



**EUROPEAN UNION**

**THE EUROPEAN PARLIAMENT**

**THE COUNCIL**

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**REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
ON FLUORINATED GREENHOUSE GASES,  
AMENDING DIRECTIVE (EU) 2019/1937  
AND REPEALING REGULATION (EU) No 517/2014**

**REGULATION (EU) 2024/...**  
**OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**

**of 7 February 2024**

**on fluorinated greenhouse gases, amending Directive (EU) 2019/1937  
and repealing Regulation (EU) No 517/2014**

**(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 Committee<sup>1</sup>,

After consulting the Committee of the Regions,

Acting in accordance with the ordinary legislative procedure<sup>2</sup>,

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<sup>1</sup> OJ C 365, 23.9.2022, p. 44.

<sup>2</sup> Position of the European Parliament of 16 January 2024 (not yet published in the Official Journal) and decision of the Council of 23 January 2024.

Whereas:

- (1) The European Green Deal, as set out in the Commission communication of 11 December 2019, launched a new growth strategy for the Union that aims to transform the Union into a fair and prosperous society, with a modern, resource-efficient and competitive economy. It reaffirms the Commission's ambition to make Europe the first climate-neutral and zero pollution continent by 2050 and aims to protect the health and well-being of citizens from environment-related risks and impacts, while ensuring an inclusive, fair and just transition, leaving no one behind. Furthermore, the Union is committed to ensuring the full implementation of Regulation (EU) 2021/1119 of the European Parliament and of the Council<sup>3</sup> and of the 8th Environment Action Programme, established by Decision (EU) 2022/591 of the European Parliament and of the Council<sup>4</sup>, and is committed to the United Nations 2030 Agenda for Sustainable Development and its Sustainable Development Goals.

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<sup>3</sup> Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law') (OJ L 243, 9.7.2021, p. 1).

<sup>4</sup> Decision (EU) 2022/591 of the European Parliament and of the Council of 6 April 2022 on a General Union Environment Action Programme to 2030 (OJ L 114, 12.4.2022, p. 22).

- (2) Fluorinated greenhouse gases are human-made chemicals that are very strong greenhouse gases, which are often several thousand times stronger than carbon dioxide (CO<sub>2</sub>). Together with CO<sub>2</sub>, methane and nitrous oxide, fluorinated greenhouse gases belong to the group of greenhouse gas emissions covered by the Paris Agreement adopted under the United Nations Framework Convention on Climate Change (UNFCCC) (the ‘Paris Agreement’)<sup>5</sup>. Today, fluorinated greenhouse gas emissions amount to 2,5 % of total greenhouse gas emissions in the Union, and have doubled from 1990 to 2014 in contrast to other greenhouse gas emissions, which have fallen.
- (3) Regulation (EU) No 517/2014 of the European Parliament and of the Council<sup>6</sup> was adopted to reverse the increase in fluorinated greenhouse gas emissions. As concluded in an evaluation prepared by the Commission, Regulation (EU) No 517/2014 has led to a year-on-year decrease of fluorinated greenhouse gas emissions. The supply of hydrofluorocarbons (HFCs) has declined by 37 % in metric tonnes and by 47 % in terms of tonnes of CO<sub>2</sub> equivalent from 2015 until 2019. There has also been a clear shift to the use of alternatives with a lower global warming potential, including natural alternatives (for example, air, CO<sub>2</sub>, ammonia, hydrocarbons and water), in many types of equipment that traditionally used fluorinated greenhouse gases.

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<sup>5</sup> OJ L 282, 19.10.2016, p. 4.

<sup>6</sup> Regulation (EU) No 517/2014 of the European Parliament and of the Council of 16 April 2014 on fluorinated greenhouse gases and repealing Regulation (EC) No 842/2006 (OJ L 150, 20.5.2014, p. 195).

- (4) The Intergovernmental Panel on Climate Change (IPCC) concludes in its 2021 Special Report that emission decreases for fluorinated greenhouse gases of up to 90 % by 2050 globally compared to the year 2015 would be needed. In response to the urgency for climate action, the Union increased its climate ambition through Regulation (EU) 2021/1119. That Regulation establishes a binding Union domestic reduction target for net greenhouse gas emissions (emissions after deduction of removals) of at least 55 % by 2030 compared to 1990 levels and the objective of achieving climate neutrality within the Union at the latest by 2050. The Union has also enhanced its initial nationally determined contribution under the Paris Agreement of greenhouse gas emissions reductions from at least 40 % by 2030, to at least 55 %. However, the evaluation of Regulation (EU) No 517/2014 shows that the emission savings envisaged by 2030 in the context of the outdated Union climate objectives will not be fully achieved.
- (5) Due to global increases in HFC emissions, Parties to the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer (the ‘Protocol’) decided in 2016, under the Kigali Amendment to the Protocol (the ‘Kigali Amendment’), which was approved on behalf of the Union by Council Decision (EU) 2017/1541<sup>7</sup>, to implement an HFC phase-down that is to reduce HFC production and consumption by more than 80 % over the next 30 years. This implies that each Party must comply with an HFC consumption and production reduction schedule as well as provide for a licencing system for imports and exports and reporting on HFCs. It is estimated that the Kigali Amendment alone will save up to 0,4 °C of additional warming by the end of this century.

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<sup>7</sup> Council Decision (EU) 2017/1541 of 17 July 2017 on the conclusion, on behalf of the European Union, of the Kigali Amendment to the Montreal Protocol on substances that deplete the ozone layer (OJ L 236, 14.9.2017, p. 1).

- (6) It is important that this Regulation ensures that the Union comply with its international obligations under the Kigali Amendment in the long-term, in particular, with regard to the reduction of consumption and production of HFCs, and to reporting and licensing requirements, in particular by introducing a phase-down for production and adding reduction steps for the placing on the market of HFCs after 2030.
- (7) Some fluorinated greenhouse gases subject to this Regulation are Per- and Polyfluorinated Substances (PFAS) or are proven to or suspected to degrade into PFAS. PFAS are chemicals which resist degradation and potentially have negative effects on health and the environment. In line with the precautionary principle, undertakings should consider using alternatives, where available, which are less harmful for health, the environment and the climate. In 2023 a proposal under Regulation (EC) No 1907/2006 of the European Parliament and of the Council<sup>8</sup> to restrict the manufacture, placing on the market and use of PFAS, including fluorinated greenhouse gases, was submitted to the European Chemicals Agency. When considering potential PFAS restrictions, the Commission and Member States should take into account the availability of those alternatives.

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<sup>8</sup> 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), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ L 396, 30.12.2006, p. 1).

- (8) To ensure coherence with the obligations under the Protocol, global warming potential of HFCs should be calculated in terms of the 100-year global warming potential of one kilogram of a gas relative to that of one kilogram of CO<sub>2</sub>, based on the Fourth Assessment Report adopted by the IPCC. For other fluorinated greenhouse gases, the Sixth IPCC Assessment Report should be used. Considering the importance of rapidly reducing greenhouse gas emissions in order to keep the target under the Paris Agreement of global warming of 1,5 °C within reach, the 20-year global warming potential of greenhouse gases is becoming increasingly relevant. In that respect, where available, the 20-year global warming potential should be provided to better inform about the climate impacts of the substances covered by this Regulation. The Commission should raise awareness of the 20-year global warming potential of fluorinated greenhouse gases.
- (9) The intentional release of fluorinated substances into the atmosphere, where such release is unlawful, is a serious infringement of this Regulation and should be explicitly prohibited. Operators and manufacturers of equipment should be obliged to prevent leakage of such substances to the extent possible, including through checking the most relevant equipment for leaks. Where the release of fluorinated substances is technically necessary, operators should take all technically and economically feasible measures to prevent the release of such substances into the atmosphere, including by recapturing the gases emitted.

- (10) Sulfuryl fluoride is another very potent greenhouse gas that can be emitted when used for fumigation. Operators, using sulfuryl fluoride for fumigation, should document the use of capture and collection measures of that gas or, when capture is not technically or economically feasible, should specify the reasons therefor.
- (11) Given that the production process for some fluorinated compounds can result in the emission of other fluorinated greenhouse gases, as by-products, such by-product emissions should be destroyed or recovered for subsequent use as a condition for the placing on the market of fluorinated greenhouse gases. Producers and importers should be required to document mitigation measures adopted to prevent emissions of trifluoromethane during the production process and to provide evidence of the destruction or recovery for subsequent use of those by-product emissions, in line with the best available techniques. A declaration of conformity should be provided at the moment of the placing on the market of fluorinated greenhouse gases.



- (12) To prevent emissions of fluorinated substances, it is necessary to lay down provisions on the recovery of substances from products and equipment and on the prevention of leakages of such substances. Foams containing fluorinated greenhouse gases should be treated in accordance with Directive 2012/19/EU of the European Parliament and of the Council<sup>9</sup>. Recovery obligations should also be extended to building owners and contractors when removing certain foams from buildings, in order to maximise the reduction of emissions. Since the recovery, recycling and reclamation of fluorinated greenhouse gases is an application of circular economy principles, provisions on the recovery of substances are also introduced in light of the communications of the Commission of 10 March 2020 on ‘A new industrial strategy for Europe’, of 11 March 2020 on ‘A new Circular Economy Action Plan – For a cleaner and more competitive Europe’, of 14 October 2020 on ‘Chemicals Strategy for Sustainability Towards a toxic-free environment’, of 5 May 2021 on ‘Updating the 2020 New Industrial Strategy: Building a stronger Single Market for Europe’s recovery’ and of 12 May 2021 on ‘Pathway to a Healthy Planet for All – EU Action Plan: “Towards zero pollution for air, water and soil”’.

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<sup>9</sup> Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE) (OJ L 197, 24.7.2012, p. 38).

- (13) Cooling and freezing appliances rely heavily on fluorinated greenhouse gases for their proper functioning, and they represent one of the most relevant categories in the waste management of electrical and electronic equipment. In line with the polluter pays principle and to ensure proper waste management regarding those harmful gases, it is important that obligations relating to the extended responsibility for producers in the case of waste electrical and electronic equipment also cover the management of the fluorinated greenhouse gases contained or used in waste electrical and electronic equipment. Directive 2012/19/EU sets out financing obligations on producers of electrical and electronic equipment. This Regulation complements that Directive by requiring the financing of the collection, treatment, recovery, environmentally sound disposal, recycling, reclamation or destruction of fluorinated greenhouse gases listed in Annexes I and II to this Regulation from the products and equipment, containing those gases or whose functioning relies upon those gases, and which constitutes waste electrical and electronic equipment.

- (14) Refrigeration and air-conditioning equipment contained in a means of transport have particularly high leakage rates due to the vibrations that occur during transport. Operators of most means of transport should carry out leak checks or install leakage detection systems and recover fluorinated greenhouse gases for such mobile equipment. Like operators of other equipment covered by this Regulation, operators of refrigeration and air conditioning equipment on-board ships should be required to take precautionary actions to prevent the leakage of fluorinated greenhouse gases and, where such a leakage is detected, should repair it without undue delay. Given the international character of shipping, it is important that the Union and its Member States, within their respective competences, work with third countries to ensure that unnecessary emissions of fluorinated greenhouse gases in that sector are prevented, including during installation, maintenance or servicing, repair and recovery from refrigeration and air-conditioning equipment on ships. When reviewing the implementation of this Regulation, the Commission should assess the feasibility of extending the scope of containment measures to ships.

- (15) Regulation (EU) 2018/1139 of the European Parliament and of the Council<sup>10</sup> and its implementing acts lay down rules on the skills and knowledge required for natural persons who undertake maintenance or servicing activities on aircraft components. In order to prevent unnecessary emissions of fluorinated greenhouse gases in that sector, including during installation, maintenance or servicing, repair and recovery from refrigeration and air-conditioning equipment on aircraft, it is appropriate to cover the competences that are required in the regular process of updating the certification specifications and other detailed specifications, acceptable means of compliance and guidance material for the application of that Regulation.

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<sup>10</sup> Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 (OJ L 212, 22.8.2018, p. 1).

- (16) In order to contribute to meeting the Union’s climate objectives and to encourage the use of technology that has no impact or less impact on the climate, that could involve the use of substances that are toxic, flammable or highly pressurised, or other relevant risks, Member States should take appropriate measures to target the need for skilled personnel so that a high number of natural persons, who carry out activities involving fluorinated greenhouse gases and technology replacing or reducing their use, are trained and certified. Such measures should include measures in the heat pump sector, where an increasing number of personnel with the necessary skills will be needed, amongst other things in light of the objectives set out in the communication of the Commission of 18 May 2022 on ‘REPowerEU Plan’, to install and service heat pumps based on novel refrigerant technologies to which different safety requirements and technical requirements apply. Member States could, for example, use the support provided by the private-public partnerships launched under the European Skills Agenda to increase the number of trained persons. Training should include information on energy efficiency aspects, alternatives to fluorinated greenhouse gases and applicable regulations and technical standards. Certification and training programmes established under Regulation (EU) No 517/2014, which could be integrated in national vocational training systems, should be reviewed or adapted enabling technicians to handle alternative technologies safely. Existing certificates issued under Regulation (EU) No 517/2014 should remain valid.

- (17) In May 2022, the Commission presented the REPowerEU Plan. The REPowerEU Plan includes a target to roll out 10 million hydronic heat pumps by 2027 and to double the rate of heat pump deployment by 2030, resulting in a total additional deployment of at least 30 million heat pumps by 2030. Whereas the heat pump sector will shift to lower GWP refrigerants as a result of the measures provided for under this Regulation, any increase in the deployment of heat pumps as envisaged by REPowerEU could impact the availability of HFCs on the Union market, and will depend in part on the market uptake of alternative technology before the entry into force of the prohibitions on the placing on the market under Annex IV and on the amount of heat pumps deployed that still require higher GWP gases. The Commission should closely monitor market developments, including the development of prices of fluorinated greenhouse gases listed in Section 1 of Annex I and assess at least annually whether severe shortages exist that could endanger the attainment of the REPowerEU heat pump deployment targets. If the Commission finds that such shortages exist, it should be possible to make additional amounts of HFC quota available for the heat pump sector, in addition to the quota set out under Annex VII.

- (18) Where suitable alternatives to the use of specific fluorinated greenhouse gases are available, the placing on the market of new equipment for refrigeration, air-conditioning, and fire protection, that contains fluorinated greenhouse gases or whose functioning relies upon those gases, and of foams and technical aerosols that contain fluorinated greenhouse gases, should be prohibited. Subject to specific conditions, such prohibitions should not apply to parts required to repair or service existing equipment that has already been installed in order to ensure that such equipment remains repairable and maintainable for its full lifespan. Where alternatives are not available or cannot be used for technical or safety reasons, or where the use of such alternatives would entail disproportionate costs, it should be possible for the Commission to authorise an exemption to allow the placing on the market of such products and equipment for a maximum period of 4 years. It should be possible to renew that exemption if, after assessment of a new substantiated exemption request, the Commission, through the committee procedure, concludes that alternatives are still not available.
- (19) The Commission should encourage the European standardisation organisations to develop and update relevant harmonised standards to ensure the smooth implementation of the restrictions on placing on the market laid down in this Regulation. Member States should ensure that national safety standards and building codes are updated to reflect the relevant international and European standards, including International Electrotechnical Commission (IEC) 60335-2-89 and IEC 60335-2-40.

- (20) The manufacture of metered dose inhalers for the delivery of pharmaceutical ingredients uses a non-negligible proportion of all HFCs consumed in the Union today. Alternative options are available that include metered dose inhalers using lower GWP fluorinated greenhouse gases as propellants that have been newly developed by industry. This Regulation includes the metered dose inhalers sector in the HFC quota system, thereby creating an incentive for the industry to pursue its path towards cleaner alternatives. To enable a smooth transition, the quota mechanism envisaged for the metered dose inhalers sector will guarantee full quota, corresponding to the most recent market share of that sector, for the period from 2025 to 2026, and reach the full reduction rate of the other sectors covered under the quota system only in 2030. HFCs used as propellants in metered dose inhalers are critical for the health of patients suffering from respiratory conditions, such as asthma and chronic obstructive pulmonary disease. Metered dose inhalers are medicinal products subject to rigorous assessments, including clinical studies, in order to ensure patient safety. Cooperation between the Commission, competent authorities in Member States and the European Medicines Agency should facilitate the smooth approval process of metered dose inhalers using low GWP fluorinated greenhouse gases and alternatives to fluorinated greenhouse gases, thereby ensuring the transition to cleaner solutions.



