeration systems for commercial use (1 January 2022) and (point 3) fire protection equipment that contain HFC-23 (1 January 2016), in Annex III;
 - the original Commission phase down in Annex V;
 - a review clause on pricing of HFC quota in Article 19 (3c).

4. The Permanent Representative Committee is invited to:

- [analyse the consolidated text as set out in the Annex to this note and confirm final agreement on an overall compromise text on this basis; and
- [authorise the Presidency, if appropriate, to send a letter to the European Parliament stating that if the Parliament were to adopt its position at first reading, in accordance with Article 294 paragraph 3 of the Treaty, in the form as set out in the Annex to this note, subject to the previous revision of the text by the lawyer-linguists, the Council would, in accordance with Article 294 paragraph 4 of the Treaty, approve the European Parliament's position and the act shall be adopted in the wording which corresponds to the European Parliament's position.

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on fluorinated greenhouse gases and repealing Regulation (EC) No 842/2006

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 192(1) thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee¹,

Having regard to the opinion of the Committee of the Regions²,

Acting in accordance with the ordinary legislative procedure,

¹ OJ C , , p. .

² OJ C , , p. .

Whereas:

- (1) The Fourth Assessment Report of the Intergovernmental Panel on Climate Change ("IPCC") of the United Nations Framework Convention on Climate Change ("UNFCCC"), to which the Union is party³, stated that, on the basis of existing scientific data, developed countries would need to reduce greenhouse gas emissions by 80 % to 95 % below 1990 emissions by 2050 to limit global climate change to a temperature increase of 2°C and thus prevent undesirable climate effects⁴.
- (2) To reach this target, the European Commission has laid out in a Low Carbon Economy Roadmap a cost-effective way of achieving the necessary overall emission reductions in the Union by 2050⁵. This roadmap establishes the sectoral contributions needed in six areas. Non-CO₂ emissions (including fluorinated greenhouse gases but excluding non-CO₂ emissions from agriculture) should be reduced by 72 % to 73 % by 2030 and by 70 % to 78 % by 2050, compared to 1990 levels. If based on the reference year 2005, a reduction in non-CO₂ emissions, except those from agriculture, of 60 % to 61 % by 2030 is required. Fluorinated greenhouse gas emissions were estimated at 90 million tonnes (Mt) of CO₂ equivalent in 2005. A 60 % reduction means that emissions would have to be reduced to around 35 Mt of CO₂ equivalent by 2030. Given estimated emissions of 104 Mt of CO₂ equivalent in 2030 based on the full application of current legislation, a further decrease of around 70 Mt of CO₂ equivalent is required.

³ Council Decision of 15 December 1993 concerning the conclusion of the United Nations Framework Convention on Climate Change, OJ L 33, 7.2.1994, p. 11.

⁴ Intergovernmental Panel on Climate Change (IPCC), 'Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007', Mitigation of Climate Change, Chapter 13.3.3.

⁵ A Roadmap for moving to a competitive low carbon economy in 2050, COM(2011) 112 final. The Roadmap was noted by the Council in its Conclusions of 17 May 2011, and was endorsed by the European Parliament in its Resolution of 15 March, 2012 (T7-0086/2012).

- (3) A Commission report⁶ on the application, effects and adequacy of Regulation (EC) No 842/2006⁷ concluded that the current containment measures, if fully applied, have the potential to reduce emissions of fluorinated greenhouse gases. Those measures should, therefore, be maintained and clarified on the basis of the experience gained in implementing them. Certain measures should also be extended to other appliances in which substantial quantities of fluorinated greenhouse gases are used, such as refrigerated trucks and trailers. The obligation to establish and maintain records of equipment that contains such gases should also cover electrical switchgear. Given the importance of containment measures at end of life, Member States should take account of the value of producer responsibility schemes and encourage their establishment, based on existing best practice.
- (4) The Commission's report also concluded that more can be done to reduce emissions of fluorinated greenhouse gases in the Union, in particular by avoiding the use of those gases where there are safe and energy efficient alternative technologies with no impact or a lower impact on the climate. A decrease of up to two thirds of the 2010 emissions by 2030 is cost-effective because proved and tested alternatives are available in many sectors.
- (4a) The European Parliament Resolution on a comprehensive approach to non-CO₂ climate relevant anthropogenic emissions (B7-0474/2011) welcomed the Union's commitment to support action on hydrofluorocarbons (HFCs) under the Montreal Protocol as a prime example of a non-market based approach to reducing greenhouse gas emissions. That Resolution also urged for the exploration of ways to promote an immediate phase down of HFCs at international level through the Montreal Protocol.

⁶ *Report from the Commission on the application, effects and adequacy of the Regulation on certain fluorinated greenhouse gases (Regulation (EC) No 842/2006)*, COM(2011) 581 final.

⁷ Regulation (EC) No 842/2006 of the European Parliament and of the Council of 17 May 2006 on certain fluorinated greenhouse gases, OJ L 161, 14.6.2006, p. 1.

- (5) To encourage the use of such technologies, the training of persons who carry out activities involving fluorinated greenhouse gases should cover [...] information on technologies that serve to replace and reduce the use of fluorinated greenhouse gases. [...] Given that some alternative refrigerants used in products and equipment to replace and reduce the use of fluorinated greenhouse gases can be toxic, flammable or highly pressurised, the Commission should examine existing EU legislation covering the training of natural persons for the safe handling of alternative refrigerants and should submit, if appropriate, a legislative proposal to the European Parliament and to the Council to amend relevant EU legislation.
- (5a) Certification and training programmes should be established or adapted taking account of those established under Regulation 842/2006 and may be integrated in the vocational training systems.
- (6) To ensure coherence with monitoring and reporting requirements under the UNFCCC and with Decision 4/CMP.7 of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol, global warming potentials should be calculated in terms of the 100-year global warming potential of one kilogram of a gas relative to one kilogram of CO₂. The calculation should where possible be based on the fourth assessment report adopted by the IPCC.
- (6a) Effective monitoring of fluorinated gas emissions is critical for tracking progress towards the achievement of emission reduction targets and the impacts of this Regulation. The use of consistent, high-quality data to report greenhouse gas emissions is essential to ensuring the quality of emissions reporting. The establishment of reporting systems by Member States of emissions of fluorinated gases would provide coherence with Regulation EU 525/2013 on mechanism for monitoring and reporting greenhouse gas emissions. Data on leakage of fluorinated gases from equipment collected by companies under Article 5 of the present Regulation could significantly improve these emission reporting systems. In this way, consistency of the data used to derive emissions could be checked and approximations based on calculations could be improved, leading to a better estimation of fluorinated gases in the national greenhouse gases inventories.

- (7) Given that there are suitable alternatives, the current ban on using sulphur hexafluoride in magnesium die-casting and the recycling of magnesium die-casting alloys should be extended to facilities that use less than 850 kg per year. Similarly, with an appropriate transitional period, the use of refrigerants with very high global warming potential ("GWP") 2500 or more to service or maintain refrigeration equipment with a charge size of 40 tonnes of CO₂ equivalent or more should be banned.
- (8) [...] Bans on the placing on the market of new equipment for refrigeration, air-conditioning and fire protection that operate using specific fluorinated greenhouse gases should be introduced where suitable alternatives to the use of those substances are available. [...] Where technical feasible alternatives are not available or cannot be used for technical or safety reasons or where the use of such alternatives would entail disproportionate costs, the Commission may authorise a time limited exemption to allow the placing on the market of such products and equipment. In the light of future technical developments, the Commission should further assess bans on the placing on the market of new equipment for medium-voltage secondary switchgear and new small single split air-conditioning systems.
- (9) [...] Equipment containing fluorinated greenhouse gases should [...] be allowed if their overall greenhouse gas emissions, taking into account realistic leakage and recovery rates, are less than those that would result from an equivalent equipment without fluorinated greenhouse gases, during its lifecycle, which has the maximum allowed energy consumption set out in relevant implementing measures adopted under Directive 2009/125/EC (Ecodesign)⁸. The regular and timely review of those implementing measures, in accordance with point 9, Annex VII, to that Directive would help to ensure that those implementing measures continue to be effective and appropriate.

⁸ Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products, OJ L 285, 31.10.2009, p. 10.

- (10) [...]
- (11) Gradually reducing the placing on the market of hydrofluorocarbons has been identified as the most effective, cost-efficient way of reducing emissions of those substances in the long term.
- (12) To implement the gradual reduction of the placing on the market of hydrofluorocarbons, the Commission should allocate quotas to individual producers and importers for placing them on the market in order that the overall quantitative limit for placing hydrofluorocarbons on the market in the Union is not exceeded. In order to protect the integrity of the gradual reduction of HFCs placed on the market, HFCs charged in equipment should be accounted for under the EU quota system. Where hydrofluorocarbons contained in equipment have not been placed on the EU market prior to the charging of the equipment, a declaration of conformity shall be required to evidence that those hydrofluorocarbons are accounted for under the EU quota system.
- (13) The quota allocation to individual companies should be based on the quantities of *hydrofluorocarbons* they have produced or imported during the reference period from *2009* to *2012*. However, in order not to exclude small operators, [...] eleven per cent of the overall quantitative limit should be reserved for importers and producers who have not placed on the market more than 1 tonne of fluorinated greenhouse gases in the reference period.
- (14) By regularly recalculating the quotas the Commission should ensure that new operators are allowed to continue their activities on the basis of the average volumes they placed on the market in the recent past.

- (14a) The manufacturing process for some fluorinated gases can result in significant by-product emissions of other fluorinated greenhouse gases. Such by-product emissions should be destroyed or recovered for subsequent use as a condition for placing fluorinated greenhouse gases on the market.
- (15) The Commission should ensure that a central electronic registry is in place to manage quotas, including the reporting of equipment placed on the market, where the equipment is pre-charged with hydrofluorocarbons under the quota system and verified as such, through a declaration of conformity and subsequent third party verification.
- (16) To maintain the flexibility of the market in bulk hydrofluorocarbons, transferring quotas should be permitted [...] to another producer [...] or importer [...] in the Union or to another producer or importer which is represented by an only representative.
- (17) In order to make it possible to monitor the effectiveness of the Regulation, the scope of the current reporting obligations should be extended to cover other fluorinated substances that have significant GWP or are likely to replace fluorinated greenhouse gases listed in Annex I as well. For the same reason the destruction of fluorinated greenhouse gases and the importation of those gases when contained in products and equipment should also be reported. *De minimis* thresholds should be set to avoid disproportionate administrative burden, in particular for small and medium-sized enterprises and micro-enterprises.

- (18) The Commission should continuously monitor the effects of reducing the placing on the market of hydrofluorocarbons, including the effect of reduction on the supply for appliances where the use of hydrofluorocarbons would result in lower life-cycle emissions than if an alternative technology was used. [...] A report on the availability of hydrofluorocarbons on the Union market should be published by the Commission by 2020. A comprehensive review should be carried out by the Commission before [...] 2022 in time to adapt the provisions of this Regulation in the light of its implementation and of new developments and international commitments, and to adopt, if appropriate, further reduction measures.
- (19) [...] In order to ensure uniform conditions for the implementation of this Regulation, implementing powers should be conferred on the Commission. Those powers should be exercised in accordance with Regulation 182/2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers⁹.
- (20) [...] In order to amend certain non-essential elements of this Regulation, the power to adopt delegated acts in accordance with Article 290 TFEU should be delegated to the Commission. It is of particular importance that the Commission carry out appropriate consultations during its preparatory work, including at expert level. The Commission, when preparing and drawing up delegated acts, should ensure a simultaneous, timely and appropriate transmission of relevant documents to the European Parliament and to the Council.
- (20a) Since it is adopted pursuant to Article 192(1) of the Treaty, this Regulation does not prevent Member States from maintaining or introducing more stringent protective measures that are compatible with the Treaty. Pursuant to Article 193 of the Treaty, Member States are to notify the Commission of any such measures.

⁹ OJ L 55, 28.2.2011, p. 13.

- (21) [...]
- (22) This Regulation amends and complements Regulation (EC) No 842/2006, which should therefore be repealed. However, in order to ensure as smooth a regime as possible from the old regime to the new regime, it is appropriate to provide that Commission Regulations 1493/2007, 1494/2007, 1497/2007, 1516/2007, 303/2008, 304/2008, 305/2008, 306/2008, 307/2008 and 308/2008 should remain in force and continue to apply unless and until repealed by Commission delegated or implementing acts adopted pursuant to this Regulation.

HAVE ADOPTED THIS REGULATION:

CHAPTER I

GENERAL PROVISIONS

Article -1 a

The objective of this Regulation is to protect the environment by reducing emissions of fluorinated greenhouse gases. Accordingly, this Regulation lays down rules on containment, use, recovery and destruction of fluorinated greenhouse gases, and related ancillary measures. It also imposes conditions on the placing on the market of specific products and equipment containing or relying upon fluorinated greenhouse gases and specific uses of these gases, whilst setting out quantitative limits for the placing on the market of hydrofluorocarbons.

Article 1

Definitions

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

1. 'fluorinated greenhouse gases' means the hydrofluorocarbons ("HFCs"), perfluorocarbons ("PFCs"), sulphur hexafluoride ("SF₆") and other greenhouse gases that contain fluorine, as listed in Annex I, or mixtures containing any of these substances [...];
 - 1a. 'hydrofluorocarbons (HFCs)' means substances listed in section 1 of Annex I, or mixtures containing any of those substances;
 - 1b. 'perfluorocarbons (PFCs)' means substances listed in section 2 of Annex I, or mixtures containing any of those substances;
 - 1c. 'sulphur hexafluoride (SF₆)' means the substance listed in section 3 of Annex I, or mixtures containing this substance;
 - 1d. 'mixture' means a fluid composed of two or more substances, at least one of which is a fluorinated greenhouse gas;
2. 'global warming potential' ("GWP") means the climatic warming potential of a greenhouse gas relative to that of carbon dioxide ("CO₂"), calculated in terms of the 100-year warming potential of one kilogram of a gas relative to one kilogram of CO₂, as laid down in Annexes I, II [...] and, for mixtures, calculated in accordance with Annex IV;

3. ‘tonne(s) of CO₂ equivalent’ means a quantity of greenhouse gases, [...], expressed as the product of the weight of the greenhouse gases in metric tonnes and their global warming potential;
4. ‘operator’ means the natural or legal person [...] exercising actual power over the technical functioning of [...] products and equipment [...] covered by this Regulation [...]; a Member State may, in defined, specific situations, designate the owner as being responsible for the operator's obligations;
5. ‘use’ means the utilisation [...] of fluorinated greenhouse gases in the production, maintenance or servicing, including the refilling, of products and equipment, or in other processes referred to in this Regulation;
6. ‘placing on the market’ means supplying or making available to another party in the Union for the first time, for payment or free of charge, or using for its own account in the case of a producer, [...] and includes the customs release for free circulation in the Union [...];
7. ‘hermetically sealed equipment’[...] means equipment in which all [...] fluorinated greenhouse gas [...] 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;

7 a. 'container' means a product which is designed primarily for transporting or storing fluorinated greenhouse gases;

8. 'a non-refillable container' means a container [...] which cannot be refilled without being adapted for that purpose or is placed on the market without provision having been made for its return for refilling;

9. 'recovery' means the collection and storage of fluorinated greenhouse gases from products, equipment or containers during maintenance or servicing or prior to the disposal of the products, equipment or containers;

10. 'recycling' means the reuse of a recovered fluorinated greenhouse gas following a basic cleaning process;

11. 'reclamation' means the reprocessing of a recovered fluorinated greenhouse gas in order to meet the equivalent performance of a virgin substance, taking into account its intended use;

12. 'destruction' means the process of permanently transforming or decomposing all or most of a fluorinated greenhouse gas into one or more stable substances that are not fluorinated greenhouse gases;

12a. 'decommissioning' means the final shut-down and removal from operation or usage of a product or piece of equipment containing fluorinated greenhouse gases;

12b. 'repair' means the restoration of damaged or leaking products and equipment containing fluorinated greenhouse gases;

12c. 'installation' means joining two or more pieces of equipment or circuits containing or designed to contain fluorinated greenhouse gases, with a view to assembling a system in the location where it will be operated, including the action by which gas carrying conductors of a system are joined together to complete a circuit irrespective of the need to charge the system after assembly;

12d. ‘maintenance or servicing’ means all activities, excluding recovery and checks for leakage as defined in Articles 1, 3, 4 and 7 of this Regulation respectively, that entail breaking into the circuits containing or designed to contain fluorinated greenhouse gases, in particular supplying the system with fluorinated greenhouse gases, removing one or more pieces of circuit or equipment, reassembling two or more pieces of circuit or equipment, as well as repairing leaks;

12f. ‘virgin substance’ means a substance which has not previously been used;

13. ‘stationary’ means not normally in [...] transit during operation and includes moveable room air-conditioning appliances;

13a. ‘mobile’ means normally in transit during operation;

14. ‘one-component foam’ means a foam composition contained in a single aerosol container in unreacted or partly reacted liquid state and that expands and hardens when it leaves the container;

15. ‘refrigerated truck’ means a motor vehicle with a [...] mass of more than 3.5 tonnes that is designed and constructed primarily to carry goods and that is equipped with a refrigeration unit;

16. ‘refrigerated trailer’ means a vehicle that is designed and constructed to be towed by a truck or a tractor, primarily to carry goods and that is equipped with a refrigeration unit;

16a. ‘technical aerosol’ means an aerosol dispenser used in maintaining, repairing, cleaning, testing, disinsecting and manufacturing products and equipment, installing equipment, and in other applications;

16e. 'leakage detection system' means a calibrated mechanical, electrical or electronic device for detecting leakage of fluorinated greenhouse gases which, on detection, alerts the operator;

16f. 'undertaking' means any natural or legal person who:

(a) produces, uses, recovers, collects, recycles, reclaims, or destroys fluorinated greenhouse gases;

(b) imports or exports fluorinated greenhouse gases or products and equipment that contain such gases;

(c) places fluorinated greenhouse gases or products and equipment that contain such gases on the market;

(d) installs, services, maintains, repairs, checks for leakage or decommissions equipment containing fluorinated greenhouse gases;

(e) is the operator of equipment which contains fluorinated greenhouse gases;

(f) produces, imports, exports, places on the market or destroys gases listed in Annex II;

(g) places on the market products or equipment containing gases listed in Annex II;

16g. 'feedstock' means any fluorinated greenhouse gas, or substance listed in Annex II, that undergoes chemical transformation in a process in which it is entirely converted from its original composition and its emissions are insignificant;

16i. 'commercial use' means used for the storage, display or dispensing of products, for sale to end users, in retail and food services;

16j. 'fire protection equipment' means the equipment and systems utilised in fire prevention or suppression applications, and includes fire extinguishers;

16k. ‘organic rankine cycle’ means a cycle containing condensible fluorinated greenhouse gas converting heat from a heat source into power and thus into electricity;

16l. ‘military equipment’ mean arms, munitions and war material intended for specifically military purposes which are necessary for the protection of the essential interests of the security of Member States;

16m. ‘electrical switchgear’ means switching devices and their combination with associated control, measuring, protective and regulating equipment, and assemblies of such devices and equipment with associated interconnections, accessories, enclosures and supporting structures, intended for use in connection with generation, transmission, distribution and conversion of electric energy.

16n. ‘multipack centralised refrigeration systems’ means systems with a number of compressors operated in parallel, which are connected to one or more common condensers and to a number of cooling devices such as display cases, cabinets, freezers or to chilled store rooms.

16o. ‘primary refrigerant circuit of cascade systems’ means the primary circuit in indirect medium temperature systems where a combination of one or more separate refrigeration circuits are connected in series such that the upper system absorbs the condenser heat from the lower system.

16p. ‘single split air conditioning systems’ means systems for room air conditioning that consist of one outdoor unit and one indoor unit linked by refrigerant piping, needing installation at the site of use.