- (21) Where technically suitable alternatives are available and consistent with Union competition policy, the putting into operation of new electrical switchgear with relevant fluorinated greenhouse gases should be prohibited. Where it is necessary to extend existing electrical equipment, one or more additional cells with fluorinated greenhouse gases, with the same GWP as the existing cells, can be added if a technology using fluorinated greenhouse gases with a lower GWP would entail the replacement of the entire electrical equipment.
- (22) In order to limit the need for the production of virgin sulphur hexafluoride (SF<sub>6</sub>), the capacity for reclamation of SF<sub>6</sub> from existing equipment should be increased. Without endangering the safe functioning of the electrical grids and power plants, the use of virgin SF<sub>6</sub> in electrical switchgear should be avoided where it is technically feasible to use reclaimed or recycled SF<sub>6</sub> and it is available.
- (23) In order to reduce the indirect impact of the operation of refrigeration, air-conditioning equipment and heat pumps on the climate, the maximum energy consumption of such equipment as set out in relevant implementing measures adopted under Directive 2009/125/EC of the European Parliament and of the Council<sup>11</sup> should continue to be considered as a ground for exempting specified types of equipment from the prohibition to use fluorinated greenhouse gases.

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<sup>11</sup> 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).

- (24) Non-refillable containers for fluorinated greenhouse gases should be prohibited since, when those containers are emptied, an amount of refrigerant inevitably remains, which is then released into the atmosphere. This Regulation should prohibit their export, import, placing on the market, subsequent supply or making available on the market, and use, except for the purpose of laboratory and analytical uses. To ensure that refillable containers for fluorinated greenhouse gases are refilled and not discarded, undertakings should be required to produce a declaration of conformity that includes evidence of the arrangements for the return of refillable containers for the purpose of refilling, when placing them on the market.

- (25) Following the Kigali Amendment, the export of HFCs from states that are parties to the Protocol to non-party states is prohibited. Such a prohibition is an important step towards the phasing down of HFCs. Nevertheless, several parties to the Protocol consider the prohibition to be insufficient to tackle the environmental concerns linked to the export of HFCs. Several developing countries that are parties to the Protocol have raised the problem of the export from other parties of inefficient refrigeration and air-conditioning appliances, using obsolete refrigerants and refrigerants with high GWP, to their markets, thus increasing service needs. Such a situation is particularly problematic in developing countries with limited resources and capacity for containment and recovery, as well as for used equipment with short remaining expected lifetimes and new equipment during use but at end of life. In the framework of the Union's global efforts to mitigate climate change, in order to support the achievement of the objectives of the Protocol, and in accordance with what is already provided under Regulation (EC) No 1005/2009 of the European Parliament and of the Council<sup>12</sup>, it is appropriate to prohibit the export of certain used and new equipment containing, or whose functioning relies upon, fluorinated greenhouse gases with a high GWP. That export prohibition should apply only in cases where the equipment is subject to a prohibition under Annex IV and at the same time meets the requirements set out in Article 22(3).

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<sup>12</sup> Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer (OJ L 286, 31.10.2009, p. 1).

- (26) In order to facilitate the enforcement of the placing on the market prohibitions and the restrictions on products and equipment that contain fluorinated greenhouse gases or whose functioning relies upon those gases, including when placed on the market in containers, it is important to establish the necessary labelling requirements for those goods.
- (27) When desflurane is used as inhalation anaesthetic, that very potent greenhouse gas is released. In light of the availability of less potent alternatives, the use of desflurane should be permitted only where alternatives cannot be used for medical grounds. Where the derogation to permit its use applies, desflurane should, like all other gases, be captured, and the healthcare institution should keep evidence on the medical justification.
- (28) To implement the Protocol, including the gradual reduction of the quantities of HFCs, the Commission should continue to allocate quota to individual producers and importers for the placing on the market of HFCs, ensuring that the overall quantitative limit permitted under the Protocol is not exceeded. The Commission should be able, exceptionally, to exempt for up to 4 years from the quota requirements of HFCs for use in specific applications or specific categories of products or equipment. It should be possible to renew that exemption if, after assessment of a new substantiated exemption request, the Commission, through the committee procedure, concludes that alternatives are still not available. To protect the integrity of the gradual reduction of the quantities of HFCs placed on the market, HFCs contained in equipment should continue to be accounted for under the quota system.

- (29) Initially, the calculations of reference values and of the quota allocation to individual producers and importers were based on the quantities of HFCs that they reported as having been placed on the market during the reference period from 2009 to 2012. Nevertheless, in order not to exclude undertakings from entering the market or from expanding their activities, a smaller part of the overall maximum quantity should be reserved for producers and importers that have not previously placed HFCs on the market and for producers and importers that have a reference value and wish to increase their quota allocation.
- (30) By a recalculation at least every 3 years of the reference values and quota, the Commission should ensure that undertakings are allowed to continue their activities on the basis of the average volumes they placed on the market in recent years, also including undertakings that previously had no reference value.
- (31) On behalf of the Union, the Commission reports annually to the Ozone Secretariat on the import and export of hydrofluorocarbons controlled under the Protocol. Although Member States are responsible for the reporting of production and destruction of hydrofluorocarbons, the Commission should provide draft data on those activities in order to facilitate the early calculation of the Union's consumption by the Ozone Secretariat, as well as data on HFC-23 emissions. In the absence of notifications extending the regional economic integration organisation clause, the Commission should continue that practice of annual reports while ensuring that Member States are provided with sufficient time to review the draft data provided by the Commission in order to avoid inconsistencies.

- (32) Considering the market value of the allocated quota, it is appropriate to claim a price for its allocation. This avoids a further fragmentation of the market to the detriment of those undertakings that need HFCs and already dependent on HFC trade in the declining market. It is assumed that undertakings that decide not to claim and pay any quota, for which they would be entitled in the year or years prior to the calculation of reference values, have decided to leave the market and thus they do not get a new reference value. Part of the revenue should be used to cover administrative costs.
- (33) To maintain the flexibility of the market in bulk HFCs, it should be possible for undertakings for which a reference value has been determined to transfer quota to other producers or importers in the Union or to other producers or importers which are represented in the Union by an only representative.
- (34) A central so-called F-gas Portal should be set up and operated by the Commission to manage quota for the placing on the market of HFCs, registration of undertakings concerned, and reporting on all substances and on all equipment placed on the market, in particular where the equipment is pre-charged with HFCs that have not been placed on the market prior to charging. To ensure that only genuine traders can register in the F-gas Portal, specific conditions should be established. A valid registration in the F-gas Portal should constitute a licence, which is an essential requirement under the Protocol to monitor HFC trade and prevent illegal activities in that respect.

- (35) In order to ensure automatic customs controls in real time, at shipment level, as well as the electronic exchange and storage of information on all shipments of fluorinated greenhouse gases, and products and equipment, covered by this Regulation that are presented to customs authorities in Member States (the ‘customs authorities’), it is necessary to interconnect the F-gas Portal with the European Union Single Window Environment for Customs (‘EU Single Window Environment for Customs’) established by Regulation (EU) 2022/2399 of the European Parliament and of the Council<sup>13</sup>.
- (36) To enable the effectiveness of this Regulation to be monitored, the scope of the reporting obligations should be extended to cover other fluorinated substances that have significant GWP or that are likely to replace the use of fluorinated greenhouse gases. For the same reason, the destruction of fluorinated greenhouse gases and the importation into the Union of those gases when contained in products and equipment should also be reported. De minimis thresholds should be set to avoid any disproportionate administrative burden, in particular for micro-enterprises and small and medium-sized enterprises as defined in the Annex to Commission Recommendation 2003/361/EC<sup>14</sup> where it does not result in non-compliance with the Protocol.

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<sup>13</sup> Regulation (EU) 2022/2399 of the European Parliament and of the Council of 23 November 2022 establishing the European Union Single Window Environment for Customs and amending Regulation (EU) No 952/2013 (OJ L 317, 9.12.2022, p. 1).

<sup>14</sup> Commission Recommendation 2003/361/EC of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (OJ L 124, 20.5.2003, p. 36).

- (37) To ensure that reports on substantial quantities of substances are accurate and that the quantities of HFCs contained in pre-charged equipment are accounted for under the Union quota system, independent third-party verification should be required.
- (38) The use of consistent, high-quality data to report on fluorinated greenhouse gas emissions is essential to ensure the quality of emissions reporting under the Paris Agreement. The establishment of reporting systems by Member States of emissions of fluorinated greenhouse gases would provide coherence with Regulation (EU) 2018/1999 of the European Parliament and of the Council<sup>15</sup>. The collection of data on leakage of fluorinated greenhouse gases from equipment by undertakings under this Regulation could significantly improve those emission-reporting systems. It should also lead to a better estimation of emissions of fluorinated greenhouse gases in the national greenhouse gases inventories.

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<sup>15</sup> Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council (OJ L 328, 21.12.2018, p. 1).



- (39) In order to facilitate customs controls, it is important to specify the information to be submitted to customs authorities where gases, products and equipment covered by this Regulation are imported or exported, as well as the tasks of customs authorities, and, where relevant, market surveillance authorities, when they implement the prohibitions and restrictions on imports or exports of those substances, products and equipment. Regulation (EU) 2019/1020 of the European Parliament and of the Council<sup>16</sup>, which sets out rules on market surveillance and control of products entering the Union market, applies to the substances, products and equipment covered by this Regulation in so far as there are no specific provisions that regulate in a more specific manner particular aspects of market surveillance and enforcement. Where this Regulation lays down specific provisions, for example on customs controls, those more specific provisions prevail, thereby complementing the rules set out under Regulation (EU) 2019/1020. In order to ensure protection of the environment, this Regulation should apply to all forms of supply of fluorinated greenhouse gases that are subject to this Regulation, including distance sales as referred to in Article 6 of Regulation (EU) 2019/1020.
- (40) The competent authorities of Member States should take all necessary measures, including confiscation and seizure, in order to prevent the unlawful entry into or exit from the Union of gases and products or equipment covered by this Regulation. The re-export of illegally imported gases, products or equipment covered by this Regulation should in any event be prohibited.

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<sup>16</sup> Regulation (EU) 2019/1020 of the European Parliament and of the Council of 20 June 2019 on market surveillance and compliance of products and amending Directive 2004/42/EC and Regulations (EC) No 765/2008 and (EU) No 305/2011 (OJ L 169, 25.6.2019, p. 1).

- (41) Member States should ensure that customs office personnel or other authorised persons in accordance with national rules carrying out controls under this Regulation have the appropriate resources and knowledge, for example by way of training made available to them, and are sufficiently equipped to address cases of illegal trade in the gases, products and equipment covered by this Regulation. Member States should designate the customs offices or other places that meet those conditions and are therefore mandated to carry out customs controls on imports, exports and in cases of transit.
- (42) Cooperation and exchange of necessary information between all competent authorities of Member States involved in the implementation of this Regulation, namely customs authorities, market surveillance authorities, environmental authorities and any other competent authorities with inspection functions, amongst Member States and with the Commission, is extremely important for tackling infringements of this Regulation, in particular illegal trade. Due to the confidential nature of the exchange of customs risk-related information, the Customs Risk Management System should be used for that purpose.
- (43) In carrying out the tasks assigned to it by this Regulation, and with a view to promoting cooperation and adequate exchange of information between competent authorities and the Commission in the case of compliance checks and illegal trade in fluorinated greenhouse gases, the Commission should make use of the European Anti-Fraud Office (OLAF) established by Commission Decision 1999/352/EC, ECSC, Euratom<sup>17</sup>. OLAF should have access to all necessary information to facilitate the performance of its tasks.

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<sup>17</sup> Commission Decision 1999/352/EC, ECSC, Euratom of 28 April 1999 establishing the European Anti-fraud Office (OLAF) (OJ L 136, 31.5.1999, p. 20).

- (44) The import from and export to a State that is not party to the Protocol of HFCs as well as of products and equipment containing HFCs or whose functioning relies upon those gases should be prohibited as from 2028. The Protocol envisages that prohibition from 2033, and the purpose of its earlier application under this Regulation is to ensure that the global HFC reduction measures of the Kigali Amendment provide the envisaged benefit to the climate as soon as possible.
- (45) Member States should ensure that infringements of this Regulation by undertakings are subject to effective, proportionate and dissuasive penalties.
- (46) Member States should be able to lay down rules for criminal penalties or administrative penalties or both for the same infringement. Where Member States impose both criminal and administrative penalties for the same infringement, those penalties should not lead to a breach of the right not to be tried or punished twice in criminal proceedings for the same criminal offence (*ne bis in idem*), as interpreted by the Court of Justice of the European Union.

- (47) The competent authorities of Member States, including environmental authorities, market surveillance and customs authorities, should carry out checks, on a risk-based approach, in order to ensure compliance with this Regulation. Such an approach is necessary in order to target those activities which represent the highest risk of illegal trade in, or unlawful release of, fluorinated greenhouse gases covered by this Regulation. In addition, competent authorities should carry out checks when in possession of evidence or other relevant information on potential cases of non-compliance. Where relevant and to the extent possible, such information should be communicated to customs authorities in order to carry out a risk analysis prior to controls, in accordance with Article 47 of Regulation (EU) No 952/2013 of the European Parliament and of the Council<sup>18</sup>. It is important to ensure that where cases of infringements of this Regulation have been established by competent authorities, the competent authorities responsible for following up the issuance of penalties are informed in order to be able to impose the appropriate penalty where it is needed.

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<sup>18</sup> Regulation (EU) No 952/2013 of the European Parliament and of the Council of 9 October 2013 laying down the Union Customs Code (OJ L 269, 10.10.2013, p. 1).

- (48) Whistleblowers can bring information to the attention of competent authorities of Member States which can help those competent authorities detect infringements of this Regulation and enable them to impose penalties. It should be ensured that adequate arrangements are in place to enable whistleblowers to alert the competent authorities to actual or potential infringements of this Regulation and to effectively protect the whistleblowers from retaliation. For that purpose, it should be provided that Directive (EU) 2019/1937 of the European Parliament and of the Council<sup>19</sup> is applicable to the reporting of breaches of this Regulation and to the protection of persons reporting such breaches.
- (49) According to settled case law of the Court of Justice of the European Union, it is for the courts of the Member States to ensure judicial protection of a person's rights under Union law. Furthermore, Article 19(1) of the Treaty on European Union (TEU) requires Member States to provide remedies that are sufficient to ensure effective legal protection in the fields covered by Union law. In that respect, Member States should ensure that the public, including natural or legal persons, has access to justice in line with the obligations that Member States have agreed to under the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters<sup>20</sup> of 25 June 1998 (the 'Aarhus Convention').

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<sup>19</sup> Directive (EU) 2019/1937 of the European Parliament and of the Council of 23 October 2019 on the protection of persons who report breaches of Union law (OJ L 305, 26.11.2019, p. 17).

<sup>20</sup> OJ L 124, 17.5.2005, p. 4.

- (50) The Commission should establish a so-called Consultation Forum. The Consultation Forum should ensure the balanced participation of Member States' representatives and representatives of relevant stakeholders, including environmental organisations, representatives of healthcare and patient association as well as representatives of manufacturers, operators and certified persons. The Consultation Forum should, where relevant, involve the European Medicines Agency.
- (51) To enhance legal certainty, the applicability, pursuant to this Regulation, of Directive (EU) 2019/1937 to reports of breaches of this Regulation and to the protection of persons reporting such breaches should be reflected in Directive (EU) 2019/1937. The Annex to Directive (EU) 2019/1937 should therefore be amended accordingly. It is for the Member States to ensure that that amendment is reflected in their transposition measures adopted in accordance with that Directive, although neither the amendment, nor the adaptation of national transposition measures, are a condition for the applicability of Directive (EU) 2019/1937 to the reporting of breaches of this Regulation and to the protection of persons reporting such breaches.
- (52) In order to ensure uniform conditions for the implementation of this Regulation, implementing powers should be conferred on the Commission as regards:
- evidence to be provided on the destruction or recovery of trifluoromethane by-production during the production of other fluorinated substances;
  - requirements for leak checks;

- the format, establishment and keeping of the records;
- minimum requirements for certification programmes and training attestations; and the format of the notification of certification and training programmes;
- requirements for including the elements that are essential for the binding arrangements that should be included in the declaration of conformity which provides evidence that refillable containers can be returned for refilling;
- time-limited exemptions for products and equipment falling under the placing on the market or the putting into operation of electrical switchgear prohibitions;
- format of labels;
- time-limited exemptions from maintenance or servicing prohibitions on the use of HFCs with certain GWP values in refrigeration, air-conditioning equipment and heat pumps;
- the determination of production rights for producers of HFCs;
- the determination of reference values for producers and importers for the placing on the market of HFCs;
- the detailed arrangements for the payment of the amount due;

- the detailed arrangements for the declaration of conformity for pre-charged equipment and their verification, as well as for the accreditation of verifiers;
- the smooth functioning of the F-gas portal and its compatibility with the EU Single Window Environment for Customs;
- exemptions from the export prohibitions of certain products and equipment;
- the authorisation of trade with entities not covered by the Protocol; and
- the details of the verification of reporting and of the accreditation of auditors and the format for submitting reports.

Those powers should be exercised in accordance with Regulation (EU) No 182/2011 of the European Parliament and of the Council<sup>21</sup>.

- (53) In order to supplement or amend certain non-essential elements of this Regulation, the power to adopt acts in accordance with Article 290 of the Treaty on the Functioning of the European Union (TFEU) should be delegated to the Commission as regards:
- the establishment of a list of products and equipment for which the recovery of fluorinated greenhouse gases or their destruction is technically and economically feasible and the specification of the technology to be applied;

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<sup>21</sup> Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers (OJ L 55, 28.2.2011, p. 13).



- labelling requirements set out in Article 12(4) to (14) where appropriate in view of commercial or technological development;
- the exclusion from quota requirements of HFCs in accordance with decisions of the Parties to the Protocol;
- the amounts due for the quota allocation and the allocation mechanism for remaining quota in order to compensate for inflation;
- Annex VII in order to allow the placing on the market of a quantity of fluorinated greenhouse gases listed in Annex I in addition to the quota under Annex VII;
- criteria to be taken into account by the competent authorities of Member States when carrying out checks;
- the requirements to be checked for the monitoring of substances and of products and equipment placed under temporary storage or under a customs procedure;
- tracing methodologies for fluorinated greenhouse gases placed on the market;
- the rules applicable to the release for free circulation and export of products and equipment imported from and exported to any State or regional economic integration organisation;
- the update of global warming potentials of listed gases; and

- the list of gases in Annexes I, II and III, where it has been found by the assessment panels established under the Protocol or by another authority of equivalent stature that these gases have a significant impact on the climate and where such gases are exported, imported, produced or placed on the market in significant quantities.

It is of particular importance that the Commission carry out appropriate consultations during its preparatory work, including at expert level and that those consultations be conducted in accordance with the principles laid down in the Interinstitutional Agreement of 13 April 2016 on Better Law-Making<sup>22</sup>. In particular, to ensure equal participation in the preparation of delegated acts, the European Parliament and the Council receive all documents at the same time as Member States' experts, and their experts systematically have access to meetings of Commission expert groups dealing with the preparation of delegated acts.

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<sup>22</sup> OJ L 123, 12.5.2016, p. 1.

- (54) The protection of individuals with regard to the processing of personal data by the Member States is governed by Regulation (EU) 2016/679 of the European Parliament and of the Council<sup>23</sup> and the protection of individuals with regard to the processing of personal data by the Commission is governed by Regulation (EU) 2018/1725 of the European Parliament and of the Council<sup>24</sup>, in particular as regards the requirements of confidentiality and security of processing, the transfer of personal data from the Commission to the Member States, the lawfulness of processing, and the rights of data subjects to information, access to and rectification of their personal data.
- (55) The European Data Protection Supervisor was consulted in accordance with Article 42(1) of Regulation (EU) 2018/1725 and delivered formal comments on 23 May 2022.

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<sup>23</sup> Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (OJ L 119, 4.5.2016, p. 1).

<sup>24</sup> Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC (OJ L 295, 21.11.2018, p. 39).

- (56) Since the objectives of this Regulation, namely to prevent additional fluorinated greenhouse gas emissions, thereby contributing to Union climate objectives, and to ensure compliance with the Protocol as regards obligations related to hydrofluorocarbons, cannot be sufficiently achieved by the Member States but can rather, by reason of the transboundary nature of the environmental problem addressed and the effects of this Regulation on the intra-Union and external trade, be better achieved at Union level, the Union may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 TEU. In accordance with the principle of proportionality, as set out in that Article, this Regulation does not go beyond what is necessary in order to achieve those objectives.
- (57) A number of amendments are to be made to Regulation (EU) No 517/2014. In the interests of clarity, that Regulation should be repealed and replaced by this Regulation,

HAVE ADOPTED THIS REGULATION:

# **Chapter I**

## **General Provisions**

### *Article 1*

#### *Subject matter*

This Regulation:

- (a) lays down rules on containment, use, recovery, recycling, reclamation and destruction of fluorinated greenhouse gases and on related ancillary measures, such as certification and training, which includes the safe handling of fluorinated greenhouse gases and of alternative substances that are not fluorinated;
- (b) imposes conditions on the production, import, export, placing on the market, subsequent supply and use of fluorinated greenhouse gases, and of specific products and equipment containing fluorinated greenhouse gases or whose functioning relies upon those gases;
- (c) imposes conditions on specific uses of fluorinated greenhouse gases;
- (d) establishes quantitative limits for the placing on the market of hydrofluorocarbons;
- (e) establishes rules on reporting.

## *Article 2*

### *Scope*

This Regulation applies to:

- (a) the fluorinated greenhouse gases listed in Annexes I, II and III, whether alone or as mixtures; and
- (b) products and equipment, and parts thereof, containing fluorinated greenhouse gases or whose functioning relies upon those gases.

## *Article 3*

### *Definitions*

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

- (1) ‘global warming potential’ or ‘GWP’ means the climatic warming potential of a greenhouse gas relative to that of carbon dioxide (CO<sub>2</sub>), calculated in terms of the 100-year global warming potential, unless otherwise specified, of one kilogram of a greenhouse gas relative to one kilogram of CO<sub>2</sub>, as set out in Annexes I, II, III and VI or in the case of mixtures, calculated in accordance with Annex VI;
- (2) ‘mixture’ means a substance composed of two or more substances, at least one of which is a substance listed in Annex I, II or III;

- (3) 'tonne of CO<sub>2</sub> equivalent' means a quantity of greenhouse gases expressed as the product of the weight of the greenhouse gases in metric tonnes and of their global warming potential;
- (4) 'hydrofluorocarbons' or 'HFCs' means the substances listed in Section 1 of Annex I or mixtures containing any of those substances;
- (5) 'operator' means the undertaking exercising actual power over the technical functioning of products, equipment or facilities covered by this Regulation, or the owner designated by a Member State as being responsible for the operator's obligations in specific cases;
- (6) 'placing on the market' means the customs release for free circulation in the Union or the supplying or making available to another person within the Union, for the first time, for payment or free of charge, or the use of substances produced, or of products or equipment manufactured, for own use;
- (7) 'import' means the entry of substances, products and equipment into the customs territory of the Union, in so far as the territory is covered by a ratification of the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer (the 'Protocol'), and includes temporary storage and the customs procedures referred to in Articles 201 and 210 of Regulation (EU) No 952/2013;
- (8) 'export' means the exit of substances, products and equipment from the customs territory of the Union, in so far as the territory is covered by a ratification of the Protocol;

- (9) 'hermetically sealed equipment' means equipment of which all parts containing fluorinated greenhouse gas are made tight during the manufacturing process at the premises of the manufacturer by welding, brazing or a similar permanent connection, which may include capped valves or capped service ports that allow proper repair or disposal, and of which the joints in the sealed system 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;
- (10) 'container' means a receptacle which is designed primarily for transporting or storing fluorinated greenhouse gases;
- (11) 'recovery' means the collection and storage of fluorinated greenhouse gases from containers, products and equipment during maintenance or servicing or prior to the disposal of the containers, products or equipment;
- (12) 'recycling' means the reuse of a recovered fluorinated greenhouse gas following a basic cleaning process, including filtering and drying;
- (13) 'reclamation' means the reprocessing of a recovered fluorinated greenhouse gas to the equivalent performance of a virgin substance, taking into account its intended use, in authorised reclamation facilities that have the appropriate equipment and procedures in place to enable the reclamation of such gases and that can assess and attest to the level of the required quality;



- (14) 'destruction' means the process of transforming or decomposing, permanently and as completely as possible, a fluorinated greenhouse gas into one or more stable substances that are not fluorinated greenhouse gases;
- (15) 'decommissioning' means the permanent removal from operation or usage of a product or of equipment that contains fluorinated greenhouse gases, including the final shutdown of a facility;
- (16) 'repair' means the restoration of damaged or leaking products or equipment that contain fluorinated greenhouse gases or whose functioning relies upon those gases, involving a part containing or designed to contain such gases;
- (17) 'installation' means the process of 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, that entails joining together gas-carrying conductors of a system to complete a circuit irrespective of the need to charge the system after assembly;
- (18) 'maintenance or servicing' means all activities, excluding recovery in accordance with Article 8 and leak checks in accordance with Article 4 and Article 10(1), first subparagraph, point (b), that entail opening the circuits or other subparts containing or designed to contain fluorinated greenhouse gases, 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, or adding fluorinated greenhouse gas;

- (19) 'virgin substance' means a substance which has not previously been used;
- (20) 'stationary' means not normally in transit during operation and covers room air conditioning equipment which is moveable between rooms;
- (21) 'mobile' means normally in transit during operation;
- (22) 'one-component foam' means a foam composition contained in a single aerosol dispenser in unreacted or partly reacted liquid state and that expands and hardens when it leaves the dispenser;
- (23) '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;
- (24) 'refrigerated trailer' means a vehicle that is designed and constructed to be towed by a road vehicle or a tractor, primarily to carry goods and that is equipped with a refrigeration unit;
- (25) 'refrigerated light-duty vehicle' means a motor vehicle with a mass of 3,5 tonnes or less that is designed and constructed primarily to carry goods and that is equipped with a refrigeration unit;
- (26) 'leakage detection system' means a calibrated mechanical, electrical or electronic device for detecting leakage of fluorinated greenhouse gases which, on detection, alerts the operator;

- (27) 'undertaking' means any natural or legal person which carries out an activity referred to in this Regulation;
- (28) 'feedstock' means any fluorinated greenhouse gas listed in Annex I or II, that undergoes chemical transformation in a process in which it is entirely converted from its original composition and whose emissions are insignificant;
- (29) 'commercial use' means use for the storage, display or dispensing of products, for sale to end users, in retail and food services;
- (30) 'fire protection equipment' means the equipment and systems utilised in fire prevention or suppression applications and includes fire extinguishers;
- (31) 'organic Rankine cycle' means a cycle containing condensable substances converting heat from a heat source into power for the generation of electric or mechanical energy;
- (32) 'military equipment' means arms, munitions and material intended specifically for military purposes which are necessary for the protection of the essential interests of the security of Member States;
- (33) 'electrical switchgear' means switching devices and the combination of such devices 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 usage in connection with the generation, transmission, distribution and conversion of electric energy;

- (34) ‘multipack centralised refrigeration systems’ means systems with two or more 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 and freezers, or to chilled store rooms;
- (35) ‘primary refrigerant circuit of cascade systems’ means the primary circuit in indirect medium temperature systems where a combination of two or more separate refrigeration circuits are connected in series such that the primary circuit absorbs the condenser heat from a secondary circuit for the medium temperature;
- (36) ‘use’ means, in relation to fluorinated greenhouse gases, their utilisation in the production, maintenance or servicing, including refilling, of products and equipment, or in other activities and processes referred to in this Regulation;
- (37) ‘establishment within the Union’ means, in relation to a natural person, for that person to have his or her habitual residence in the Union and, in relation to a legal person, for that person to have a permanent business establishment as referred to in Article 5, point (32), of Regulation (EU) No 952/2013 in the Union;
- (38) ‘self-contained’ means a complete factory-made system which is in a suitable frame or casing, is fabricated and transported complete or in two or more sections, can contain isolation valves and in which no gas-containing parts are connected on site;

- (39) ‘split system’ means a system consisting of a number of refrigerant piped units that form a separate but interconnected unit, requiring the installation and connection of refrigerant circuit components at the point of use;
- (40) ‘air-conditioning’ means the process of treating air to meet the requirements of a conditioned space by controlling its temperature, humidity, cleanliness or distribution;
- (41) ‘heat pump’ means a piece of equipment capable of using ambient heat or waste heat from air, water or ground sources to provide heat or cooling and is based on the interconnection of one or more components forming a closed cooling circuit in which a refrigerant circulates to extract and release heat;
- (42) ‘safety requirements’ means requirements on the safety of using fluorinated greenhouse gases and natural refrigerants or products and equipment containing or relying on them, prohibiting the use of certain fluorinated greenhouse gases or their alternatives, including when contained in a product or in equipment at a specific place of intended utilisation due to site and application specificities that are set out in:
- (a) Union or national law; or
  - (b) a non-legally binding act containing technical documentation or standards that have to be applied to ensure safety at the specific location, provided that they are in accordance with relevant Union or national law;

- (43) 'refrigeration' means the process of maintaining or lowering the temperature of a product, substance, system or other item;
- (44) 'chiller' means a single system whose primary function is to cool a heat transfer fluid (such as water, glycol, brine or CO<sub>2</sub>) for refrigeration, process, preservation or comfort purposes;
- (45) 'foam panel' means a structure made of layers containing a foam and a rigid material, such as wood or metal, bound to one or both sides;
- (46) 'laminated board' means a foam board that is covered by a thin layer of a non-rigid material, such as plastic.

## **Chapter II**

### **Containment**

#### *Article 4*

#### *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.

If an intentional release is technically necessary for the intended use, operators of equipment that contains fluorinated greenhouse gases or of facilities where fluorinated greenhouse gases are used shall take all measures that are technically and economically feasible to prevent, to the extent possible, their release into the atmosphere, including by recapturing the gases emitted.

2. In the case of fumigation with sulfuryl fluoride, operators shall document the use of capturing and collection measures or specify the reasons for which capturing and collection measures were not technically or economically feasible. Operators shall keep the supporting evidence for 5 years and make it available, upon request, to the competent authority of the Member State concerned or to the Commission.
3. Operators and manufacturers of equipment that contains fluorinated greenhouse gases or operators of facilities where fluorinated greenhouse gases are used, as well as undertakings in possession of such equipment during its transport or storage, shall take all necessary precautions to prevent the unintentional release of such gases. They shall take all measures that are technically and economically feasible to minimise leakage of the gases.
4. During the production, storage, transport and transfer of fluorinated greenhouse gases from one container or system to another, to equipment or to a facility, the undertaking concerned shall take all necessary precautions to limit release of fluorinated greenhouse gases to the greatest extent possible. This paragraph shall also apply where fluorinated greenhouse gases are produced as by-products.

5. Where a leakage of fluorinated greenhouse gases is detected, the operators and manufacturers of equipment and the operators of facilities where fluorinated greenhouse gases are used, and the undertakings in possession of such equipment during its transport or storage, shall ensure that the equipment or facility where fluorinated greenhouse gases are used is repaired without undue delay.

Where the equipment is subject to leak checks under Article 5(1) and a leak in the equipment has been repaired, the operators of the equipment shall ensure that the equipment is checked by a natural person who is certified in accordance with Article 10 at the earliest after an operating time of 24 hours has elapsed but not later than 1 month after the repair to verify that the repair has been effective. For mobile equipment listed in Article 5(3), points (a), (b) and (c), a leak check may be carried out directly after a repair.