CHAPTER II

CONTAINMENT

Article 2

Prevention of emissions

1. The intentional release of fluorinated greenhouse gases into the atmosphere shall be prohibited where the release is not technically necessary for the intended use.
2. Operators of equipment that contains fluorinated greenhouse gases shall take precautions to prevent their unintentional release (hereinafter "leakage") and shall take all measures which are technically and economically feasible to minimise leakages of fluorinated greenhouse gases.
3. Where a leakage of those gases is detected, the operators shall ensure that the equipment is repaired without undue delay.

For equipment required to be checked for leakages pursuant to Article 3(1), where a leak in the equipment has been repaired, the operators shall ensure that the equipment is checked by certified natural persons within one month after the repair to verify that the repair has been effective.

4. Natural persons [...] carrying out the [...] tasks referred to in Article 8(1) points (a) to (d), shall be certified in accordance with Article 8 and shall take precautionary measures to prevent leakage of fluorinated greenhouse gases. Undertakings carrying out installation, servicing, maintenance, repair or decommissioning of the equipment listed in the second subparagraph of Article 3(1) points (a) to (d) shall be certified in accordance with Article 8(4) and shall take precautionary measures to prevent leakage of fluorinated greenhouse gases.

[...]

Article 3
Checking for leakage

1. Operators of equipment that contains fluorinated greenhouse gases in quantities of 5 tonnes of CO₂ equivalent or more and not contained in foams shall ensure that the equipment is checked for leakage.[...] Hermetically sealed [...] equipment that contains fluorinated greenhouse gases with a global warming potential in quantities [...] less than 10 tonnes of CO₂ equivalent, shall not be subject to leak checks under this Article, provided such equipment is labelled as hermetically sealed. Electrical switchgear with a tested leakage rate of less than 0.1% per year as set out in the technical specification of the manufacturer and labelled as such, shall not be subject to leak checks under this Article. Electrical switchgear with a tested leakage rate of more than 0.1% per year shall not be subject to leak checks under this Article provided that it is equipped with a pressure or density monitoring device or contains less than 6 kg of fluorinated greenhouse gasses.
[...]

This paragraph applies to operators of the following equipment that contains fluorinated greenhouse gases:

- (a) stationary refrigeration equipment;
- (b) stationary air-conditioning equipment;
- (c) stationary heat pumps;
- (d) stationary fire protection [...] equipment;
- (e) refrigeration units of refrigerated trucks and [...] trailers;
- (f) electrical switchgear
- (g) organic rankine cycles

As regards the equipment referred to in subparagraph 2 points (a) to (e), the checks shall be carried out by natural persons certified in accordance with the rules provided for in Article 8.

By way of derogation, until 31 December 2016, equipment that contains less than 3kg of fluorinated greenhouse gases or hermetically sealed equipment, which is labelled as such and contains less than 6 kg of fluorinated greenhouse gases, shall not be subject to leak checking requirements.

2. The checks pursuant to paragraph 1 shall be carried out with the following frequency:
 - a) equipment that contains fluorinated greenhouse gases in quantities [...] of 5 tonnes of CO₂ equivalent or more, but to less than 50 tonnes of CO₂ equivalent, shall be checked for leakage at least once every 12 months; or where there is a leakage detection system installed, at least every 24 months;
 - b) equipment that contains fluorinated greenhouse gases in quantities [...] of 50 tonnes of CO₂ equivalent or more, but to less than 500 tonnes of CO₂ equivalent, shall be checked for leakage at least once every six months or, where a leakage detection system has been installed, at least every 12 months;
 - c) equipment that contains fluorinated greenhouse gases in quantities [...] of 500 tonnes of CO₂ equivalent or more, shall be checked for leakage at least once every three months or, where a leakage detection system has been installed, at least every six months.
3. Where in respect of fire protection equipment [...] as referred to in paragraph 1(d) there is an existing inspection regime in place that meets ISO 14520 or EN 15004 standards, and the fire protection [...] equipment is inspected as often as required in accordance with paragraph 2, those inspections shall be considered to fulfil the obligations of paragraph 1.

4. The Commission may adopt, in accordance with the examination procedure referred to in Article 21, implementing acts in order to specify requirements for the leakage checks to be carried out in accordance with paragraph 1 of this Article for each type of equipment referred to in that paragraph, to identify those parts of the equipment most likely to leak and to repeal acts adopted pursuant to Article 3(7) of Regulation EC 842/2006.

Article 4

Leakage detection systems

Operators of the equipment listed in the second subparagraph of Article 3(1) points (a) to (d) containing fluorinated greenhouse gases in quantities [...] of 500 tonnes of CO₂ equivalent or more [...], shall ensure that the equipment is provided with a leakage detection system which alerts the operator or a service company of any leakage.

Operators of the equipment listed in the second subparagraph of Article 3(1) points (f) and (g) containing fluorinated greenhouse gases in quantities of 500 tonnes of CO₂ equivalent or more and installed after 1 January 2017, shall ensure that this equipment is provided with a leakage detection system which alerts the operator or a service company of any leakage.

Operators of the equipment listed in the second subparagraph of Article 3(1) points (a) to (d) and (g) shall ensure that leakage detection systems [...] are checked at least once every 12 months to ensure their [...] proper functioning.

Operators of the equipment listed in the second subparagraph of Article 3(1) point (f) shall ensure that leakage detection systems are checked at least once every 6 years to ensure their proper functioning.

[...]

Article 5
Record keeping

1. Operators of equipment required to be checked for leakages pursuant to Article 3(1), shall for each piece of such equipment establish and maintain records [...] specifying the following information [...]:
- (a) the quantity and type of fluorinated greenhouse gases installed;
 - (b) the quantities of fluorinated greenhouse gases added during installation, maintenance and servicing [...] or due to leakage;
 - (ba) whether the quantities of installed fluorinated greenhouse gases have been recycled or reclaimed, including the name and address of the recycling or reclamation facility and, where applicable, the certificate number;
 - (c) the quantity of fluorinated greenhouse gases recovered;
 - (d) [...];
 - (e) the identity [...] of the undertaking [...] which installed, serviced, maintained and where applicable repaired or decommissioned the equipment, including, where applicable, the certification number of its certificate ;
 - (f) the dates and results of the checks carried out under Article 3(1) [...] to (3);
 - (g) if the equipment was decommissioned, the measures taken to recover and dispose of the fluorinated greenhouse gases.

[...]

2. Unless the records referred to in paragraph 1 are registered in a database set up by the competent authorities of the Member States, the operators referred to in paragraph 1 shall keep the records [...] for at least five years.

Unless the records referred to in paragraph 1 are registered in a database set up by the competent authorities of the Member States, [...] undertakings carrying out the activities referred to in paragraph 1(e) for operators shall keep copies of the records for at least five years.

The records shall be made available, on request, to the competent authority or to the Commission. To the extent that the records contain environmental information, Directive 2003/4/EC or Regulation 1367/2006 shall apply as appropriate.

- 2a. For the purpose of Article 9(3a), undertakings supplying fluorinated greenhouse gases shall establish and maintain for at least five years records of relevant information on the purchasers of such gases, including the certification number of their certificate and quantities of fluorinated greenhouse gases purchased.

The records shall be made available, on request, to the competent authority or to the Commission. To the extent that the records contain environmental information, Directive 2003/4/EC or Regulation 1367/2006 shall apply as appropriate.

3. The Commission may determine the format of the records referred to in paragraphs 1 and 2a and specify how they should be established and maintained in an implementing act. That implementing act shall be adopted in accordance with the examination procedure referred to in Article 21.

Article 6

Emissions from production

1. Producers of fluorinated compounds shall take all the precautions necessary to limit emissions of fluorinated greenhouse gases, to the greatest extent possible, during production, transport and storage. This shall also apply where fluorinated greenhouse gases are produced as by-products.
2. Without prejudice to Article 9(1), the placing on the market of fluorinated greenhouse gases and gases listed in Annex II shall be prohibited unless producers or importers provide evidence upon the placing on the market that trifluoromethane (HFC-23), produced as a by-product during the manufacturing process, including during the manufacturing of feedstocks for their production, is destroyed [...] or recovered for subsequent use, in line with best available techniques. This requirement shall apply from one year after the entry into force of this Regulation.

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Article 7

Recovery

1. Operators of stationary equipment [...] that contain fluorinated greenhouse gases not contained in foams and operators of refrigerated trucks and trailers that contain fluorinated greenhouse gases,[...] shall ensure that the[...] recovery of those gases is carried out by natural persons [...] that hold the relevant certificates provided for by Article 8,[...] so that those gases are recycled, reclaimed or destroyed.

This[...] obligation applies to operators of any of the following equipment:

- (a) the cooling circuits of refrigeration, air-conditioning and heat pump equipment;
- (b) equipment that contains fluorinated greenhouse gas-based solvents;
- (c) fire protection [...] equipment;
- (d) electrical switchgear.

[...]

3. The [...] undertaking [...] that used a fluorinated greenhouse gas container immediately prior to its disposal [...] shall arrange for the recovery of any residual gases to make sure they are recycled, reclaimed or destroyed.
4. [...] Operators of products and equipment [...] not listed in paragraph 1, including mobile equipment, that contain fluorinated greenhouse gases shall arrange for the recovery of the gases, to the extent that it is [...] technically feasible and does not entail disproportionate costs, by appropriately qualified natural persons,[...] so that they are recycled, reclaimed or destroyed or shall arrange for their destruction without prior recovery.

The recovery of fluorinated greenhouse gases from air-conditioning equipment in road vehicles outside the scope of Directive 2006/40/EC shall be carried out by appropriately qualified natural persons.

For the recovery of fluorinated greenhouse gases from air-conditioning systems in motor vehicles falling within the scope of Directive 2006/40/EC natural persons holding training attestation shall be considered appropriately qualified.

Article 7a (new)

Without prejudice to existing EU legislation, Member States shall encourage the development of producer responsibility schemes for the recovery of fluorinated greenhouse gases and their recycling, reclamation or destruction. Member States shall provide information to the Commission on the actions undertaken in this regard.