6. Without prejudice to Article 11(1), first subparagraph, the placing on the market of fluorinated greenhouse gases shall be prohibited, unless producers or importers provide evidence to the competent authority of a Member State at the time of such placing on the market, that any trifluoromethane, produced as a by-product during the production process of the fluorinated greenhouse gases, including during the production of feedstock for the production of those gases, has been destroyed or recovered for subsequent use, using best available techniques.



For the purpose of providing that evidence, producers and importers shall draw up a declaration of conformity, accompanied by supporting documentation:

- (a) establishing the origin of the fluorinated greenhouse gases to be placed on the market;
- (b) identifying the production facility of origin of the fluorinated greenhouse gases to be placed on the market, including an identification of those facilities of origin of any precursor substances that involve the generation of chlorodifluoromethane (R-22) as part of the production process to produce the fluorinated greenhouse gases to be placed on the market;
- (c) proving the availability and operation of the abatement technology at the facilities of origin equivalent to UNFCCC-approved baseline methodology AM0001 for incineration of trifluoromethane waste streams or proving the capture and destruction methodology that ensured that emissions of trifluoromethane are destroyed in accordance with the requirements under the Protocol;
- (d) on any additional information facilitating the tracking of the fluorinated greenhouse gas prior to import.

Producers and importers shall keep the declaration of conformity and supporting documentation for a period of at least 5 years from the placing on the market and make them available, upon request, to the competent authority of the Member State concerned or to the Commission.

The Commission may, by means of implementing acts, determine the detailed arrangements relating to the declaration of conformity and supporting documentation referred to in the second subparagraph. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).

7. Natural persons carrying out the activities referred to in Article 10(1), first subparagraph, points (a), (b) and (c), shall be certified in accordance with Article 10 and shall take precautionary measures to prevent leakage of fluorinated greenhouse gases listed in Annexes I and II and, when fluorinated greenhouse gases are used in electrical switchgear, also in Annex III.

Legal persons carrying out the installation, maintenance or servicing, repair or decommissioning of the equipment listed in Article 5(2), points (a) to (e), and Article 5(3), points (a) and (b), shall be certified in accordance with Article 10 and shall take precautionary measures to prevent leakage of fluorinated greenhouse gases listed in Annex I and Section 1 of Annex II.

Natural persons carrying out the maintenance or servicing and repair of air-conditioning equipment containing fluorinated greenhouse gases in motor vehicles falling within the scope of Directive 2006/40/EC of the European Parliament and of the Council<sup>25</sup> and of mobile equipment listed in Article 5(3), point (c), of this Regulation shall hold at least a training attestation in accordance with Article 10(1), second subparagraph, of this Regulation.

## *Article 5*

### *Leak checks*

1. Operators and manufacturers of equipment that contains 5 tonnes of CO<sub>2</sub> equivalent or more of fluorinated greenhouse gases listed in Annex I or 1 kilogram or more of fluorinated greenhouse gases listed in Section 1 of Annex II that is not contained in foams, shall ensure that the equipment is checked for leaks.

Hermetically sealed equipment shall not be checked for leaks provided that it is labelled as hermetically sealed equipment and that it complies with one of the following conditions:

- (a) it contains less than 10 tonnes of CO<sub>2</sub> equivalent of fluorinated greenhouse gases listed in Annex I; or
- (b) it contains less than 2 kilograms of fluorinated greenhouse gases listed in Section 1 of Annex II.

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<sup>25</sup> Directive 2006/40/EC of the European Parliament and of the Council of 17 May 2006 relating to emissions from air conditioning systems in motor vehicles and amending Council Directive 70/156/EEC (OJ L 161, 14.6.2006, p. 12).

By way of derogation from the second subparagraph, where hermetically sealed equipment is installed in residential buildings, it shall not be checked for leaks where that equipment contains less than 3 kilograms of fluorinated greenhouse gases provided that it is labelled as hermetically sealed.

Electrical switchgear shall not be checked for leaks provided that it complies with one of the following conditions:

- (a) it has a tested leakage rate of less than 0,1 % per year as set out in the technical specification of the manufacturer and is labelled accordingly;
- (b) it is equipped with a pressure or density monitoring device with an automatic alert system while in operation;
- (c) it contains less than 6 kilograms of fluorinated greenhouse gases listed in Annex I.

2. Paragraph 1 shall apply to operators and manufacturers of the following stationary equipment that contains fluorinated greenhouse gases listed in Annex I or in Section 1 of Annex II:

- (a) refrigeration equipment;
- (b) air-conditioning equipment;
- (c) heat pumps;

- (d) fire protection equipment;
- (e) organic Rankine cycles;
- (f) electrical switchgear.

3. Paragraph 1 shall apply to operators and manufacturers of the following mobile equipment that contains fluorinated greenhouse gases listed in Annex I or in Section 1 of Annex II:

- (a) refrigeration units of refrigerated trucks and refrigerated trailers;
- (b) refrigeration units of refrigerated light-duty vehicles, intermodal containers, including reefers, and train wagons;
- (c) air-conditioning equipment and heat pumps in heavy duty vehicles, vans, non-road mobile machinery used in agriculture, mining and construction operations, trains, metros, trams and aircraft.

As regards the equipment referred to in paragraph 2, points (a) to (e), and points (a) and (b) of this paragraph, the checks shall be carried out by natural persons certified in accordance with Article 10.

4. As regards the mobile equipment referred to in paragraph 3, point (c), the checks shall be carried out by natural persons holding at least a training attestation in accordance with Article 10(1), second subparagraph.

5. Paragraphs 1 and 6 shall not apply to operators of mobile equipment under paragraph 3, points (b) and (c), until ... [the date 3 years from the date of entry into force of this Regulation].
6. The leak checks referred to in paragraph 1 shall be carried out with the following frequency:
  - (a) for equipment that contains less than 50 tonnes of CO<sub>2</sub> equivalent of fluorinated greenhouse gases listed in Annex I or less than 10 kilograms of fluorinated greenhouse gases listed in Section 1 of Annex II: at least every 12 months; or where a leakage detection system is installed in such equipment, at least every 24 months;
  - (b) for equipment that contains 50 tonnes of CO<sub>2</sub> equivalent or more, but less than 500 tonnes of CO<sub>2</sub> equivalent of fluorinated greenhouse gases listed in Annex I or 10 kilograms or more, but less than 100 kilograms of fluorinated greenhouse gases listed in Section 1 of Annex II: at least every 6 months or, where a leakage detection system is installed in such equipment, at least every 12 months;
  - (c) for equipment that contains 500 tonnes of CO<sub>2</sub> equivalent or more of fluorinated greenhouse gases listed in Annex I or 100 kilograms or more of fluorinated greenhouse gases listed in Section 1 of Annex II: at least every 3 months or, where a leakage detection system is installed in such equipment, at least every 6 months.

7. The obligations set out in paragraph 1 for fire protection equipment as referred to in paragraph 2, point (d), shall be deemed to be fulfilled provided that the following conditions are met:

- (a) the existing inspection regime meets ISO 14520 or EN 15004 standards; and
- (b) the fire protection equipment is inspected as often as is required under paragraph 6.

The obligations set out in paragraph 1, for mobile air-conditioning equipment and heat pumps, as referred to in paragraph 3, point (c), shall be deemed to be fulfilled provided that the mobile air-conditioning equipment and the heat pumps are subject to a regular inspection regime that includes leak checks.

8. The Commission may, by means of implementing acts, specify requirements for the leak checks to be carried out in accordance with paragraph 1 for each type of equipment referred to in paragraphs 2 and 3 and identify those parts of the equipment most likely to leak. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).

*Article 6*  
*Leakage detection systems*

1. Operators of stationary equipment listed in Article 5(2), points (a) to (d), that contains fluorinated greenhouse gases listed in Annex I in quantities of 500 tonnes of CO<sub>2</sub> equivalent or more or 100 kilograms or more of gases listed in Section 1 of Annex II, shall ensure that the equipment has a leakage detection system which alerts the operator or a service company of any leakage.
2. Operators of stationary equipment listed in Article 5(2), points (e) and (f), that contains fluorinated greenhouse gases listed in Annex I in quantities of 500 tonnes of CO<sub>2</sub> equivalent or more and installed from 1 January 2017, shall ensure that the equipment has a leakage detection system which alerts the operator or a service company of any leakage.
3. Operators of stationary equipment listed in Article 5(2), points (a) to (e), that is subject to paragraphs 1 or 2 of this Article shall ensure that leakage detection systems are checked at least once every 12 months to ensure their proper functioning.
4. Operators of stationary equipment listed in Article 5(2), point (f), that is subject to paragraph 2 of this Article shall ensure that leakage detection systems are checked at least once every 6 years to ensure their proper functioning.



*Article 7*  
*Record keeping*

1. Operators of equipment which is required to be checked for leaks pursuant to Article 5(1) shall establish and keep records for each piece of such equipment, specifying the following information:
  - (a) the quantity and type of gases contained in the equipment, indicating separately, if applicable, the quantity added during installation;
  - (b) the quantities of gases added during maintenance or servicing or due to leakage, including the date of such addition;
  - (c) the quantity of gases recovered;
  - (d) where gases have been added, the quantity and type of those gases and whether they have been recycled or reclaimed, and the name and address in the Union of the recycling or reclamation facility and, where applicable, the certificate number;
  - (e) the identity of the undertaking which installed, serviced, maintained and, where applicable, recovered, repaired, checked for leaks or decommissioned the equipment, including, where applicable, the number of its certificate and where the undertaking responsible for carrying out those operations is a legal person, both the identifying details of the undertaking and of the natural person performing the operations;

- (f) the dates and results of the checks carried out under Article 5(1), as well as the dates and results of any leak repairs;
- (g) if the equipment was decommissioned, the measures taken to recover and dispose of the gases.

2. Unless the records referred to in paragraph 1 are stored in a database set up by the competent authorities of the Member States, the following rules apply:

- (a) the operators referred to in paragraph 1 shall keep the records referred to in that paragraph for at least 5 years;
- (b) undertakings carrying out the activities referred to in paragraph 1, point (e), for operators shall keep copies of the records referred to in paragraph 1 for at least 5 years.

The records referred to in paragraph 1 shall be made available, upon request, to the competent authority of the Member State concerned or to the Commission.

3. For the purposes of Article 11(6), undertakings supplying fluorinated greenhouse gases listed in Annex I or in Section 1 of Annex II, shall establish records of relevant information on the purchasers of those fluorinated greenhouse gases that includes the following details:

- (a) the certificate number of each purchaser;

- (b) the respective quantities of the gases purchased.

The undertakings supplying the gases shall keep the records for at least 5 years and make those records available, upon request, to the competent authority of the Member State concerned or to the Commission.

4. For the purpose of Article 11(7), the undertakings which sell non-hermetically sealed equipment charged with fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II shall keep records of the equipment sold and of the certified undertakings that will carry out the installation. The undertakings selling the equipment referred to in Article 11(7) shall keep the records for a period of at least 5 years and shall make those records available, upon request, to the competent authority of the Member State concerned.
5. Undertakings that produce, including as by-product, place on the market, supply or receive substances listed in Section 1 of Annex I intended for exempted uses referred to in Article 16(2), shall keep records containing at least the following information, as applicable:
  - (a) name of the substance or mixture containing such substance;
  - (b) quantity produced, imported, exported, reclaimed or destroyed during the given calendar year;
  - (c) quantity supplied and received during the given calendar year, per individual supplier or receiver;

- (d) names and contact details of the suppliers or receivers;
- (e) quantity used, during the given calendar year and specifying the actual use; and
- (f) quantity stored on 1 January and 31 December of the given calendar year.

The undertakings shall keep the records referred to in the first subparagraph for at least 5 years after production, placing on the market, supply or receipt, and shall make them available, upon request, to the competent authorities of the Member State concerned or to the Commission. Those competent authorities and the Commission shall ensure the confidentiality of information contained in those records.

6. The Commission may, by means of an implementing act, determine the format of the records referred to in paragraphs 1, 3, 4 and 5 and specify how they should be established and kept. That implementing act shall be adopted in accordance with the examination procedure referred to in Article 34(2).

## *Article 8*

### *Recovery and destruction*

1. Operators of equipment that contain fluorinated greenhouse gases, not contained in foams, shall ensure that those substances are recovered and, after the decommissioning of the equipment, they are recycled, reclaimed or destroyed.

The recovery of those substances shall be carried out by natural persons who hold the relevant certificates provided for in Article 10.

2. The obligation laid down in paragraph 1 shall apply to operators of any of the following stationary equipment:
  - (a) the cooling circuits of refrigeration, air-conditioning equipment and heat pumps;
  - (b) equipment that contains fluorinated greenhouse gas-based solvents;
  - (c) fire protection equipment;
  - (d) electrical switchgear.
3. The obligation laid down in paragraph 1 shall apply to operators of any of the following mobile equipment:
  - (a) the cooling circuits of refrigeration units of refrigerated trucks and refrigerated trailers;
  - (b) the cooling circuits of refrigeration units of refrigerated light-duty vehicles and intermodal containers, including reefers, and train wagons;
  - (c) the cooling circuits of air-conditioning equipment and heat pumps in heavy duty vehicles, vans, non-road mobile machinery used in agriculture, mining and construction operations, trains, metros, trams and aircraft.

4. For the recovery of fluorinated greenhouse gases from air-conditioning equipment in motor vehicles which fall within the scope of Directive 2006/40/EC and from mobile equipment referred to in paragraph (3), points (b) and (c), only natural persons holding at least a training attestation in accordance with Article 10(1), second subparagraph, of this Regulation, shall be considered to be appropriately qualified.
5. The obligation laid down in paragraph 1 shall apply to operators of the mobile equipment under paragraph 3, points (b) and (c), from ... [3 years from the date of entry into force of this Regulation].
6. Any recovered fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II shall not be used for filling or refilling equipment unless the gas has been recycled or reclaimed.
7. An undertaking that uses a container with fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II shall, immediately prior to its disposal, arrange for the recovery of any residual gases to make sure they are recycled, reclaimed or destroyed.
8. From 1 January 2025, building owners and contractors shall ensure that, during renovation, refurbishing or demolition activities implying the removal of foam panels that contain foams with fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II, emissions are avoided to the extent possible by handling the foams or the gases contained therein in a way that ensures the destruction of those gases. In the case of recovery of those gases, the recovery shall be carried out only by appropriately qualified natural persons.

9. From 1 January 2025, building owners and contractors shall ensure that, during renovation, refurbishing or demolition activities implying the removal of foams in laminated boards installed in cavities or built-up structures that contain fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II, emissions are avoided to the extent possible by handling the foams or the gases contained therein in a way that ensures the destruction of those gases. In the case of recovery of those gases, the recovery shall be carried out only by appropriately qualified natural persons.

Where removal of the foams referred to in the first subparagraph is not technically feasible, the building owner or contractor shall draw up documentation providing evidence on the infeasibility of the removal in the specific case. Such documentation shall be kept for 5 years and shall be made available, upon request, to the competent authority of the Member State concerned or to the Commission.

10. Operators of products and equipment not listed in paragraph 2, 3, 8 or 9 that contain fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II shall arrange for the recovery of the gases, unless it can be established that it is not technically feasible or entails disproportionate costs. The operators shall ensure that the recovery is carried out by appropriately qualified natural persons, so that the gases are recycled, reclaimed or destroyed or shall arrange for their destruction without prior recovery.

The recovery of fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II from air-conditioning equipment in road vehicles outside the scope of Directive 2006/40/EC shall be carried out only by natural persons holding at least a training attestation in accordance with Article 10(1), second subparagraph, of this Regulation.

11. Fluorinated greenhouse gases listed in Section 1 of Annex I, and products and equipment containing such gases, shall be destroyed only by destruction technology that has been approved by the Parties to the Protocol.

Other fluorinated greenhouse gases for which the destruction technology has not been approved shall be destroyed only by destruction technology that complies with Union and national law on waste and where additional requirements under such law are met.