Article 8
Training and certification

1. Member States shall establish or adapt [...] on the basis of the minimum requirements pursuant to paragraph (3a), certification programmes, including evaluation processes and shall ensure that training is available for [...] natural persons carrying out the following tasks:
 - (a) [...] installation, servicing, maintenance, repair or decommissioning of the equipment listed in the [...] second subparagraph of Article 3(1) points (a) to (e);
 - (b) [...] installation, servicing, maintenance, repair or decommissioning of electrical switchgear that contains SF₆;
 - (c) [...] leak checkings as provided for in Article 3(1) points (a) to (e);
 - (d) [...] recovery of fluorinated greenhouse gases as provided for in Article 7(1);
- 1a. Member States shall ensure that training programmes for natural persons recovering fluorinated greenhouse gases from air-conditioning systems in motor vehicles falling within the scope of Directive 2006/40/EC are available, on the basis of the minimum requirements pursuant to paragraph (3a).
2. The [...] certification programmes and training provided for in paragraph 1 shall cover the following [...]:
 - (a) applicable regulations and technical standards;
 - (b) emission prevention;

- (c) recovery of fluorinated greenhouse gases;
 - (d) safe handling of equipment of the type and size covered by the certificate;
 - (e) information on relevant technologies to replace or to reduce the use of fluorinated greenhouse gases and their safe handling.
3. Certificates under the certification programmes provided for in paragraph 1 shall be issued on condition of the applicant having successfully completed [...] an evaluation process established in accordance with paragraphs 1 and 2.
- 3a. Minimum requirements for certification programmes are those laid down in Commission Regulations 303/2008 to 306/2008 and under paragraph 7. Minimum requirements for training attestations are those laid down in Commission Regulation 307/2008 and under paragraph 7. Those minimum requirements shall specify for each type of equipment referred to in paragraphs 1 and 1a the required practical skills and theoretical knowledge, where appropriate, differentiating between different activities to be covered, as well as the conditions for mutual recognition of certificates and training attestations.
4. Member States shall establish or adapt certification programmes on the basis of the minimum requirements pursuant to paragraph (3a) for undertakings carrying out installation, servicing, maintenance, repair or decommissioning of the equipment listed [...] in the second subparagraph of Article 3(1) points (a) to (d) for other parties.
5. [...] Existing certificates and training attestations issued in accordance with Regulation EU 842/2006, shall remain valid, in accordance with the conditions under which they were originally issued.

- 5a. Member States shall ensure that all natural persons holding certificates referred to in paragraph 5 have access to information in relation to technologies referred to paragraph 2, point (e) and existing regulatory requirements for working with equipment containing alternative refrigerants to fluorinated greenhouse gases.
- 5b. Member States shall ensure the availability of training for those natural persons wishing to update their knowledge in relation to the matters referred to in paragraph 2.
6. Member States shall notify the Commission of [...] certification and training programmes by 1 January 2017. They shall recognise certificates and training attestations issued in another Member State in accordance with this Article. They shall not restrict the freedom to provide services or the freedom of establishment because a certificate was issued in another Member State.
- 6a. Any undertaking which assigns a task referred to in Article 8(1) to another undertaking shall take reasonable steps to ascertain the latter holds the necessary certificates pursuant to Article 8 for the required tasks.
7. [...] In the event that it appears necessary, in the application of this Article, to provide for a more harmonised approach to training and certification, the Commission shall adopt implementing acts in accordance with Article 21 to adapt and update the minimum requirements as to the skills and knowledge to be covered, to specify the modalities of the certification or attestation and the conditions for mutual recognition and to repeal acts adopted pursuant to Article 5(1) of Regulation EC 842/2006. When exercising the power conferred on it by this paragraph, the Commission shall take into account relevant existing qualification or certification schemes.

8. The Commission may, by means of implementing acts, determine the format of the notification referred to in paragraph 6 and may repeal acts adopted pursuant to Article 5(5) of Regulation EC 842/2006. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 21.
9. Where the obligations in this Article relating to the provision of certification and training would impose disproportionate burdens on a Member State because of the small size of its population and the consequent lack of demand for such training and certification, compliance may be achieved through the recognition of certificates issued in other Member States.
Member States making use of this provision shall inform the Commission who shall inform other Member States.
10. Nothing in this Article shall prevent Member States from setting up further certification and training systems in respect of equipment other than that referred to in paragraph 1.

CHAPTER III

PLACING ON THE MARKET AND CONTROL OF USE

Article 9

Restrictions on the placing on the market

1. The placing on the market of specific products and equipment listed in Annex III, with an exemption for military equipment, shall be prohibited from the date specified in that Annex, where applicable differentiating according to the type or global warming potential of the fluorinated greenhouse gas contained.

[...]

2. The prohibition set out in paragraph 1 shall not apply to equipment for which it has been established in ecodesign requirements adopted under Directive 2009/125/EC¹⁰ that due to higher energy efficiency during its operation, its lifecycle CO₂ equivalent emissions would be lower than that from equivalent equipment which meets relevant ecodesign requirements and does not contain hydrofluorocarbons.
3. [...] The Commission may, exceptionally, and taking into account the objectives of this Regulation and following a substantiated request by a competent authority of a Member State, by means of implementing acts, authorise a time-limited exemption of up to four years to allow the placing on the market of products and equipment listed in Annex III containing, or whose functioning relies upon, fluorinated greenhouse gases, where it is demonstrated that, for a particular application, technically feasible alternatives are not available, or cannot be used for technical or safety reasons, or where the use of such alternatives would entail disproportionate costs. These implementing acts shall be adopted in accordance with the examination procedure referred to in Article 21.
- 3a. For the purposes of carrying out the activities referred to in Article 8(1) points (a) and (b) fluorinated greenhouse gases shall only be sold to and purchased by undertakings that hold the relevant certificates in accordance with Article 8. This paragraph shall not prevent non-certified natural persons, who do not carry out the activities in Article 8 (1), from collecting, transporting or delivering fluorinated greenhouse gases.

¹⁰ Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products, OJ L 285, 31.10.2009, p. 10.

- 3b. Non-hermetically sealed equipment charged with hydrofluorocarbons placed on the market shall only be sold to the end user where evidence is provided that the installation shall be carried out by an undertaking certified in accordance with Article 8.
- 3ba. The Commission shall collect, on the basis of available data from Member States, information on national codes, standards or legislation of Member States with respect to replacement technologies using alternative refrigerants in refrigeration and air-conditioning equipment and foams. The Commission shall publish a synthesis report by 1 January 2017.

Article 10

Labelling, [...] product and equipment information

1. Products and equipment that contain fluorinated greenhouse gases or whose functioning relies upon fluorinated greenhouse gases shall not be placed on the market unless they are labelled.

This paragraph shall apply to the following types of products and equipment:

- (a) refrigeration equipment;
- (a) air-conditioning equipment;
- (b) heat pumps;
- (c) fire protection equipment [...];
- (d) electrical switchgear;

- (e) aerosol cans that contain fluorinated greenhouse gases, with the exception of metered dose inhalers for the delivery of pharmaceutical ingredients;
- (f) all fluorinated greenhouse gas containers;
- (g) fluorinated greenhouse gas-based solvents;
- (h) organic rankine cycles.

Products and equipment subject to an exemption under the provisions of Article 9(3) shall be labelled as such with an indication that those products and equipment can only be used for the purpose for which an exemption was granted.

2. The label required in accordance with paragraph 1 shall indicate the following:

- (a) Information that the product or equipment contains fluorinated greenhouse gases or that its functioning relies upon such gases;
- (a) The name of the fluorinated greenhouse gases using the accepted industry designation or, if no such designation is available, the chemical name;
- (b) As of 1 January 2017, the quantity of fluorinated greenhouse gases contained in the product or equipment or the quantity for which the equipment is designed, expressed in weight and in CO₂ equivalent and the global warming potential of those gases.

Where the fluorinated greenhouse gases are contained in a hermetically sealed [...] equipment this shall be stated on the label.

Where electrical switchgear has a tested leakage rate of less than 0.1% per year as set out in the technical specification of the manufacturer, this shall be stated on the label.

3. The label shall be clearly readable and indelible and shall be placed adjacent to the service ports for charging or recovering the fluorinated greenhouse gas, or on that part of the product or equipment that contains the fluorinated greenhouse gas.

The label shall be in the official languages of the Member State in which it is to be placed on the market.

4. Foams and pre-blended polyols that contain fluorinated greenhouse gases shall not be placed on the market unless the fluorinated greenhouse gases are identified with a label using the accepted industry designation or, if no such designation is available, the chemical name. The label shall clearly indicate that the foam contains fluorinated greenhouse gases.

In the case of foam boards, this information shall be clearly and indelibly stated on the boards.

- 4a. Reclaimed or recycled fluorinated greenhouse gases must be labelled with an indication that the substance has been reclaimed or recycled and information on the batch number and the name and address of the reclamation or recycling facility.
- 4b. Fluorinated greenhouse gases placed on the market for destruction must be labelled with an indication that the contents of the container may only be destroyed.
- 4c. Fluorinated greenhouse gases placed on the market for direct export must be labelled with an indication that the contents of the container may only be directly exported.
- 4d. Fluorinated greenhouse gases placed on the market for the use in military equipment must be labelled with an indication that the contents of the container may only be used for this purpose.

- 4e. Fluorinated greenhouse gases placed on the market for the etching of semiconductor material and the cleaning of chemicals vapour deposition chambers within the semiconductor manufacturing sector with an indication that the contents of the container may only be used for this purpose.
- 4 f. Fluorinated greenhouse gases placed on the market for feedstock use must be labelled with and indication that the contents of the container may only be used as feedstock.
- 4g. Fluorinated greenhouse gases placed on the market for producing metered dose inhalers for the delivery of pharmaceutical ingredients must be labelled with an indication that the contents of the container may only be used for this purpose.
5. The information referred to in paragraphs 2 and [...] 4 shall be included in instruction manuals for such products and equipment. In the case of products and equipment that contain fluorinated greenhouse gases with a global warming potential of 150 or more this information shall also be included in descriptions used for advertising.
6. The Commission may determine, by means of implementing acts, the format of the labels referred to in paragraphs 1, [...] 3, 4 and 4a-4g and may repeal acts adopted pursuant to Article 7(3) of Regulation 842/2006/EC. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 21.
7. The Commission shall be empowered to adopt delegated acts in accordance with Article 20 amending the labelling requirements set out in paragraphs [...] 3 to 4g [...] where appropriate in view of [...] commercial or technological development.

Article 11
Control of use

1. The use of SF₆ in magnesium die-casting and in the recycling of magnesium die-casting alloys shall be prohibited. As regards installations using a quantity of SF₆ below 850 kg per year, in respect of magnesium die-casting and in the recycling of magnesium die-casting alloys, this prohibition shall only apply from 1 January 2018.
2. The use of SF₆ to fill vehicle tyres shall be prohibited.
3. The use of fluorinated greenhouse gases, [...] with a global warming potential of 2500 or more, to service or maintain refrigeration equipment with a charge size [...] of 40 tonnes of CO₂ equivalent or more, shall be prohibited from 1 January 2020. This provision shall not apply to military equipment or equipment intended for applications designed to cool products to temperatures below - 50°C[...].

Until 1 January 2030, this provision shall not apply to reclaimed fluorinated greenhouse gases with a global warming potential of 2500 or more used for the maintenance or servicing of existing refrigeration equipment, provided that they have been labelled in accordance with Article 10 (4a).

Until 1 January 2030 this provision shall not apply to recycled fluorinated greenhouse gases with a global warming potential of 2500 or more used for the maintenance or servicing of existing refrigeration equipment provided they have been recovered from such equipment. Such recycled gases may only be used by the undertaking which carried out their recovery as part of maintenance or servicing or the undertaking for which the recovery was carried out as part of maintenance or servicing.

This provision shall not apply to refrigeration equipment for which an exemption has been authorised pursuant to Article 9 (3).

[...]

Article 12
Pre-charging of equipment

[...]

1. From 1 January 2017 refrigeration, air conditioning and heat pump equipment charged with hydrofluorocarbons shall not be placed on the market unless hydrofluorocarbons charged into this equipment are accounted for within the quota system referred to in Chapter IV.

2. When placing pre-charged equipment on the market, manufacturers and importers of equipment shall ensure that compliance with paragraph 1 is fully documented and shall draw up a declaration of conformity in this respect. Where hydrofluorocarbons contained in the equipment have not been placed on the EU market prior to the charging of the equipment, importers of equipment shall as of 2018 ensure that the accuracy of the documentation and declaration of conformity shall be verified every year by 31 March, for the preceding calendar year, by an independent auditor, accredited pursuant to Directive 2003/87/EC or accredited to verify financial statements in accordance with the legislation of the Member State concerned.

Manufacturers and importers of equipment shall keep the documentation and declaration of conformity for a period of at least 5 years after the placing on the market of the equipment.
Importers of equipment placing on the market pre-charged equipment where hydrofluorocarbons contained in this equipment have not been placed on the EU market prior to the charging of the equipment shall ensure they are registered pursuant to Article 15 (1) e).

3. By drawing up the declaration of conformity, manufacturers and importers of equipment shall assume responsibility for compliance with paragraphs 1 and 2 of this Article.

4. The Commission shall, by means of implementing acts, determine the modalities relating to the declaration of conformity and the verification by the independent auditor referred to in the first subparagraph of paragraph 2. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 21.

CHAPTER IV

REDUCTION OF THE PLACING ON THE MARKET OF HYDROFLUOROCARBONS

Article 13

Reduction of the placing on the market of hydrofluorocarbons

1. The Commission shall ensure that the quantity of hydrofluorocarbons that producers and importers are entitled to place on the market in the Union each year does not exceed the maximum quantity for the year in question calculated in accordance with Annex V. Each producer and importer shall ensure that the quantity of hydrofluorocarbons calculated in accordance with Annex V that it places on the market does not exceed the quota allocated to it pursuant to Article 14(5) or transferred to it pursuant to Article 16.

It shall not apply to producers or importers of less than 100 tonnes of CO₂ equivalent of hydrofluorocarbons per year.

2. This Article shall not apply to [...] the following:
 - a) hydrofluorocarbons imported into the Union for destruction;
 - b) hydrofluorocarbons supplied directly by a producer or an importer to undertakings for use in feedstock applications;
 - c) hydrofluorocarbons supplied directly by a producer or an importer to undertakings, for export out of the Union, where those hydrofluorocarbons are not subsequently made available to any other party within the Union, prior to export;
 - d) hydrofluorocarbons supplied directly by a producer or an importer for use in military equipment.
 - e) hydrofluorocarbons supplied directly by a producer or an importer to an undertaking using it for the etching of semiconductor material and the cleaning of chemicals vapour deposition chambers within the semiconductor manufacturing sector.
 - f) from 2018 onwards, hydrofluorocarbons supplied directly by a producer or importer to an undertaking producing metered dose inhalers for the delivery of pharmaceutical ingredients.

3. This Article and Articles 14, 16, 17 and 22 shall also apply to hydrofluorocarbons contained in polyol blends.
4. [...] The Commission may, exceptionally, taking into account the objectives of this Regulation and, following a substantiated request by a competent authority of a Member State, by means of implementing acts authorise a time-limited exemption of up to four years to exclude from the quota requirement laid down in paragraph 1 hydrofluorocarbons for use in specific applications, or specific categories of products or equipment, where it is demonstrated that, for those particular applications, products or equipment technically feasible alternatives are not available, or cannot be used for technical or safety reasons, or where a sufficient supply of hydrofluorocarbons cannot be ensured without entailing disproportionate costs.
These implementing acts shall be adopted in accordance with the examination procedure referred to in Article 21.

Article 14

Allocation of quotas for placing hydrofluorocarbons on the market

1. By 31 October 2014 the Commission shall determine, by means of implementing [...] acts, for each producer or importer having reported data under Article 6 of Regulation (EC) No 842/2006 a reference value based on the annual average of the quantities of hydrofluorocarbons the producer or importer reported to have placed on the market from 2009 to 2012. [...] The reference values shall be calculated in accordance with Annex V to this Regulation.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 21.
2. Producers and importers that have not reported [...] placing on the market under Article 6 of Regulation (EC) No 842/2006 for the reference period referred to in paragraph 1 may declare their intention to [...] place hydrofluorocarbons on the market in the following year.

3. By 31 October 2017 and every three years after that, the Commission shall recalculate the reference values for the producers and importers referred to in paragraphs 1 and 2 on the basis of the annual average of the quantities of hydrofluorocarbons[...] lawfully placed on the market after 1 January 2015 as reported under Article 17 for the years available. It shall determine those reference values by means of implementing acts.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 21.

4. Producers and importers for which reference values have been determined may declare additional anticipated quantities following the procedure set out in paragraph 2.

5. The Commission shall allocate quotas for placing hydrofluorocarbons on the market for each producer and importer for each year beginning with the year 2015 applying the allocation mechanism laid down in Annex VI.

Quota shall only be allocated to producers or importers which are established within the Union, or which have mandated an only representative established within the Union for the purpose of compliance with the requirements of this Regulation. The only representative may be the same as the one mandated pursuant to Article 8 of Regulation (EC) No 1907/2006 (REACH).

The only representative shall comply with all obligations of producers and importers under this Regulation.

[...]

Article 15

[...] Registry

1. The Commission shall by 1 January 2015 set up and ensure the operation of an electronic registry for quotas for placing hydrofluorocarbons on the market.[...]

[...] Registration in the electronic registry shall be compulsory for the following:

- (a) producers and importers to which a quota for the placing on the market has been allocated in accordance with Article 14(5);
- (b) undertakings to which a quota is transferred in accordance with Article 16;
- (c) producers and importers declaring their intention to submit a declaration pursuant to Article 14(2);
- (d) producers and importers supplying, or undertakings in receipt of hydrofluorocarbons for the purposes listed in Article 13 (2) points (a) to (g).
- (e) importers of equipment placing pre-charged equipment on the market where the hydrofluorocarbons contained in the equipment have not been placed on the EU market prior to the charging of this equipment in accordance with Article 12.

Registration shall be effected by means of application to the Commission in accordance with procedures to be set out by the Commission.

1a. The Commission may adopt implementing acts, to the extent necessary, to ensure the smooth functioning of the Registry. Those implementing acts shall be adopted in accordance with the examination procedure in Article 21.

2. The Commission shall ensure that registered producers and importers [...] are informed via this registry about the quota allocated and about any changes to it during the allocation period.
3. The competent authorities, including customs authorities, of the Member States shall have access for information purposes to the registry.

Article 16

Transfer of quotas and authorisation to use quotas for the placing on the market of hydrofluorocarbons in imported equipment

1. Any producer or importer for whom a reference value has been determined pursuant to Article 14(1) or (3) and who has been allocated a quota in accordance with Article 14(5), may transfer in the registry referred to in Article 15(1) that quota for all or any quantities to another [...] producer or importer in the Union [...] or to another producer or importer which is represented by an only representative referred to in Article 14(5).
2. Any producer or importer having received its quota pursuant to Article 14 (1) and (3) or to whom quota has been transferred pursuant to paragraph 1 may authorise another undertaking to use its quota for the purpose of Article 12.

Any producer or importers having received its quota exclusively on the basis of a declaration pursuant to Article 14(2), may only authorise another undertaking to use its quota for the purpose of Article 12 provided that the corresponding quantities of hydrofluorocarbons are physically supplied by the authorising producer or importer.

For the purpose of Articles 13, 14 and 17 (1), (2) and (4) the respective quantities of hydrofluorocarbons shall be deemed to be placed on the market by the authorising producer or importer at the moment of the authorisation. The Commission may require from the authorising producer or importer evidence that it is active in the supply of hydrofluorocarbons.