12. The Commission is empowered to adopt delegated acts in accordance with Article 32 to supplement this Regulation by establishing a list of products and equipment for which the recovery of fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II or destruction of products and equipment containing such gases without prior recovery of those gases shall be considered technically and economically feasible, specifying, if appropriate, the technology to be applied.
13. Member States shall promote the recovery, recycling, reclamation and destruction of fluorinated greenhouse gases listed in Annexes I and II.



*Article 9*  
*Extended producer responsibility schemes*

Without prejudice to existing extended producer responsibility schemes, Member States shall ensure that by 31 December 2027, the financing obligations for waste electrical and electronic equipment referred to in Articles 12 and 13 of Directive 2012/19/EU include the financing of the recovery, and the recycling, reclamation or destruction, of fluorinated greenhouse gases listed in Annexes I and II to this Regulation from the products and equipment, containing those gases, which are electrical and electronic equipment within the meaning of Directive 2012/19/EU and that have been placed on the market from ... [the date of entry into force of this Regulation].

Member States shall inform the Commission about the actions undertaken.

*Article 10*  
*Certification and training*

1. Natural persons shall be certified to carry out the following activities involving fluorinated greenhouse gases within the meaning of Article 4(7), Article 5(1) and Article 8(2), covering the fluorinated greenhouse gases specified therein, or involving relevant alternatives to fluorinated greenhouse gases, including natural refrigerants, where relevant:
  - (a) installation, maintenance or servicing, repair or decommissioning of the equipment listed in Article 5(2), points (a) to (f), and in Article 5(3), points (a) and (b);

- (b) leak checks of the equipment referred to in Article 5(2), points (a) to (e), and in Article 5(3), points (a) and (b);
- (c) recovery from equipment listed in Article 8(2), and in Article 8(3), point (a).

Natural persons shall hold at least a training attestation to carry out the following activities involving fluorinated greenhouse gases within the meaning of Article 4(7), Article 5(1) and Article 8(3), covering the fluorinated greenhouse gases specified therein, or involving relevant alternatives to fluorinated greenhouse gases, including natural refrigerants, where relevant:

- (a) maintenance or servicing, or repair of air-conditioning equipment in motor vehicles falling within the scope of Directive 2006/40/EC, and recovering of fluorinated greenhouse gases from such equipment;
- (b) recovering fluorinated greenhouse gases from equipment listed in Article 8(3), points (b) and (c), and in Article 8(10), second subparagraph;
- (c) maintenance or servicing, repair and leak checks of equipment listed in Article 5(3), point (c).

2. Legal persons shall be certified within the meaning of Article 4(7), covering the fluorinated greenhouse gases specified therein, to carry out the installation, maintenance or servicing, repair or decommissioning of the equipment listed in Article 5(2), points (a) to (e), and in Article 5(3), points (a) and (b), involving fluorinated greenhouse gases or relevant alternatives to fluorinated greenhouse gases, including natural refrigerants, where relevant.
3. Within 1 year following the entry into force of the implementing act referred to in paragraph 8, Member States shall establish or adapt certification programmes, including evaluation processes, and ensure that training on practical skills and theoretical knowledge is available for natural persons carrying out the activities referred to in paragraph 1. Member States shall also ensure that training programmes for obtaining training attestations in accordance with paragraph 1, second subparagraph, are available.
4. Within 1 year following the entry into force of the implementing act referred to in paragraph 8, Member States shall establish or adapt certification programmes for legal persons referred to in paragraph 2.
5. The certification programmes and training on practical skills and theoretical knowledge provided for in paragraph 3 shall cover the following:
  - (a) applicable regulations and technical standards;
  - (b) emission prevention;

- (c) recovery of fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II;
  - (d) safe handling of equipment of the type and size covered by the certificate;
  - (e) safe handling of equipment containing flammable or toxic gases or operating under high-pressure or involving other relevant risks;
  - (f) the measures for improving or maintaining the energy efficiency of equipment during installation, or maintenance or servicing.
6. The certification programmes and training on practical skills and theoretical knowledge provided for in paragraph 3 that concern aircraft shall be reflected in the process of updating the certification specifications and other detailed specifications, acceptable means of compliance and guidance material issued by the European Aviation Safety Agency pursuant to Article 76(3) and Article 115 of Regulation (EU) 2018/1139.
7. Certificates under the certification programmes referred to in paragraph 3 shall be subject to the condition that the applicant has successfully completed an evaluation process as referred to in that paragraph.

8. By ... [2 years from the date of entry into force of this Regulation], the Commission shall, by means of implementing acts, establish the minimum requirements for certification programmes and training attestations referred to in paragraphs 3 and 4 for the activities referred to in paragraph 1. Those minimum requirements shall specify, for each type of equipment referred to in paragraph 1, the required practical skills and theoretical knowledge, differentiating, where appropriate, between different activities to be covered, the arrangements of the certification or attestation as well as the conditions for mutual recognition of certificates and training attestations. The Commission shall, by means of implementing acts, adapt, where necessary, such minimum requirements. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).
9. Existing certificates and training attestations issued in accordance with Regulation (EU) No 517/2014 shall remain valid, in accordance with the conditions under which they were originally issued. By ... [3 years from the entry into force of this Regulation], Member States shall ensure that certified natural persons are required to participate in refreshment training courses or complete an evaluation process referred to in paragraph 3, at least every 7 years. Member States shall ensure that natural persons who hold a certificate or training attestation under Regulation (EU) No 517/2014 shall participate in such refreshment training courses or complete such evaluation processes for the first time no later than ... [5 years from the entry into force of this Regulation].

10. Within 1 year following the entry into force of the implementing act under paragraph 8, Member States shall notify the Commission of their certification and training programmes.

Member States 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.

11. The Commission may, by means of implementing acts, determine the format of the notification referred to in paragraph 10. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).
12. An undertaking shall only assign an activity referred to in paragraph 1 or 2 to another undertaking after verification that the latter holds the necessary certificates for the required activities referred to in paragraph 1 or 2, respectively.
13. Where the obligations under 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 certification and training, compliance may be achieved through the recognition of certificates issued in other Member States.

Member States which apply the first subparagraph shall inform the Commission. The Commission shall thereafter inform the other Member States.

14. This Article shall not prevent Member States from setting up further certification and training programmes in respect of equipment and activities other than those referred to in paragraph 1.

## **Chapter III**

### **Restrictions and control of use**

#### *Article 11*

##### *Restrictions on placing on the market and sale*

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

By way of derogation from the first subparagraph, the placing on the market of parts of products and equipment required for repair and servicing of existing equipment listed in Annex IV is allowed provided that the repair or servicing does not result in:

- (a) an increase in the capacity of the product or equipment;
- (b) an increase in the amount of fluorinated greenhouse gas contained in the product or equipment; or

- (c) a change in the type of fluorinated greenhouse gas used that would lead to an increase of the global warming potential of the fluorinated greenhouse gas used.

Products and equipment, including parts thereof, unlawfully placed on the market after the date referred to in the first subparagraph, shall not be subsequently used, supplied, or made available to other persons within the Union for payment or free of charge, or exported.

Re-export of such products and equipment is allowed when the non-compliance with this Regulation has been established prior to the release for free circulation of goods for the purpose of import, in accordance with the measures referred to in Article 23(12). Such products and equipment may only be stored or transported for subsequent disposal and for the recovery of the gas prior to the disposal pursuant to Article 8 or for their re-export.

The re-export of products and equipment for which the non-compliance with this Regulation has been established prior to their release for free circulation is allowed. In such cases, Article 22(3) shall not apply.

One year following the individual dates listed in Annex IV, the subsequent supply or making available to another person in the Union for payment or free of charge of products or equipment lawfully placed on the market prior to the date referred to in the first subparagraph shall be allowed only if evidence is provided that the product or equipment was placed lawfully on the market prior to that date.



2. The prohibition set out in paragraph 1, first subparagraph, shall not apply to equipment for which it has been established, pursuant to ecodesign requirements adopted under Directive 2009/125/EC, that its lifecycle CO<sub>2</sub> equivalent emissions would be lower than those of equivalent equipment which meets those relevant ecodesign requirements.
3. In addition to the placing on the market prohibitions set out in point 1 of Annex IV, the import, any subsequent supply or making available to other persons within the Union for payment or free of charge, use or export of non-refillable containers for fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II empty, or fully or partially filled, shall be prohibited. Such containers may only be stored or transported for subsequent disposal. This paragraph does not apply to containers for laboratory or analytical uses of fluorinated greenhouse gases.

The first subparagraph shall apply to non-refillable containers, namely:

- (a) containers which cannot be refilled without being adapted for that purpose; and
- (b) containers which could be refilled but are imported or placed on the market without provision having been made for their return for refilling.

4. Undertakings which place on the market refillable containers for fluorinated greenhouse gases shall produce a declaration of conformity that includes evidence confirming that there are binding arrangements in place for the return of those containers for the purpose of refilling, in particular identifying the relevant actors, their obligatory commitments and the relevant logistical arrangements. Those arrangements shall be made binding on the distributors of the refillable containers for fluorinated greenhouse gases to the end-user.

The undertakings referred to in the first subparagraph shall keep the declaration of conformity for a period of at least 5 years from the placing on the market of the refillable containers for fluorinated greenhouse gases and shall make that declaration available, upon request, to the competent authority of the Member State concerned or to the Commission. Suppliers of refillable containers for fluorinated greenhouse gases to end-users shall keep evidence of compliance with the binding arrangements referred to in the first subparagraph for a period of at least 5 years from supply to the end-user and shall make that evidence available, upon request, to the competent authority of the Member State concerned or to the Commission.

The Commission may, by means of implementing acts, determine the requirements for including the elements that are essential for the binding arrangements referred to in the first subparagraph of this paragraph in the declaration of conformity. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).

5. Following a substantiated request by a competent authority of a Member State and taking into account the objectives of this Regulation, the Commission may, exceptionally, by means of implementing acts, authorise an exemption for up to 4 years to allow the placing on the market of products and equipment listed in Annex IV, or, by way of derogation from Article 13(9), the putting into operation of new or extended electrical switchgear, including parts thereof, containing fluorinated greenhouse gases or whose functioning relies upon those gases, where it is demonstrated that:
- (a) for a specific product or a piece of equipment, or for a specific category of products or equipment, alternatives are not available, or cannot be used for technical or safety reasons; or
  - (b) the use of technically feasible and safe alternatives would entail disproportionate costs.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).

6. Only natural persons who hold a certificate required under Article 10(1), first subparagraph, point (a), or undertakings that employ natural persons who hold a certificate required under Article 10(1), first subparagraph, point (a), or a training attestation required under Article 10(1), second subparagraph, shall be allowed to purchase fluorinated greenhouse gases listed in Annex I or in Section 1 of Annex II for the purpose of carrying out the installation, maintenance or servicing, or repair of the equipment containing those gases, or whose functioning relies upon those gases, referred to in Article 5(2), points (a) to (f), and Article 5(3), points (a) and (b), and covered by Article 10(1), second subparagraph. Sellers shall sell or offer for sale, directly or indirectly, such gases exclusively to the undertakings referred to in this paragraph.

This paragraph shall not prevent non-certified undertakings that do not carry out the activities referred to in the first subparagraph from collecting, transporting or delivering fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II.

7. Non-hermetically sealed equipment charged with fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II may only be sold to an end user where evidence is provided that the installation is to be carried out by an undertaking certified in accordance with Article 10.

8. Only undertakings with an establishment within the Union, or that have appointed an only representative with an establishment within the Union that assumes full responsibility for compliance with this Regulation, shall be allowed to place on the market and subsequently supply bulk fluorinated greenhouse gases. The only representative may be the representative appointed pursuant to Article 8 of Regulation (EC) No 1907/2006.

## *Article 12*

### *Labelling and product and equipment information*

1. The following products and equipment that contain fluorinated greenhouse gases or whose functioning relies upon those gases shall only be placed on the market, subsequently supplied or made available to any other person, if they are labelled as:
- (a) refrigeration equipment;
  - (b) air-conditioning equipment;
  - (c) heat pumps;
  - (d) fire protection equipment;
  - (e) electrical switchgear;
  - (f) aerosol dispenser that contain fluorinated greenhouse gases, including metered dose inhalers;

- (g) all fluorinated greenhouse gas containers;
  - (h) fluorinated greenhouse gas-based solvents; or
  - (i) organic Rankine cycles.
2. Products or equipment that are subject to an exemption as referred to in Article 11(5) as well as products or equipment containing fluorinated greenhouse gases listed in Section 1 of Annex I that are subject to an exemption as referred to in Article 16(4) shall be labelled accordingly, specifying the end date of the exemption, and shall include a reference that those products or equipment may only be used for the purpose for which an exemption under that Article was granted.
3. The label required pursuant to paragraph 1 shall indicate the following information:
- (a) an indication that the product or equipment contains fluorinated greenhouse gases or that its functioning relies upon such gases;
  - (b) the accepted industry designation for the fluorinated greenhouse gases concerned or, if no such designation is available, the chemical name;
  - (c) from 1 January 2017, the quantity expressed in weight and in CO<sub>2</sub> equivalent of fluorinated greenhouse gases contained in the product or equipment, or the quantity of fluorinated greenhouse gases for which the equipment is designed, and the global warming potential of those gases.

The label shall indicate the following information, where applicable:

- (a) a reference that the fluorinated greenhouse gases are contained in hermetically sealed equipment;
- (b) a reference that the electrical switchgear has a tested leakage rate of less than 0,1 % per year as set out in the technical specification of the manufacturer.

Where products or equipment have been retrofitted and the fluorinated greenhouse gases have been changed, those products or equipment shall be relabelled with updated information as referred to in this paragraph.

4. The label required pursuant to paragraph 1 shall be clearly legible and indelible and shall be placed either:

- (a) adjacent to the service ports for charging or recovering the fluorinated greenhouse gas; or
- (b) on that part of the product or equipment that contains the fluorinated greenhouse gas.

The label shall be written in the official languages of the Member State in which the good is to be placed on the market, made available or supplied.

5. Foams and pre-blended polyols that contain fluorinated greenhouse gases listed in Annexes I and II shall not be placed on the market, made available or supplied 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 or pre-blended polyol contains fluorinated greenhouse gases. In the case of foam panels and laminated boards, that information shall be clearly and indelibly stated on the panels or boards.
6. Where relevant, refilled containers containing fluorinated greenhouse gases shall be relabelled with updated information as referred to in the first subparagraph of paragraph 3.
7. Containers containing reclaimed or recycled fluorinated greenhouse gases listed in Annexes I and II shall be labelled with an indication that the substance has been reclaimed or recycled. In the case of reclamation, information on the batch number and the name and address of the reclamation facility in the Union shall be included.
8. Containers containing fluorinated greenhouse gases listed in Annex I and placed on the market, made available or supplied for destruction shall be labelled with an indication that the contents of the container are for destruction only.
9. Containers containing fluorinated greenhouse gases listed in Annex I and intended for direct export shall be labelled with an indication that the contents of the container are for direct export only.



10. Containers containing fluorinated greenhouse gases listed in Annex I and placed on the market, made available or supplied for use in military equipment shall be labelled with an indication that the contents of the container are to be used for that purpose only.
11. Containers containing fluorinated greenhouse gases listed in Annexes I and II and placed on the market, made available or supplied for etching of semiconductor material or cleaning of chemicals vapour deposition chambers within the semiconductor manufacturing sector shall be labelled with an indication that the contents of the container are to be used for that purpose only.
12. Containers containing fluorinated greenhouse gases listed in Annex I and placed on the market, made available or supplied for feedstock use shall be labelled with an indication that the contents of the container are to be used as feedstock only.
13. Containers containing fluorinated greenhouse gases listed in Section 1 of Annex I and placed on the market, made available or supplied for producing metered dose inhalers for the delivery of pharmaceutical ingredients shall be labelled with an indication that the contents of the container are to be used for that purpose only.
14. In the case of containers containing fluorinated greenhouse gases listed in Section 1 of Annex I, the label referred to in paragraphs 8 to 12 shall include the indication ‘exempted from quota under Regulation (EU) 2024/... of the European Parliament and of the Council’<sup>+</sup>.

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<sup>+</sup> OJ: Please insert in the text the number of this Regulation (PE-CONS 60/23 (2022/0099(COD))).

In the absence of the labelling requirements referred to in the first subparagraph of this paragraph and in paragraphs 8 to 12, the hydrofluorocarbons shall be subject to the quota requirements pursuant to Article 16(1).

15. In the cases referred to in points 2(b), 4, 5(c), 7(b), (c) and (d), 8(b) to (e), 9(b) to (f), 11(c), 16, 17(a), (b) and (c), and 19(a) and (b) of Annex IV, the product or equipment shall be labelled with an indication that it shall be used only where required by the safety requirements or national safety standards, as applicable. Those requirements or standards shall be specified on the label. In the cases referred to in points 19 and 21 of Annex IV, the product or equipment shall be labelled with an indication that the product or equipment is to be used only where required by the medical application specified on the label.
16. The information referred to in paragraphs 3 and 5 shall be included in instruction manuals for the products and equipment concerned.

In the case of products and equipment that contain fluorinated greenhouse gases listed in Annexes I and II with a global warming potential of 150 or more, that information shall also be included in descriptions used for advertising.

17. The Commission may, by means of implementing acts, determine the format of the labels referred to in paragraph 1 and paragraphs 4 to 15 of this Article. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).

18. The Commission is empowered to adopt delegated acts in accordance with Article 32 to amend the labelling requirements set out in paragraphs 4 to 15 of this Article where appropriate in view of commercial or technological development.

### *Article 13*

#### *Control of use*

1. The use of SF<sub>6</sub> in magnesium die-casting and in the recycling of magnesium die-casting alloys shall be prohibited.
2. The use of SF<sub>6</sub> to fill vehicle tyres shall be prohibited.
3. The use of fluorinated greenhouse gases, with a global warming potential of 2 500 or more, for the maintenance or servicing of refrigeration equipment with a charge size of 40 tonnes of CO<sub>2</sub> equivalent or more, shall be prohibited. From 1 January 2025, the use of fluorinated greenhouse gases, with a global warming potential of 2 500 or more, for the maintenance or servicing of any refrigeration equipment shall be prohibited.

The prohibitions referred to in the first subparagraph shall not apply to military equipment or equipment intended for applications designed to cool products to temperatures below – 50 °C.

The prohibitions referred to in the first subparagraph shall not apply to the following categories of fluorinated greenhouse gases until 1 January 2030:

- (a) reclaimed fluorinated greenhouse gases listed in Annex I with a global warming potential of 2 500 or more used for the maintenance or servicing of existing refrigeration equipment, provided that containers containing those gases have been labelled in accordance with Article 12(7);
- (b) recycled fluorinated greenhouse gases listed in Annex I with a global warming potential of 2 500 or more used for the maintenance or servicing of existing refrigeration equipment, provided that they have been recovered from such equipment; such recycled gases shall only be used by the undertaking which carried out their recovery as part of maintenance or servicing or by the undertaking for which the recovery was carried out as part of maintenance or servicing.

The prohibitions referred to in the first subparagraph shall not apply to refrigeration equipment for which an exemption has been authorised in accordance with Article 11(5).

4. From 1 January 2026, the use of fluorinated greenhouse gases listed in Annex I, with a global warming potential of 2 500 or more, for the maintenance or servicing of air-conditioning equipment and heat pumps shall be prohibited.

The prohibition referred to in the first subparagraph shall not apply to the following categories of fluorinated greenhouse gases until 1 January 2032:

- (a) reclaimed fluorinated greenhouse gases listed in Annex I with a global warming potential of 2 500 or more used for the maintenance or servicing of existing air-conditioning equipment and heat pumps, provided that containers containing those gases have been labelled in accordance with Article 12(7);
- (b) recycled fluorinated greenhouse gases listed in Annex I with a global warming potential of 2 500 or more used for the maintenance or servicing of existing air-conditioning equipment and heat pumps, provided those gases have been recovered from such equipment; such recycled gases shall only be used by the undertaking which carried out their recovery as part of maintenance or servicing or by the undertaking for which the recovery was carried out as part of maintenance or servicing.

5. From 1 January 2032, the use of fluorinated greenhouse gases listed in Annex I, with a global warming potential of 750 or more, for the maintenance or servicing of stationary refrigeration equipment, with the exclusion of chillers, shall be prohibited.

The prohibition referred to in the first subparagraph shall not apply to military equipment or equipment intended for applications designed to cool products to temperatures below – 50 °C or equipment intended for applications designed to cool nuclear power stations.

The prohibition referred to in the first subparagraph shall not apply to the following categories of fluorinated greenhouse gases:

- (a) reclaimed fluorinated greenhouse gases listed in Annex I with a global warming potential of 750 or more used for the maintenance or servicing of existing stationary refrigeration equipment, with the exclusion of chillers, provided that containers containing those gases have been labelled in accordance with Article 12(7);
- (b) recycled fluorinated greenhouse gases listed in Annex I with a global warming potential of 750 or more used for the maintenance or servicing of existing stationary refrigeration equipment, with the exclusion of chillers, provided such gases have been recovered from such equipment; such recycled gases shall only be used by the undertaking which carried out their recovery as part of maintenance or servicing or by the undertaking for which the recovery was carried out as part of maintenance or servicing.

6. Following a substantiated request by a competent authority of a Member State and taking into account the objectives of this Regulation, the Commission shall assess the availability of reclaimed and recycled fluorinated greenhouse gases falling within the scope of paragraphs 4 and 5. Where the Commission's assessment points to a verified shortage of a reclaimed and recycled fluorinated greenhouse gas, the Commission may, exceptionally, by means of implementing acts, authorise an exemption from the prohibitions set out in paragraph 4 or 5, for up to 4 years, to the extent needed to address the shortage identified.

7. From 1 January 2035, the use of SF<sub>6</sub> for the maintenance or servicing of electrical switchgear equipment shall be prohibited unless it is reclaimed or recycled, except if it is proved that reclaimed or recycled SF<sub>6</sub>:

- (a) cannot be used on technical grounds; or
- (b) are not available in the event of an emergency repair situation.

In such cases, the user shall provide evidence, upon request, setting out the justification for use to the competent authority of the Member State concerned or to the Commission.

This paragraph shall not apply to military equipment.

8. The use of desflurane as an inhalation anaesthetic shall be prohibited from 1 January 2026, except where such use is strictly required and no other anaesthetic can be used on medical grounds. The healthcare institution shall keep evidence of the medical justification, and provide it, upon request, to the competent authority of the Member State concerned or to the Commission.

9. The putting into operation of the following electrical switchgear using, or whose functioning relies upon, fluorinated greenhouse gases in insulating or breaking medium shall be prohibited as follows:

- (a) from 1 January 2026, medium voltage electrical switchgear for primary and secondary distribution up to and including 24 kV;

- (b) from 1 January 2030, medium voltage electrical switchgear for primary and secondary distribution from more than 24 kV up to and including 52 kV;
  - (c) from 1 January 2028, high voltage electrical switchgear from 52 kV up to and including 145 kV and up to and including 50 kA short circuit current, with a global warming potential of 1 or more;
  - (d) from 1 January 2032, high voltage electrical switchgear of more than 145 kV or more than 50 kA short circuit current, with a global warming potential of 1 or more.
10. The taking out of operation of an electrical switchgear which is operating within the Union and the subsequent putting into operation of that electrical switchgear at a different site in the Union shall not be considered as putting into operation for the purposes of this Article.
11. By way of derogation from paragraph 9, the putting into operation of electrical switchgear using or whose functioning relies upon insulating or breaking medium with a global warming potential lower than 1 000 is allowed if, following a procurement procedure that considers the technical specificities of the equipment required for the specific use concerned one of the following situations applies:
- (a) during the first 2 years after the relevant dates referred to in paragraph 9, points (a) and (b), no bids or only bids offering equipment from one manufacturer of electrical switchgear with insulating or breaking medium not using fluorinated greenhouse gases were received;



- (b) during the first 2 years after the relevant dates referred to in paragraph 9, points (c) and (d), no bids or only bids offering equipment from one manufacturer of electrical switchgear with insulating or breaking medium with a global warming potential of less than one was received;
  - (c) after the 2-year period referred to in point (a), no bids were received offering equipment from one manufacturer of electrical switchgear with insulating or breaking medium not using fluorinated greenhouse gases; or
  - (d) after the 2-year period referred to in point (b), no bids were received offering equipment from one manufacturer of electrical switchgear with insulating or breaking medium with a global warming potential of less than one.
12. By way of derogation from paragraph 11, the putting into operation of electrical switchgear with insulating or breaking medium with a global warming potential of 1 000 or more is allowed if, following a procurement procedure that considers the technical specificities of the equipment required for the specific use concerned, no bid was received for electrical switchgear with insulating or breaking medium with a global warming potential of less than 1 000.

13. Paragraph 9 shall not apply to electrical switchgear for which it has been established pursuant to ecodesign requirements adopted under Directive 2009/125/EC that its life cycle CO<sub>2</sub> equivalent emissions would be lower than those of equivalent equipment which meets the relevant ecodesign requirements and would comply with the global warming potential limits in paragraph 9.
14. Paragraph 9 shall not apply where the operator can provide evidence that the order for the electrical switchgear has been placed before ... [the date of entry into force of this Regulation].
15. Paragraph 9 shall not apply where the devices to extend existing electrical switchgear that use fluorinated greenhouse gases with a lower global warming potential than the fluorinated greenhouse gases used in the existing electrical switchgear are not compatible with the existing electrical switchgear, and the use of those devices would require the replacement of the existing entire electrical switchgear.
16. Where a derogation listed in paragraph 10, 11, 12, 13, 14 or 15 applies, the operator shall keep documentation establishing the evidence for the derogation for at least 5 years and shall make it available, upon request, to the competent authority of the Member State concerned or to the Commission.
17. The operator shall notify the competent authority in the Member State where the electrical switchgear is put into operation when applying a derogation listed in paragraph 11, 12, 14 or 15.

18. Parts of equipment may be installed for repair or servicing of existing electrical switchgear provided that there is no change of the type of fluorinated greenhouse gas used that leads to an increase of the global warming potential of the fluorinated greenhouse gas used or an increase in the amount of fluorinated greenhouse gases contained in the equipment.
19. The putting into operation of any equipment or utilisation of any product listed in points 2(b), 4, 5(c), 7(b), (c) and (d), 8(b) to (e), 9(b) to (f), 11(c), 17(c) and 19(b) of Annex IV after the respective prohibition date specified in those points shall be prohibited unless the operator can provide evidence that:
  - (a) the relevant safety requirements at the particular location do not permit the installation of equipment using fluorinated greenhouse gases below the global warming potential value specified in the respective prohibitions; or
  - (b) the equipment was placed on the market before the relevant prohibition date set out in Annex IV.
20. The operator shall keep documentation establishing the evidence referred to in paragraph 19 for at least 5 years and shall make it available, upon request, to the competent authority of the Member State concerned or to the Commission.

## **Chapter IV**

### **Production schedule and reduction of the quantity of hydrofluorocarbons placed on the market**

#### *Article 14*

##### *Production of hydrofluorocarbons*

1. For the purposes of this Article, Article 15 and Annex V, the production of hydrofluorocarbons is the amount of hydrofluorocarbons produced minus the amount destroyed by technology approved by the Parties to the Protocol, and minus the amount entirely used as feedstock in the manufacture of other chemicals, but including hydrofluorocarbons generated as a by-product, unless not captured or unless that by-product is destroyed as part of or after the production process by the producer or handed over to another undertaking for destruction. No amount of reclaimed hydrofluorocarbons shall be considered in the calculation of the production of hydrofluorocarbons.
2. The production of hydrofluorocarbons shall be allowed to the extent that producers have been allocated production rights by the Commission in accordance with this Article.

3. Before 1 January 2025, the Commission shall, by means of implementing acts, allocate production rights on the basis of Annex V for producers that produced hydrofluorocarbons in 2022, based on data reported under Article 19 of Regulation (EU) No 517/2014. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).
4. The Commission may, by means of implementing acts, at the request of the competent authority of a Member State, amend the implementing acts referred to in paragraph 3 in order to allocate additional production rights to the producers referred to in paragraph 3 or any other undertakings established in the Union, unless the production limits of the Member State under the Protocol are exceeded. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).
5. In the absence of an implementing act being effective before 1 January 2025, producers may continue to produce hydrofluorocarbons without production rights being allocated. The hydrofluorocarbons produced during such period shall count towards the allocation of production rights once issued in accordance with the implementing act referred to in paragraph 3.

6. Three years following the adoption of the implementing acts referred to in paragraph 3, and every 3 years thereafter, the Commission shall review and, if needed, amend those implementing acts, taking into account the changes to the production rights pursuant to Article 15 during the preceding 3 years. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).

### *Article 15*

#### *Transfer and authorisation of production rights for industrial rationalisation*

1. For the purpose of industrial rationalisation within a Member State, producers may transfer totally or partially their production rights to any other undertaking in that Member State, provided that the calculated levels of production of Parties to the Protocol are respected. Transfers shall be approved by the Commission and the relevant competent authorities and carried out via the F-gas Portal.
2. For the purpose of industrial rationalisation between Member States, the Commission may, in agreement with both the competent authority of the Member State in which a producer's relevant production is situated, and the competent authority of the Member State in which excess calculated levels of production under the Protocol are available, authorise via the F-gas Portal that producer to exceed its production rights referred to in Article 14(3) by a specified amount, considering the conditions set out in the Protocol.

3. The Commission may, in agreement with both the competent authority of the Member State in which a producer's relevant production is situated and the competent authority of the third country Party concerned, authorise a producer to combine the production rights referred to in Article 14 with the calculated levels of production allowed to a producer in a third country Party under the Protocol and that producer's national law for the purpose of industrial rationalisation with a third country Party, provided that the combined production by the two producers do not lead to an exceedance of calculated levels of production of the two Parties to the Protocol and any relevant national law is respected.

#### *Article 16*

##### *Reduction of the quantity of hydrofluorocarbons placed on the market*

1. The placing on the market of hydrofluorocarbons shall be allowed only to the extent that producers and importers have been allocated quota by the Commission as set out in Article 17.

Producers and importers placing hydrofluorocarbons on the market shall not exceed the quota available to them at the moment of placing on the market.

2. Paragraph 1 shall not apply to hydrofluorocarbons that are:
  - (a) imported into the Union for destruction;

- (b) used by a producer as feedstock or supplied directly by a producer or an importer to undertakings for use as feedstock;
  - (c) supplied directly by a producer or an importer to undertakings for export out of the Union, not contained in products or equipment, where those hydrofluorocarbons are not subsequently made available to any other person within the Union, prior to export;
  - (d) supplied directly by a producer or an importer for use in military equipment;
  - (e) supplied directly by a producer or an importer to an undertaking using it for the etching of semiconductor material or the cleaning of chemicals vapour deposition chambers within the semiconductor manufacturing sector.
3. The Commission is empowered to adopt delegated acts in accordance with Article 32 to amend paragraph 2 and exclude from the quota requirement laid down in paragraph 1 hydrofluorocarbons in accordance with decisions of the Parties to the Protocol.



4. Following a substantiated request by a competent authority of a Member State and taking into account the objectives of this Regulation, and in light of any data provided by the European Medicines Agency, the Commission may, exceptionally, by means of implementing acts, authorise an exemption for up to 4 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 in the request that:
- (a) for those particular applications, products or equipment, alternatives are not available, or cannot be used for technical or safety reasons or risks to public health; and
  - (b) a sufficient supply of hydrofluorocarbons cannot be ensured without entailing disproportionate costs.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).

5. The emission of hydrofluorocarbons during production shall be considered as being placed on the market the year in which they occur.
6. This Article and Articles 17, 20 to 29 and 31 shall also apply to hydrofluorocarbons contained in pre-blended polyols.