CHAPTER V

REPORTING

Article 17

Reporting on production, import, export, feedstock use and destruction

1. By 31 March [...] 2015 and every year after that, each producer, importer and exporter that produced, imported or exported more than one metric tonne or 100 tonnes of CO₂ equivalent of fluorinated greenhouse gases and gases listed in Annex II during the preceding calendar year shall report to the Commission the data specified in Annex VII on each of those substances for that calendar year. This provision shall also apply to undertakings receiving quota pursuant to Article 16(1).
2. By 31 March 2015 and every year after that, each undertaking that destroyed more than one metric tonne or 1 000 tonnes of CO₂ equivalent of fluorinated greenhouse gases and gases listed in Annex II during the preceding calendar year shall report to the Commission the data specified in Annex VII on each of those substances for that calendar year.
- 2a. By 31 March 2015 and every year thereafter, each undertaking that used more than 1000 tonnes of CO₂ equivalent fluorinated greenhouse gases as feedstock during the preceding calendar year shall report to the Commission the data specified in Annex VII on each of those substances for that calendar year.
3. By 31 March 2015 and every year after that, each undertaking [...] that placed more than [...] 500 tonnes of CO₂ equivalent of fluorinated greenhouse gases and gases listed in Annex II contained in products or equipment on the market during the preceding calendar year shall report to the Commission the data specified in Annex VII on each of those substances for that calendar year.

- 3a. Each importer of equipment that place on the market pre-charged equipment where hydrofluorocarbons contained in this equipment have not been placed on the EU market prior to the charging of the equipment shall submit to the Commission a verification document issued pursuant to Article 12 (2).
4. Each undertaking which, under paragraph 1 [...], is to report on the placing on the market of more than 10 000 tonnes of CO₂ equivalent of hydrofluorocarbons during the preceding calendar year shall, by 30 June 2015 and every year after [...], ensure that the accuracy of the data is verified by an independent auditor, accredited pursuant to Directive 2003/87/EC¹¹ or accredited to verify financial statements in accordance with the legislation of the Member State concerned.
- The undertaking shall keep the verification report for at least five years. The verification report shall be made available to the competent authority and the Commission on request.
5. [...]
6. The Commission may determine, by means of implementing acts, the format and means of submitting the reports referred to in this Article.
- Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 21.
7. The Commission shall take appropriate measures to protect the confidentiality of the information submitted to it in accordance with this Article.

¹¹ Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community, OJ L 275, 25.10.2003, p. 32.

Article 18
Collection of emissions data

[...]

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.

CHAPTER VI

FINAL PROVISIONS

Article 19

Review

1. [...]
2. The Commission shall be empowered to adopt delegated acts in accordance with Article 20 updating Annexes I, II and IV on the basis of new [...] IPCC Assessment Reports [...] and/or new reports of the Montreal Protocol Scientific Assessment Panel (SAP) on the global warming potential of the listed substances.
3. On the basis of information on the placing on the market reported in accordance with Article 17 and on emissions of fluorinated greenhouse gases made available in accordance with Article 18[...] and on the basis of any relevant information received from Member States, the Commission shall monitor the application and effects of this Regulation.

No later than 31 December 2020, the Commission shall publish a report on the availability of hydrofluorocarbons on the Union market.

No later than 31 December 2022, it shall publish a comprehensive report on the effects of this Regulation, including in particular:

- a) a forecast of the continued demand for hydrofluorocarbons up to and beyond 2030;
- b) an assessment of the need for further action by the Union and its Member States in light of existing and new international commitments regarding the reduction of greenhouse gas emissions;
- c) an overview of European and international standards, national safety legislation and building codes in Member States in relation to the transition to alternative refrigerants;
- d) a review of the availability of technically feasible and cost-effective alternatives to products and equipment containing fluorinated greenhouse gases for products and equipment not listed in Annex III, taking into account energy-efficiency.

- 3a. No later than 1 July 2017, the Commission shall publish a report assessing the prohibition pursuant to Annex III, point 11b, considering in particular, the availability of cost effective, technically feasible, energy efficient and reliable alternatives to multipack centralised refrigeration systems referred to in that provision. In light of that report, the Commission shall submit, if appropriate, a legislative proposal to the European Parliament and to the Council with a view to amending the provision pursuant to Annex III, point 11b.
- 3b. No later than 1 July 2020, the Commission shall publish a report assessing whether cost effective, technically feasible, energy efficient and reliable alternatives exist, which make the replacement of fluorinated greenhouse gases possible in new medium-voltage secondary switchgear and new small single split air-conditioning systems and shall submit, if appropriate, a legislative proposal to the European Parliament and to the Council to amend the list set out in Annex III.

- 3c. No later than 1 July 2017, the Commission shall publish a report assessing the quota allocation method, including the impact of allocating quota for free without charge, and the costs of implementing this Regulation in Member States and of a possible international agreement on hydrofluorocarbons, if applicable. In light of that report the Commission shall submit, if appropriate, a legislative proposal to the European Parliament and to the Council with a view to:
- a) amending the quota allocation method;
- b) establishing an appropriate method of distributing any possible revenues.
- 3d. No later than 1 January 2017, the Commission shall publish a report examining EU legislation with respect to the training of natural persons for the safe handling of alternative refrigerants to replace or reduce the use of fluorinated greenhouse gases and shall submit, if appropriate, a legislative proposal to the European Parliament and to the Council to amend relevant EU legislation.

Article 20

Exercise of the delegation

1. The power to adopt delegated acts is conferred on the Commission subject to the conditions laid down in this Article.
2. The power to adopt delegated acts referred to in Articles [...] 10(7), [...] and 19[...] (2) shall be conferred on the Commission for [...] period of 5 years from [...] [dd/mm/yyyy] [*insert date of entry into force of this regulation*]. By [dd/mm/yyyy], the Commission shall draw up a report in respect of the delegation of power. The delegation of power shall be tacitly extended for further periods of 5 years, unless the European Parliament or the Council opposes such extension not later than 3 months before the end of each such period.

3. The power to adopt delegated acts referred to in Articles [...] 10(7), [...] and 19[...] (2) may be revoked at any time by the European Parliament or by the Council. A decision of revocation shall put an end to the delegation of the power specified in that decision. It shall take effect the day following the publication of the decision in the Official Journal of the European Union or on a later date specified therein. It shall not affect the validity of any delegated acts already in force.
4. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.
5. A delegated act adopted pursuant to Articles [...] 10(7), and 19[...] (2) shall enter into force only if no objection has been expressed either by the European Parliament or the Council within a period of two months of notification of that act to the European Parliament and the Council or if, before the expiry of that period, the European Parliament and the Council have both informed the Commission that they will not object. That period shall be extended by two months at the initiative of the European Parliament or of the Council.

Article 20 a
Consultation Forum

In implementing this Regulation, the Commission shall ensure a balanced participation of Member States' representatives and representatives of civil society, including environmental organisations, representatives of manufacturers, operators and certified persons. To that end, it shall establish a Consultation Forum for those parties to meet and provide advice and expertise to the Commission in relation to the implementation of this Regulation, in particular with regard to the availability of alternatives to fluorinated greenhouse gases, including the environmental, technical, economic and safety aspects of their use. The rules of procedure of the Consultation Forum shall be established by the Commission and shall be published.

Article 21
Committee procedure

1. The Commission shall be assisted by a committee. That committee shall be a committee within the meaning of Regulation (EU) No 182/2011.
2. Where reference is made to this paragraph, Article 5 of Regulation (EU) No 182/2011 shall apply. Where the committee delivers no opinion, the Commission shall not adopt the draft implementing act and the third sub-paragraph of Article 5(4) of Regulation 182/2011 shall apply.

Article 22
Penalties

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

Member States shall notify those provisions to the Commission by 1 January 2017 at the latest and shall notify it without delay of any subsequent amendment affecting them.

2. In addition to the penalties referred to in paragraph 1, undertakings that have exceeded their quota for placing hydrofluorocarbons on the market, allocated in accordance with Article 14(5) or transferred to them in accordance with Article 16, may only be allocated a reduced quota allocation for the allocation period after the excess has been detected.

The amount of reduction shall be calculated as 200 % of the amount by which the quota was exceeded. If the amount of the reduction is higher than the amount to be allocated in accordance with Article 14(5) as a quota for the allocation period after the excess has been detected, no quota shall be allocated for that allocation period and the quota for the following allocation periods shall be reduced likewise until the full amount has been deducted.

Article 23

Repeal

Regulation (EC) No 842/2006 shall be repealed with effect from 1 January 2015, without prejudice to compliance with the requirements of that Regulation in accordance with the timetable set out therein.

However, Commission Regulations 1493/2007, 1494/2007, 1497/2007, 1516/2007, 303/2008, 304/2008, 305/2008, 306/2008, 307/2008 and 308/2008 shall remain in force and continue to apply unless and until repealed by Commission delegated or implementing acts adopted pursuant to this Regulation.

References to [...] Regulation 842/2006 shall be construed as references to this Regulation and shall be read in accordance with the correlation table in Annex VIII.

Article 24

Entry into force and date of application

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

It shall apply from 1 January 2015

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

Done at Brussels,

For the European Parliament

The President

For the Council

The President

ANNEX I

Fluorinated greenhouse gases referred to in Article 1 point (1)

Substance			Global warming potential ¹²
Industrial designation	Chemical name (Common name)	Chemical formula	
Section 1: Hydrofluorocarbons (HFCs)			
HFC-23	trifluoromethane (fluoroform)	CHF ₃	14800
HFC-32	difluoromethane	CH ₂ F ₂	675
HFC-41	fluoromethane (methyl fluoride)	CH ₃ F	92
HFC-125	pentafluoroethane	CHF ₂ CF ₃	3 500
HFC-134	1,1,2,2-tetrafluoroethane	CHF ₂ CHF ₂	1 100
HFC-134a	1,1,1,2-tetrafluoroethane	CH ₂ FCF ₃	1 430
HFC-143	1,1,2-trifluoroethane	CH ₂ FCHF ₂	353
HFC-143a	1,1,1-trifluoroethane	CH ₃ CF ₃	4 470
HFC-152	1,2-difluoroethane	CH ₂ FCH ₂ F	53
HFC-152a	1,1,2-difluoroethane	CH ₃ CHF ₂	124
HFC-161	fluoroethane (ethyl fluoride)	CH ₃ CH ₂ F	12
HFC-227ea	1,1,1,2,3,3,3-heptafluoropropane	CF ₃ CHFCF ₃	3 220
HFC-236cb	1,1,1,2,2,3-hexafluoropropane	CH ₂ FCF ₂ CF ₃	1 340
HFC-236ea	1,1,1,2,3,3-hexafluoropropane	CHF ₂ CHFCF ₃	1 370
HFC-236fa	1,1,1,3,3,3-hexafluoropropane	CF ₃ CH ₂ CF ₃	9 810

¹² Based on the Fourth Assessment Report adopted by the Intergovernmental Panel on Climate Change, unless otherwise indicated.

HFC-245ca	1,1,2,2,3- pentafluoropropane	CH ₂ FCF ₂ CHF ₂	693
HFC-245fa	1,1,1,3,3- pentafluoropropane	CHF ₂ CH ₂ CF ₃	1030
HFC-365 mfc	1,1,1,3,3- pentafluorobutane	CF ₃ CH ₂ CF ₂ CH ₃	794
HFC-43-10mee	1,1,1,2,2,3,4,5,5,5- decafluoropentane	CF ₃ CHFCHF ₂ CF ₃	1 640
Section 2: Perfluorocarbons (PFCs)			
PFC-14	perfluoromethane (carbon tetrafluoride)	CF ₄	7 390
PFC-116	hexafluoroethane (perfluoroethane)	C ₂ F ₆	12 200
PFC-218	octafluoropropane (perfluoropropane)	C ₃ F ₈	8 830
PFC-3-1-10 (R-31-10)	decafluorobutane (perfluorobutane)	C ₄ F ₁₀	8 860
PFC-4-1-12 (R-41-12)	dodecafluoropentane (perfluoropentane)	C ₅ F ₁₂	9 160
PFC-5-1-14 (R-51-14)	tetradecafluorohexane (perfluorohexane)	C ₆ F ₁₄	9 300
PFC-c-318	octafluorocyclobutane (perfluorocyclobutane)	c-C ₄ F ₈	10 300
Section 3: Other perfluorinated compounds			
	sulphur hexafluoride	SF ₆	22 800

ANNEX II

Other fluorinated gases subject to reporting in accordance with Article 17

Substance		Global warming potential ¹³
Common name / industrial designation	Chemical formula	
Section 1: <i>Unsaturated hydro(chloro)fluorocarbons</i>		
HFC-1234yf	CF ₃ CF=CH ₂	4 ^{Fn 14}
HFC-1234ze	trans — CHF=CHCF ₃	7 ^{Fn 48}
<u>HFC-1336mzz</u>	<u>CF₃CH=CHCF₃</u>	<u>9</u>
<u>HCFC-1233zd</u>	<u>C₃H₂ClF₃</u>	<u>4.5</u>
<u>HCFC-1233xf</u>	<u>C₃H₂ClF₃</u>	not yet available
Section 2: <i>Fluorinated ethers and alcohols</i>		
HFE-125	CHF ₂ OCF ₃	14 900
HFE-134	CHF ₂ OCHF ₂	6 320
HFE-143a	CH ₃ OCF ₃	756
HCFE-235da2	CHF ₂ OCHClCF ₃	350
HFE-245cb2	CH ₃ OCF ₂ CF ₃	708
HFE-245fa2	CHF ₂ OCH ₂ CF ₃	659
HFE-254cb2	CH ₃ OCF ₂ CHF ₂	359
HFE-347mcc3	CH ₃ OCF ₂ CF ₂ CF ₃	575
HFE-347pcf2	CHF ₂ CF ₂ OCH ₂ CF ₃	580
HFE-356pcc3	CH ₃ OCF ₂ CF ₂ CHF ₂	110
HFE-449sl (HFE-7100)	C ₄ F ₉ OCH ₃	297
HFE-569sf2 (HFE-7200)	C ₄ F ₉ OC ₂ H ₅	59

¹³ Based on the Fourth Assessment Report adopted by the Intergovernmental Panel on Climate Change, unless otherwise indicated.

¹⁴ GWP according to the Report of the 2010 Assessment of the Montreal Protocol Scientific Assessment Panel (SAP), Tables 1-11, citing two peer-reviewed scientific references. http://ozone.unep.org/Assessment_Panels/SAP/Scientific_Assessment_2010/index.shtml.

HFE-43-10pccc124 (H-Galden 1040x)	$\text{CHF}_2\text{OCF}_2\text{OC}_2\text{F}_4\text{OCHF}_2$	1 870
HFE-236ca12 (HG-10)	$\text{CHF}_2\text{OCF}_2\text{OCHF}_2$	2 800
HFE-338pcc13 (HG-01)	$\text{CHF}_2\text{OCF}_2\text{CF}_2\text{OCHF}_2$	1 500
	$(\text{CF}_3)_2\text{CFOCH}_3$	343
	$\text{CF}_3\text{CF}_2\text{CH}_2\text{OH}$	42
	$(\text{CF}_3)_2\text{CHOH}$	195
HFE-227ea	$\text{CF}_3\text{CHFOCF}_3$	1 540
HFE-236ea2	$\text{CHF}_2\text{OCHF}_2\text{CF}_3$	989
HFE-236fa	$\text{CF}_3\text{CH}_2\text{OCF}_3$	487
HFE-245fa1	$\text{CHF}_2\text{CH}_2\text{OCF}_3$	286
HFE 263fb2	$\text{CF}_3\text{CH}_2\text{OCH}_3$	11
HFE-329mcc2	$\text{CHF}_2\text{CF}_2\text{OCF}_2\text{CF}_3$	919
HFE-338mcf2	$\text{CF}_3\text{CH}_2\text{OCF}_2\text{CF}_3$	552
HFE-347mcf2	$\text{CHF}_2\text{CH}_2\text{OCF}_2\text{CF}_3$	374
HFE-356mcc3	$\text{CH}_3\text{OCF}_2\text{CHF}_2\text{CF}_3$	101
HFE-356pcf2	$\text{CHF}_2\text{CH}_2\text{OCF}_2\text{CHF}_2$	265
HFE-356pcf3	$\text{CHF}_2\text{OCH}_2\text{CF}_2\text{CHF}_2$	502
HFE 365mcf3	$\text{CF}_3\text{CF}_2\text{CH}_2\text{OCH}_3$	11
HFE-374pc2	$\text{CHF}_2\text{CF}_2\text{OCH}_2\text{CH}_3$	557
	$-(\text{CF}_2)_4\text{CH}(\text{OH})-$	73
	$(\text{CF}_3)_2\text{CHOCHF}_2$	380
	$(\text{CF}_3)_2\text{CHOCH}_3$	27
Section 3: Other perfluorinated compounds		
PFPMIE	$\text{CF}_3\text{OCF}(\text{CF}_3)\text{CF}_2\text{OCF}_2\text{OCF}_3$	10 300
nitrogen trifluoride	NF_3	17 200

trifluoromethyl sulphur pentafluoride	SF ₅ CF ₃	17 700
perfluorocyclopropane	c-C ₃ F ₆	17 340 ^{Fn 15}

¹⁵ Minimum value according to UNFCCC Forward Action Request.

ANNEX III

Placing on the market prohibitions referred to in Article 9(1)

Products and equipment	Date of prohibition	
Where relevant, the global warming potential (GWP) of mixtures containing fluorinated greenhouse gases shall be calculated in accordance with Annex IV, as provided for in Article [...]1(6) [...]		
1. Non-refillable containers for fluorinated greenhouse gases used to service, maintain or fill refrigeration, air-conditioning or heat-pump equipment, fire protection systems or switchgear, or for use as solvents	4 July 2007	
2. Non-confined direct evaporation systems that contain HFCs and PFCs as refrigerants	4 July 2007	
3. Fire protection [...] equipment [...]	that contain PFCs	4 July 2007
	that contain HFC-23	1 January 2016
4. Windows for domestic use that contain fluorinated greenhouse gases	4 July 2007	
5. Other windows that contain fluorinated greenhouse gases	4 July 2008	
6. Footwear that contains fluorinated greenhouse gases	4 July 2006	
7. Tyres that contain fluorinated greenhouse gases	4 July 2007	
8. One-component foams, except when required to meet national safety standards, that contain fluorinated greenhouse gases with GWP of 150 or more	4 July 2008	

9. Aerosol generators marketed and intended for sale to the general public for entertainment and decorative purposes, as listed in point 40 of Annex XVII to Regulation (EC) No 1907/2006 ¹⁶ , and signal horns that contain HFCs with GWP of 150 or more		4 July 2009
10. Domestic refrigerators and freezers that contain HFCs [...] with GWP of 150 or more		1 January 2015
11. Refrigerators and freezers [...] for commercial use (hermetically sealed systems)	that contain HFCs with GWP of 2500 or more	1 January 2020
	that contain HFCs with GWP of 150 or more	1 January 2022
11a. <u>Stationary refrigeration equipment, that contains, or that relies upon for its functioning HFCs with GWP of 2500 or more except equipment intended for application designed to cool products to temperatures below -50°C</u>		<u>1 January 2020</u>
11b. <u>Multipack centralised refrigeration systems for commercial use with a capacity of 40kW or more that contain, or that rely upon for their functioning, fluorinated greenhouse gases with GWP of 150 or more, except in the primary refrigerant circuit of cascade systems where fluorinated greenhouse gases with a GWP of less than 1500 may be used</u>		<u>1 January 2022</u>
12. Movable room air-conditioning appliances (hermetically sealed equipment which is movable between rooms by the end user) that contain HFCs with GWP of 150 or more		1 January 2020
12a. <u>Single split air-conditioning systems containing less than 3kg of fluorinated greenhouse gases, that contain, or that rely upon for their functioning, fluorinated greenhouse gases with GWP of 750 or more</u>		<u>1 January 2025</u>

¹⁶ Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), OJ L 396, 30.12.2006, p. 1.

<u>12b. Foams that contain HFCs with GWP of 150 or more except when required to meet national safety standards</u>	<u>Extruded polystyrene (XPS)</u>	<u>1 January 2020</u>
	<u>Other foams</u>	<u>1 January 2023</u>
<u>12c. Technical aerosols that contain HFCs with GWP of 150 or more, except when required to meet national safety standards or when used for medical applications</u>		<u>1 January 2018</u>

ANNEX IV

Method of calculating the total global warming potential of a mixture [...]