*Article 17*  
*Determination of reference values and quota allocations*  
*for the placing on the market of hydrofluorocarbons*

1. By 31 October 2024 and at least every 3 years thereafter, the Commission shall determine reference values for producers and importers in accordance with Annex VII for the placing on the market of hydrofluorocarbons.

The Commission shall determine those reference values for all producers and importers that placed on the market hydrofluorocarbons during the previous 3 years, by means of an implementing act that determines reference values for all producers and importers. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).

2. An producer or importer may notify the Commission of a permanent succession or acquisition of the part of its business relevant to this Article that results in a change of the attribution of its reference values and those of its legal successor.

The Commission may request relevant documentation to that effect. The adjusted reference values shall be made accessible in the F-gas Portal.

3. By 1 June 2024 and by 1 April 2027 and at least every 3 years thereafter, producers and importers may make a declaration for receiving quota from the reserve referred in Annex VIII via the F-gas Portal.

4. By 31 December 2024 and every year thereafter, the Commission shall allocate quota for each producer and importer for placing on the market of hydrofluorocarbons, pursuant to Annex VIII. Quota shall be notified via the F-gas Portal to producers and importers.
5. The quota allocations shall be subject to the payment of the amount due which equals three euro for each tonne of CO<sub>2</sub> equivalent of quota to be allocated. Producers and importers shall be notified via the F-gas Portal of the total amount due for their calculated maximum quota allocation for the following calendar year and of the deadline for completing the payment. The Commission may, by means of implementing acts, determine the detailed arrangements for the payment of the amount due. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).

Producers and importers may pay only for a part of the calculated maximum quota allocation offered to them. In such a case, those producers and importers shall be allocated the quota corresponding to the payment made by the deadline referred to in the first subparagraph.

Until 31 December 2027, the Commission shall redistribute the quota for which a payment has not been made by the set deadline, free of charge, to only those producers and importers that have paid the total amount due for their calculated maximum quota allocation referred to in the first subparagraph and that have made a declaration as referred to in paragraph 3. That redistribution shall be made on the basis of each producer's or importer's share of the sum of all the maximum calculated quota offered to and paid for in full by those producers and importers. From 1 January 2028, the quota for which a payment has not been made by the set deadline shall be cancelled.

The Commission shall be authorised not to fully allocate the maximum quantity referred to in Annex VII or allocate additional quota, as contingency for implementation issues during the allocation period.

6. The Commission is empowered to adopt delegated acts in accordance with Article 32 to amend paragraph 5 of this Article as regards the amounts due for the quota allocation and the mechanism to allocate remaining quota, in order to compensate for inflation.
7. Every year, or more often following a substantiated request by a competent authority of a Member State, the Commission shall, after consultation of relevant stakeholders, assess the impact of the quota phase-down system laid down in Annex VII on the Union's heat pump market considering relevant factors in particular, the development of prices of fluorinated greenhouse gases listed in Section 1 of Annex I the growth rate of heat pumps still requiring such gases, the market uptake of alternative technology and the state of the heat pump deployment rate target provided under the REPowerEU Plan. The Commission shall include the conclusions from those assessments in the relevant Annual Activity Report on Climate Action.

Where the assessment demonstrates a severe shortage of fluorinated greenhouse gases listed in Section 1 of Annex I for the deployment of heat pumps which could endanger the attainment of the REPowerEU heat pump deployment targets, the Commission shall adopt delegated acts in accordance with Article 32 to amend Annex VII in order to allow the placing on the market of a quantity of fluorinated greenhouse gases listed in Annex I, in addition to the quota under Annex VII, respectively up to 4 410 247 tonnes of CO<sub>2</sub> equivalent, per year, for the period 2025-2026 and up to 1 425 536 tonnes of CO<sub>2</sub> equivalent, per year, for the period 2027-2029.

Where the Commission adopts a delegated act as referred to in the second subparagraph of this Article, the additional quota shall be distributed to producers and importers that have reported under Article 26, in the previous year, on heat pump use as one of the main categories of application in which the substance is used, following their request submitted via the F-gas Portal.

8. The revenue generated from the quota allocation amount shall constitute external assigned revenue in accordance with Article 21(5) of Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council<sup>26</sup>. That revenue shall be assigned to the LIFE programme and to Heading 7 of the multiannual financial framework (European Public Administration), to cover the costs of external staff working on the management of the quota allocation, IT services, and licensing systems for the purpose of implementation of this Regulation and for ensuring compliance with the Protocol. The revenue used to cover those costs shall not exceed the maximum annual amount of EUR 3 million. Any revenue remaining after covering these costs shall be entered into the general budget of the Union.

### *Article 18*

#### *Conditions for registration and receiving quota allocations*

1. Quota shall be allocated only to producers or importers that have an establishment within the Union, or which have appointed an only representative with an establishment within the Union that assumes the full responsibility for compliance with this Regulation and with the requirements of Title II of Regulation (EC) No 1907/2006. The only representative may be the same as the one appointed pursuant to Article 8 of Regulation (EC) No 1907/2006.

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<sup>26</sup> Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council of 18 July 2018 on the financial rules applicable to the general budget of the Union, amending Regulations (EU) No 1296/2013, (EU) No 1301/2013, (EU) No 1303/2013, (EU) No 1304/2013, (EU) No 1309/2013, (EU) No 1316/2013, (EU) No 223/2014, (EU) No 283/2014, and Decision No 541/2014/EU and repealing Regulation (EU, Euratom) No 966/2012 (OJ L 193, 30.7.2018, p. 1).

2. Only producers and importers that have experience in trading activities of chemicals or in servicing refrigeration, air-conditioning or fire protection equipment or heat pumps for 3 consecutive years prior to the quota allocation period, may submit a declaration referred to in Article 17(3) or receive a quota allocation on that basis, pursuant to Article 17(4). The producers and importers shall submit evidence to that effect to the Commission, upon request.
3. For the purpose of registration in the F-gas Portal, producers and importers shall provide a physical address where the undertaking is located and from where it conducts its business. Only one undertaking shall be registered under the same physical address.

For the purpose of submitting a quota declaration pursuant to Article 17(3) and receiving a quota allocation pursuant to Article 17(4), as well as for the purpose of determining reference values pursuant to Article 17(1), all undertakings that share the same beneficial owner shall be considered as a single undertaking. Only that single undertaking, which is the one registered first in the F-gas Portal unless indicated otherwise by the beneficial owner, shall be entitled to a reference value pursuant to Article 17(1) and to a quota allocation pursuant to Article 17(4).

## *Article 19*

### *Products or equipment pre-charged with hydrofluorocarbons*

1. Refrigeration and air-conditioning equipment, heat pumps and metered dose inhalers pre-charged with substances listed in Section 1 of Annex I shall not be placed on the market unless those substances with which the products or equipment have been pre-charged are accounted for within the quota system referred to in this Chapter.

The prohibition set out in the first subparagraph shall apply to such metered dose inhalers from 1 January 2025.

2. When placing on the market pre-charged products or equipment as referred to in paragraph 1, manufacturers and importers of products or equipment shall ensure that compliance with paragraph 1 is fully documented and shall draw up a declaration of conformity in this respect.

By drawing up the declaration of conformity, manufacturers and importers of products or equipment shall assume responsibility for compliance with this paragraph and paragraph 1.

Manufacturers and importers of products or equipment shall keep the documentation and the declaration of conformity for a period of at least 5 years from the placing on the market of those products or equipment and shall make them available, upon request, to the competent authority of the Member State concerned or to the Commission.



3. Where hydrofluorocarbons contained in the products or equipment referred to in paragraph 1 have not been placed on the market prior to the charging of the products or equipment, importers of those products or equipment shall ensure that, by 30 April 2025 and every year thereafter, the accuracy of the documentation, the declaration of conformity and the veracity of their report pursuant to Article 26(7) is confirmed, for the preceding calendar year, at a reasonable level of assurance by an independent auditor registered in the F-gas Portal.

The independent auditor shall be either:

- (a) accredited pursuant to Directive 2003/87/EC of the European Parliament and of the Council<sup>27</sup>; or
  - (b) accredited to verify financial statements in accordance with the legislation of the Member State concerned.
4. The Commission shall, by means of implementing acts, determine the detailed arrangements relating to the declaration of conformity referred to in paragraph 2, the verification by the independent auditor and the accreditation of auditors. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).

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<sup>27</sup> 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 and amending Council Directive 96/61/EC (OJ L 275, 25.10.2003, p. 32).

5. An importer of products or equipment referred to in paragraph 1, which has no establishment in the Union, shall appoint an only representative with an establishment within the Union that assumes the full responsibility of complying with this Regulation. The only representative may be the same as the one appointed pursuant to Article 8 of Regulation (EC) No 1907/2006.
6. This Article shall not apply to undertakings that placed on the market less than 10 tonnes of CO<sub>2</sub> equivalent of hydrofluorocarbons, per year, contained in the products or equipment referred to in paragraph 1.

#### *Article 20*

##### *F-gas Portal*

1. The Commission shall set up and ensure the operation of an electronic system for the management of the quota system, licensing requirements of imports and exports, and reporting obligations on fluorinated greenhouse gases (the ‘F-gas Portal’).
2. The Commission shall ensure the interconnection of the F-gas Portal with the EU Single Window Environment for Customs through the European Union Customs Single Window – Certificates Exchange System (EU CSW-CERTEX) established by Regulation (EU) 2022/2399.

3. Member States shall ensure the interconnection of their national single window environments for customs with the EU CSW-CERTEX for the purpose of exchanging information with the F-gas Portal.
4. Undertakings shall have a valid registration in the F-gas Portal prior to carrying out any of the following activities:
  - (a) the import or export of fluorinated greenhouse gases, and products and equipment containing fluorinated greenhouse gases, except in the case of temporary storage as defined in Article 5, point (17), of Regulation (EU) No 952/2013;
  - (b) submitting a declaration pursuant to Article 17(3);
  - (c) receiving a quota allocation for the placing on the market of hydrofluorocarbons in accordance with Article 17(4), or making or receiving a quota transfer in accordance with Article 21(1), or making or receiving an authorisation to use quota in accordance with Article 21(2), or delegating that authorisation to use quota in accordance with Article 21(3);
  - (d) supplying or receiving hydrofluorocarbons for the purposes listed in Article 16(2), points (a) to (e);
  - (e) carrying out all other activities that require reporting under Article 26;

- (f) receiving production rights pursuant to Article 14 and for making or receiving a transfer and an authorisation of production rights referred to in Article 15;
- (g) verifying reports referred to in Article 19(3) and Article 26(8).

Registration in the F-gas Portal shall be valid only once the Commission validates it and for as long as it is not suspended or revoked by the Commission or withdrawn by the undertaking.

- 5. A valid registration in the F-Gas Portal at the moment of import or export constitutes a licence required under Article 22.
- 6. The Commission shall, to the extent necessary, by means of implementing acts, clarify the rules of registration in the F-gas Portal to ensure the smooth functioning of the F-gas Portal and compatibility with the EU Single Window Environment for Customs. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).
- 7. The competent authorities, including customs authorities, of the Member States shall have access to the F-gas Portal to enable the implementation of the relevant requirements and controls. Access to the F-gas Portal by customs authorities shall be ensured via the EU Single Window Environment for Customs.

The competent authorities of Member States and the Commission shall ensure the confidentiality of the data included in the F-gas Portal.

The Commission shall make publicly available, no later than 3 months after the allocation is completed for a given year, the following:

- (a) a list of quota holders;
- (b) a list of the undertakings that are subject to the reporting requirements set out in Article 26.

8. Any requests by producers and importers to correct the information they recorded in the F-gas Portal concerning transfers of quota referred to in Article 21(1), authorisations to use quota referred to in Article 21(2) or delegations of authorisations referred to in Article 21(3), shall be communicated, with the consent of all undertakings involved in the transaction, to the Commission without undue delay and at the latest by 31 March of the year following that of the recording of the transfer of quota or the authorisation to use quota, or the delegation of the authorisation, as appropriate. The request shall be substantiated with evidence establishing that it concerns a clerical error.

Notwithstanding the first subparagraph, requests to correct data that negatively affect the entitlements of other producers and importers not involved in the underlying transaction shall be refused.

## *Article 21*

### *Transfer of quota and authorisation to use quota 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 17(1) may transfer in the F-gas Portal its quota allocation on the basis of Article 17(4), for all or any quantities, to another producer or importer in the Union or to another producer or importer which is represented in the Union by an only representative referred to in Article 18(1).

Quota that is transferred under the first subparagraph shall not be transferred a second time.

2. Any producer or importer for whom a reference value has been determined pursuant to Article 17(1), may authorise in the F-gas Portal an undertaking in the Union or represented in the Union by an only representative referred to in Article 19(5), to use all or part of its quota for the purpose of importing pre-charged equipment referred to in Article 19.

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.

3. Any undertaking receiving authorisations may delegate that authorisation to use quota received in accordance with paragraph 2 in the F-gas Portal to an undertaking for the purpose of importing pre-charged equipment referred to in Article 19. A delegated authorisation shall not be delegated a second time.
4. Transfers of quota, authorisations to use quota and delegations of authorisations carried out via the F-gas Portal shall only be valid if the receiving undertaking accepts it via the F-gas Portal.

## **Chapter V**

### **Trade**

#### *Article 22*

#### *Imports and exports*

1. The import and export of fluorinated greenhouse gases, and products and equipment containing those gases or whose functioning relies upon those gases shall be subject to the presentation of a valid licence to customs authorities issued by the Commission pursuant to Article 20(4) and (5), except in the case of temporary storage.

This paragraph does not apply to products and equipment that are personal effects.

2. Fluorinated greenhouse gases imported into the Union shall be considered as virgin gases.
3. From ... [the date one year from the entry into force of this Regulation] the export of foams, technical aerosols, stationary refrigeration and stationary air-conditioning equipment and stationary heat pumps as referred to in Annex IV that contain, or whose functioning relies upon, fluorinated greenhouse gases with a GWP of 1 000 or more shall be prohibited.

The prohibition set out in the first subparagraph shall not apply to military equipment or to products and equipment that can be placed on the market in the Union in accordance with Annex IV.

4. By way of derogation from paragraph 3, the Commission may, by means of implementing acts, for cases of an exceptional nature, following a substantiated request by the competent authority of the Member State concerned, and taking into account the objectives of this Regulation, authorise the export of the products and equipment referred to paragraph 3, where it is demonstrated that in view of the economic value and the expected remaining lifetime of the specific good, the prohibition of export would impose a disproportionate burden on the exporter. Such exports shall only be allowed if they are in accordance with the national law of the country of destination.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).



5. Undertakings with an establishment within the Union shall take all necessary measures to ensure that the export of refrigeration and air-conditioning equipment and of heat pumps, does not violate import restrictions that the importing state has notified under the Protocol.

### *Article 23*

#### *Trade controls*

1. Customs authorities and market surveillance authorities shall enforce the prohibitions and other restrictions set out in this Regulation with regard to imports and exports.
2. For the purposes of release for free circulation, the undertaking holding quota or authorisations to use quota as required under this Regulation, and registered in the F-gas Portal pursuant to Article 20 shall be the importer indicated in the customs declaration.

For the purpose of imports other than release for free circulation, the undertaking registered in the F-gas Portal pursuant to Article 20 shall be the declarant indicated in the customs declaration who is the holder of the authorisation for a special procedure other than transit, unless there is a transfer of rights and obligations pursuant to Article 218 of Regulation (EU) No 952/2013 to allow another person to be the declarant. In the case of transit procedure, the undertaking holding quota or authorisations to use quota as required under this Regulation shall be the holder of the procedure.

For the purposes of exports, the undertaking registered in the F-gas Portal pursuant to Article 20 shall be the exporter indicated in the customs declaration.

3. In cases of imports of fluorinated greenhouse gases, and products and equipment containing those gases or whose functioning relies upon those gases, the importer or, where not available, the declarant, indicated in the customs declaration or in the temporary storage declaration, and in cases of exports the exporter indicated in the customs declaration, shall provide to customs authorities the following information, where relevant, in the customs declaration:
  - (a) F-gas Portal registration identification number;
  - (b) Economic Operators Registration and Identification (EORI) number;
  - (c) net mass of bulk gases and of gases contained in products and equipment, and in parts thereof;
  - (d) commodity code under which the goods are classified;
  - (e) tonnes of CO<sub>2</sub> equivalent of bulk gases and of gases contained in products or equipment, and in parts thereof.