The total global warming potential (GWP) of a mixture [...] is calculated as a weighted average, derived from the sum of the weight fractions of the individual substances multiplied by their GWP, unless otherwise specified, including substances that are not fluorinated greenhouse gases.

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

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

For example: applying the formula to a blend of gases consisting of 60 % dimethyl ether, 10 % HFC-152a and 30 % isobutane:

$$\Sigma (60\% \times 1) + (10\% \times 124) + (30\% \times \underline{\quad\quad\quad}3)$$

$$\rightarrow \text{Total GWP} = \underline{13,9 \quad \dots}$$

The GWP of the following non-fluorinated substances are used to calculate the GWP of mixtures. For other substances not listed in this annex a default value of 0 applies.

Substance			Global warming potential ¹⁷
Common name	Industrial designation	Chemical Formula	
Methane		CH ₄	25
Nitrous oxide		N ₂ O	298
Dimethyl ether		CH ₃ OCH ₃	1
Methylene chloride		CH ₂ Cl ₂	9
Methyl chloride		CH ₃ Cl	13
Chloroform		CHCl ₃	31
Ethane	R-170	CH ₃ CH ₃	6
Propane	R-290	CH ₃ CH ₂ CH ₃	3
Butane	R-600	CH ₃ CH ₂ CH ₂ CH ₃	4
Isobutane	R-600a	CH(CH ₃) ₂ CH ₃	3
Pentane	R-601	CH ₃ CH ₂ CH ₂ CH ₂ CH ₃	20
Isopentane	R-601a	(CH ₃) ₂ CHCH ₂ CH ₃	4
Ethoxyethane (Diethyl ether)	R-610	CH ₃ CH ₂ OCH ₂ CH ₃	4
Methyl formate	R-611	HCOOCH ₃	25
Hydrogen	R-702	H ₂	6
Ammonia	R-717	NH ₃	0
Ethylene	R-1150	C ₂ H ₄	4
Propylene	R-1270	C ₃ H ₆	2
<u>Cyclopentane</u>		<u>C₅H₁₀</u>	<u>11</u>

¹⁷ Based on the Fourth Assessment Report adopted by the Intergovernmental Panel on Climate Change, unless otherwise indicated.

ANNEX V

Calculation of the maximum quantity, reference values and quotas for placing hydrofluorocarbons on the market

The maximum quantity referred to in Article 13(1) shall be calculated by applying the following percentages to the annual average of the total quantity [...]placed on the market into the Union during the period from 2009 to 2012. From 2018 onwards, the maximum quantity referred to in Article 13(1) shall be calculated by applying the following percentages to the annual average of the total quantity placed on the market into the Union during period 2009 to 2012, and subsequently subtracting the amounts for exempted uses according to Article 13(2), on the basis of available data.

Years	
2015	100 %
2016–17	93 %
2018–20	63 %
2021–23	45 %
2024–26	31 %
2027–29	24 %
2030	21 %

The maximum quantity, reference values and quotas for placing hydrofluorocarbons on the market referred to in Articles 13 and 14 shall be calculated as the aggregated quantities of all types of hydrofluorocarbons, expressed in tonne(s) of CO₂ equivalent.

The calculation of reference values and quotas for placing hydrofluorocarbons on the market referred to in Articles 13 and 14 shall be based on the quantities of hydrofluorocarbons producers and importers have placed on the market in the Union during an allocation period but excluding [...] hydrofluorocarbons imported or supplied into the Union for the usage referred to in Article 13 (2) during the same allocation period, on the basis of available data.

Transactions referred to in Article 13(2) (c) shall be verified in accordance with Article 17(4) regardless of the quantities involved.

[...]

ANNEX VI

Allocation mechanism referred to in Article 14

1. Determination of the quantity to be allocated to undertakings for which a reference value has been established under Article 14(1) and (3)

Each undertaking for which a reference value has been established receives a quota corresponding to 89% of the reference value multiplied by the percentage indicated in Annex V for the respective year.

2. Determination of the quantity to be allocated to undertakings that have submitted a declaration under Article 14(2)

The sum of the quotas allocated under point 1 is subtracted from the maximum quantity for the given year set out in Annex V to determine the quantity to be allocated to undertakings for which no reference value has been established and which have submitted a declaration under Article 14(3) (quantity to be allocated in step 1 of the calculation).

2.1. **Step 1** of the calculation

Each undertaking receives an allocation corresponding to the quantity requested in its declaration, but no more than a pro-rata share of the quantity to be allocated in step 1.

The pro-rata share is calculated by dividing 100 by the number of undertakings that have submitted a declaration. The sum of the quotas allocated in step 1 is subtracted from the quantity to be allocated in step 1 to determine the quantity to be allocated in step 2.

2.2. **Step 2** of the calculation

Each undertaking that has not obtained 100 % of the quantity requested in its declaration in step 1 receives an additional allocation corresponding to the difference between the quantity requested and the quantity obtained in step 1. However, this must not exceed the pro-rata share of the quantity to be allocated in step 2.

The pro-rata share is calculated by dividing 100 by the number of undertakings eligible for an allocation in step 2. The sum of the quotas allocated in step 2 is subtracted from the quantity to be allocated in step 2 to determine the quantity to be allocated in step 3.

2.3. **Step 3** of the calculation

Step 2 is repeated until all requests are satisfied or the remaining quantity to be allocated in the next phase is less than 500 tonnes of CO₂ equivalent.

3. Determination of the quantity to be allocated to undertakings that have submitted a declaration under Article [...] 14(4)For the allocation of quota for 2015 to 2017 the sum of the quotas allocated under points 1 and 2 is subtracted from the maximum quantity for the given year set out in Annex V to determine the quantity to be allocated to undertakings for which a reference value has been established and that have submitted a declaration under Article 14(4).

The allocation mechanism set out under points 2.1 and 2.2 applies.

For the allocation of quotas for 2018 and every year after that, undertakings have submitted a declaration under Article 14(4) shall be treated in the same way as undertakings that have submitted a declaration under Article 14(2).

ANNEX VII

Data to be reported pursuant to Article 17

1. Each producer referred to in Article 17(1) shall report on:
 - (a) the total quantity of each substance it has produced in the Union, identifying the main categories of application in which the substance is used;
 - (b) the quantities of each substance it has placed on the market in the Union, specifying separately quantities placed on the market for feedstock uses, direct exports, producing metered dose inhalers for the delivery of pharmaceutical ingredients, use in military equipment and use in the etching of semiconductor material and the cleaning of chemical vapour deposition chambers.
 - (c) any authorisation to use quota, specifying relevant quantities, for the purpose of Article 12.

2. Each importer referred to in Article 17(1) shall report on:
 - a) the quantity of each substance it has imported into the Union, identifying the main categories of application in which the substance is used, specifying separately quantities placed on the market for destruction, feedstock uses, direct exports, producing metered dose inhalers for the delivery of pharmaceutical ingredients, use in military equipment and use in the etching of semiconductor material and the cleaning of chemical vapour deposition chambers.
 - b) the quantities of each substance that have been recycled, reclaimed and destroyed, respectively.
 - c) any authorisation to use quota, specifying relevant quantities, for the purpose of Article 12;
 - (c) any stocks held at the beginning and the end of the reporting period.

3. Each exporter referred to in Article 17(1) shall report on:
 - (a) the quantities of each substance that it has exported from the EU other than to be recycled, reclaimed or destroyed;
 - (b) any quantities of each substance that it has exported to be recycled, to be reclaimed and to be destroyed, respectively.

4. Each undertaking referred to in Article 17(2) shall report on:
 - a) the quantities of [...] substance destroyed, including quantities contained in products or equipment;
 - b) any stocks of [...] substance waiting to be destroyed, including quantities contained in products or equipment;
 - c) the technology used for the destruction.

- 4a. Each undertaking referred to in Article 17(2a) shall report on:
 - (a) quantities of each substance used as feedstock.

5. Each undertaking referred to in Article 17(3) shall report on:
 - (a) the categories of the products or equipment;
 - (b) the number of units;
 - (c) any quantities of each substance contained in the products or equipment.

ANNEX VIII

Correlation table

Regulation (EC) No 842/2006	This Regulation
Article 1	-
Article 2	Article 1
Article 3(1)	Article 2(2)
Article 3(2), first subparagraph	Article 3(1)
Article 3(2), second subparagraph	Article 2(3), second subparagraph
Article 3(2), third subparagraph	Article 3(1), first subparagraph
Article 3(3)	Article 3(3)
Article 3(4)	Article 3(4)
Article 3(5)	Article 3(5)
Article 3(6)	Article 4(1)
Article 3(7)	Article 3(6)
Article 4(1)	Article 6(1)
Article 4(2)	Article 6(3)
Article 4(3)	Article 6(4)
Article 4(4)	Article 6(5)
Article 5(1)	Article 8(7)
Article 5(2), first sentence	Article 8(1) and (4)
Article 5(2), second sentence	Article 8(6), first sentence
Article 5(2), third sentence	Article 8(6), second sentence
Article 5(3)	Article 2(5)
Article 5(4)	Article 2(4) point (d)
Article 5(5)	Article 8(8)
Article 6(1), first subparagraph	Article 17(1), first subparagraph
Article 6(1)	Article 17(1) and Annex VII
Article 6(2)	Article 17(5)

Article 6(3)	Article 17(6)
Article 6(4)	Article 18(1)
Article 7(1) first subparagraph, first sentence	Article 10(1)
Article 7(1) second subparagraph, second and third sentence	Article 10(2) and (3)
Article 7(2)	Article 10(1), first subparagraph
Article 7(3), first sentence	Article 10(6)
Article 7(3), second sentence	Article 10(7)
Article 8(1)	Article 11(1)
Article 8(2)	Article 11(2)
Article 9(1)	Article 9(1)
Article 9(2)	-
Article 9(3)	-
Article 10	19(3)
Article 11	-
Article 12	Article 21
Article 13(1)	Article 22(2), first subparagraph
Article 13(2)	Article 22(2), second subparagraph
Article 14	-
Article 15	Article 24
Annex I — Part 1	Annex I
Annex I — Part 2	Annex IV
Annex II	Annex III