4. Customs authorities shall verify, in particular, whether in cases of release for free circulation the importer indicated in the customs declaration has quota or authorisations to use quota as required under this Regulation before releasing the goods for free circulation. Customs authorities shall ensure that in cases of imports the importer indicated in the customs declaration, or where not available, the declarant, and in cases of exports the exporter indicated in the customs declaration is registered in the F-gas Portal pursuant to Article 20.
5. Where relevant, customs authorities shall communicate information regarding the customs clearance of goods to the F-gas Portal via the EU Single Window Environment for Customs.
6. Importers of fluorinated greenhouse gases listed in Annex I and in Section 1 of Annex II in refillable containers shall make available to customs authorities at the time when the customs declaration related to the release for free circulation is submitted a declaration of conformity as referred to in Article 11(4), including evidence confirming the arrangements in place for the return of the container for the purpose of refilling.
7. Importers of fluorinated greenhouse gases shall make available to customs authorities at the time when the customs declaration related to the release for free circulation is submitted the evidence referred to in Article 4(6).

8. The declaration of conformity and the documentation referred to in Article 19(2) shall be made available to customs authorities at the time when the customs declaration related to the release for free circulation is submitted.
9. Customs authorities shall verify compliance with the rules on imports and exports set out in this Regulation, when carrying out the controls based on risk analysis in the context of the Customs Risk Management System and in accordance with Article 46 of Regulation (EU) No 952/2013. That risk analysis shall take into account, in particular, any available information on the likelihood of illegal trade in fluorinated greenhouse gases and the compliance history of the undertaking concerned.
10. Based on risk analysis, when carrying out physical customs controls on the substances, products and equipment covered by this Regulation, the customs authority shall, in particular, verify the following on imports and exports:
  - (a) that the goods presented correspond to those described in the licence and in the customs declaration;
  - (b) that the product or equipment presented does not fall under the prohibitions referred to in Article 11(1) and (3);
  - (c) that the goods are appropriately labelled in accordance with Article 12 before those goods are released for free circulation.

The importer or where the importer is not available, the declarant, or the exporter, as appropriate, shall make the licence available to customs authorities during the controls in accordance with Article 15 of Regulation (EU) No 952/2013.

11. Customs authorities or market surveillance authorities shall take all necessary measures to prevent attempts to import or export the substances, products and equipment covered by this Regulation that were already not allowed to enter or exit the territory.
12. Customs authorities shall confiscate or seize non-refillable containers as referred to in Article 11(3), second subparagraph, point (a), of this Regulation, that are prohibited by this Regulation for disposal by destruction in accordance with Articles 197 and 198 of Regulation (EU) No 952/2013 or shall inform the competent authorities in order to ensure the confiscation and seizure of such containers for disposal by destruction. Market surveillance authorities shall also withdraw or recall from the market such containers in accordance with Article 16 of Regulation (EU) 2019/1020.

In other cases, not referred to in the first subparagraph, of unlawful import, subsequent supply, or export carried out in violation of this Regulation, in particular where fluorinated greenhouse gases listed in Section 1 of Annex I are placed on the market in bulk or charged in products and equipment in violation of the quota and authorisation requirements set out in this Regulation, customs authorities or market surveillance authorities may take alternative measures. Such measures may include auctioning provided that the subsequent placing on the market is in accordance with this Regulation.

The export of fluorinated greenhouse gases listed in Section 1 of Annex I for which the non-compliance has been established after their release for free circulation, shall be prohibited.

13. Member States shall designate or approve customs offices or other places and shall specify the route to those offices and places, in accordance with Articles 135 and 267 of Regulation (EU) No 952/2013, for the presentation to customs authorities of the fluorinated greenhouse gases listed in Annex I to, and of the products and equipment referred to in Article 19 of this Regulation, at their entry into or at their exit from the customs territory of the Union. Controls shall be carried out by customs office personnel or by other authorised persons in accordance with national rules, who are knowledgeable about matters related to the prevention of illegal activities covered by this Regulation and have access to suitable equipment to carry out the relevant physical controls based on risk analysis.

Only the designated or approved customs offices or other places referred to in the first subparagraph shall be authorised to open or end a transit procedure of the gases and products or equipment covered by this Regulation.

## *Article 24*

### *Measures to monitor illegal trade*

1. On the basis of regular monitoring of trade in fluorinated greenhouse gases and assessment of the potential risks of illegal trade linked to the movements of fluorinated greenhouse gases, and products and equipment containing those gases or whose functioning relies upon those gases, the Commission is empowered to adopt delegated acts in accordance with Article 32 to:
  - (a) supplement this Regulation by specifying the criteria to be taken into account by the competent authorities of Member States when carrying out checks, in accordance with Article 29, to establish whether undertakings comply with their obligations under this Regulation;
  - (b) supplement this Regulation by specifying the requirements to be checked when monitoring, in accordance with Article 23, fluorinated greenhouse gases, and products and equipment containing those gases or whose functioning relies upon those gases, placed under temporary storage or under a customs procedure, including customs warehousing or the free zone procedure, or in transit through the customs territory of the Union;

- (c) amend this Regulation by adding tracing methodologies for fluorinated greenhouse gases placed on the market for the monitoring, in accordance with Article 22, of imports and exports of fluorinated greenhouse gases, and products and equipment containing those gases or whose functioning relies upon those gases, placed under temporary storage or under a customs procedure.
2. When adopting a delegated act under paragraph 1, the Commission shall take into account the environmental benefits and socio-economic impacts of the methodology to be established under points (a), (b) and (c) of that paragraph.

#### *Article 25*

##### *Trade with States or regional economic integration organisations and territories not covered by the Protocol*

1. Import and export of hydrofluorocarbons and of products and equipment containing hydrofluorocarbons or whose functioning relies upon those gases, from and to any State or regional economic integration organisation that has not agreed to be bound by the provisions of the Protocol applicable to those gases, shall be prohibited from 1 January 2028.



2. The Commission is empowered to adopt delegated acts in accordance with Article 32 to supplement this Regulation by establishing the rules applicable to the release for free circulation and export of products and equipment imported from and exported to any State or regional economic integration organisation within the meaning of paragraph 1, which were produced using hydrofluorocarbons but do not contain gases which can be positively identified as hydrofluorocarbons, as well as rules on the identification of such products and equipment. When adopting those delegating acts, the Commission shall take into account the relevant decisions taken by the Parties to the Protocol and, as regards the rules on the identification of such products and equipment, any periodic technical advice given to the Parties to the Protocol.
3. By way of derogation from paragraph 1, trade with any State or regional economic integration organisation within the meaning of paragraph 1 in hydrofluorocarbons, and in products and equipment containing hydrofluorocarbons or whose functioning relies upon those gases or which are produced by means of one or more such gases, may be authorised by the Commission, by means of implementing acts, to the extent that the State or regional economic integration organisation is determined by a meeting of the Parties to the Protocol pursuant to Article 4(8) of the Protocol to be in full compliance with the Protocol and has submitted data to that effect as specified in Article 7 of the Protocol. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).

4. Subject to any decision taken by the Parties to the Protocol, as referred to in paragraph 2, paragraph 1 shall apply to any territory not covered by the Protocol in the same way as such decisions apply to any State or regional economic integration organisation within the meaning of paragraph 1.
5. Where the authorities of a territory not covered by the Protocol are in full compliance with the Protocol and have submitted data to that effect as specified in Article 7 of the Protocol, the Commission may decide, by means of implementing acts, that some or all of the provisions of paragraph 1 of this Article shall not apply in respect of that territory. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).

## **Chapter VI**

### **Reporting and collection of emission data**

#### *Article 26*

#### *Reporting by undertakings*

1. By 31 March 2025 and every year thereafter, each producer, importer and exporter that produced, imported or exported hydrofluorocarbons or quantities exceeding one metric tonne or 100 tonnes of CO<sub>2</sub> equivalent of other fluorinated greenhouse gases during the preceding calendar year shall report to the Commission the data specified in Annex IX on each of those substances for that calendar year. This paragraph shall also apply to all undertakings receiving quota pursuant to Article 21(1).

By 31 March 2024 and every year thereafter, each producer or importer that has been allocated quota pursuant to Article 17(4), or to whom quota has been transferred pursuant to Article 21(1), but has not placed any quantities of hydrofluorocarbons on the market during the preceding calendar year, shall report to the Commission by submitting a ‘nil-report’.

2. By 31 March 2025 and every year thereafter, each undertaking that destroyed hydrofluorocarbons or quantities of other fluorinated greenhouse gases exceeding one metric tonne or 100 tonnes of CO<sub>2</sub> equivalent during the preceding calendar year shall report to the Commission the data specified in Annex IX on each of those substances for that calendar year.
3. By 31 March 2025, each undertaking that used 1 000 tonnes of CO<sub>2</sub> equivalent or more of fluorinated greenhouse gases listed in Annex I as feedstock during the preceding calendar year shall report to the Commission the data specified in Annex IX on each of those substances for that calendar year.
4. By 31 March 2025, each undertaking that placed 10 tonnes of CO<sub>2</sub> equivalent or more of hydrofluorocarbons, or 100 tonnes of CO<sub>2</sub> equivalent or more of other fluorinated greenhouse gases, contained in products or equipment on the market during the preceding calendar year shall report to the Commission the data specified in Annex IX on each of those substances for that calendar year.

5. By 31 March 2025 and every year thereafter, each undertaking that received any quantities of hydrofluorocarbons referred to in Article 16(2) shall report to the Commission the data specified in Annex IX on each of those substances for that calendar year.

By 31 March 2025 and every year thereafter, each producer or importer that placed on the market hydrofluorocarbons for the purpose of producing metered dose inhalers for the delivery of pharmaceutical ingredients shall report to the Commission the data specified in Annex IX. The manufacturers of such metered dose inhalers shall report to the Commission the data specified in Annex IX on the hydrofluorocarbons received.

6. By 31 March 2025 and every year thereafter, each undertaking that reclaimed quantities exceeding 1 metric tonne or 100 tonnes of CO<sub>2</sub> equivalent of fluorinated greenhouse gases shall report to the Commission the data specified in Annex IX on each of those substances for that calendar year.
7. By 30 April 2025, each importer of equipment that placed on the market pre-charged equipment as referred to in Article 19 containing at least 1 000 tonnes of CO<sub>2</sub> equivalent hydrofluorocarbons, and where those hydrofluorocarbons have not been placed on the market prior to the charging of the equipment, shall submit to the Commission a verification report issued pursuant to Article 19(3).

8. By 30 April 2025 and every year thereafter, each undertaking which, under paragraph 1, reports on the placing on the market of 1 000 tonnes of CO<sub>2</sub> equivalent or more of hydrofluorocarbons during the preceding calendar year shall, in addition, ensure that the veracity of its report is confirmed, at a reasonable level of assurance, by an independent auditor. The auditor shall be registered in the F-gas Portal and shall be accredited:

- (a) pursuant to Directive 2003/87/EC; or
- (b) to verify financial statements in accordance with the legislation of the Member State concerned.

The transactions referred to in Article 16(2), point (c), shall be verified regardless of the quantities involved.

The Commission may request an undertaking to ensure that the veracity of its report is confirmed by an independent auditor at a reasonable level of assurance, regardless of the quantities involved, where it is needed to confirm that undertaking's compliance with this Regulation.

The Commission may, by means of implementing acts, specify the details of the verification of reports and of the accreditation of auditors. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 34(2).

9. All reporting and verification referred to in this Article shall be carried out via the F-gas Portal.

The Commission may, by means of implementing acts, determine the format 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 34(2).

### *Article 27*

#### *Collection of emissions data*

Member States shall establish reporting systems for the relevant sectors referred to in this Regulation, with the objective of acquiring emissions data.

Member States shall, where appropriate, enable the recording of the information collected in accordance with Article 7 via a centralised electronic system.

The Commission may provide guidance for the design of the centralised electronic system by Member States.

## **Chapter VII**

### **Enforcement**

#### *Article 28*

#### *Cooperation and exchange of information*

1. Where required to ensure compliance with this Regulation, the competent authorities of each Member State, including customs authorities, market surveillance authorities, environmental authorities and any other competent authority with inspection functions, shall cooperate with each other, with the competent authorities of other Member States, with the Commission and, if necessary, with administrative authorities of third countries.

Where cooperation with customs authorities is needed to ensure a proper implementation of the Customs Risk Management System, competent authorities of Member States shall provide all necessary information to customs authorities in accordance with Article 47(2) of Regulation (EU) No 952/2013.

2. Where the customs authorities, the market surveillance authorities or any other competent authority of a Member State detect an infringement of this Regulation, that competent authority shall notify the environmental authority or, if not relevant, any other authority responsible for the enforcement of penalties in accordance with Article 31.

3. Member States shall ensure that their competent authorities are able to efficiently have access to and exchange between them any information necessary for the enforcement of this Regulation. Such information shall include customs related data, information on ownership and financial status, any violation of environmental law, as well as data recorded in the F-gas Portal.

The information referred to in the first subparagraph shall also be made available to competent authorities of other Member States and to the Commission when needed to ensure the enforcement of this Regulation. Competent authorities shall immediately inform the Commission of infringements of Article 16(1).

4. Competent authorities shall alert competent authorities of other Member States when they detect an infringement of this Regulation that may affect more than one Member State. Competent authorities shall, in particular, inform competent authorities of other Member States when they detect a relevant product on the market that does not comply with this Regulation, to enable that it is seized, confiscated, withdrawn or recalled from the market for disposal.

The Customs Risk Management System shall be used for the exchange of customs risk-related information.



Customs authorities shall also exchange any relevant information related to infringements of this Regulation in accordance with Council Regulation (EC) No 515/97<sup>28</sup> and shall request assistance from the other Member States and the Commission where necessary.

#### *Article 29*

##### *Obligation to carry out checks*

1. The competent authorities of Member States shall carry out checks to establish whether undertakings comply with their obligations under this Regulation.
2. The checks shall be carried out following a risk-based approach, which takes into consideration, in particular, the history of compliance of undertakings, the risk of non-compliance of a specific product with this Regulation, and any other relevant information received from the Commission, customs authorities, market surveillance authorities, environmental authorities and other authorities with inspection functions of the Member States, or from competent authorities of third countries.

The competent authorities of Member States shall also carry out checks when they are in possession of evidence or other relevant information, including based on substantiated concerns provided by third parties or the Commission, concerning potential non-compliance with this Regulation.

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<sup>28</sup> Council Regulation (EC) No 515/97 of 13 March 1997 on mutual assistance between the administrative authorities of the Member States and cooperation between the latter and the Commission to ensure the correct application of the law on customs and agricultural matters (OJ L 82, 22.3.1997, p. 1).

3. The checks referred to in paragraphs 1 and 2 shall include:
- (a) on-site visits of establishments with the appropriate frequency and verification of relevant documentation and equipment; and
  - (b) checks of online platforms pursuant to this paragraph.

Without prejudice to Regulation (EU) 2022/2065 of the European Parliament and of the Council<sup>29</sup>, where an online platform, falling within the scope of Chapter III, Section 4, of that Regulation, allows distance contracts to be concluded with undertakings offering fluorinated greenhouse gases or products and equipment that contain such gases, competent authorities of Member States shall verify whether the undertaking, the fluorinated greenhouse gases, the products or the equipment offered comply with the requirements laid down in this Regulation. Competent authorities of Member States shall inform and cooperate with the Commission and with the relevant competent authorities referred to in Article 49 of Regulation (EU) 2022/2065 for the purpose of ensuring compliance with that Regulation.

Checks shall be carried out without prior warning given to the undertaking, except where prior notification is necessary in order to ensure the effectiveness of the checks. Member States shall ensure that undertakings provide the competent authorities with all necessary assistance to enable those authorities to carry out the checks provided for in this Article.

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<sup>29</sup> Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market For Digital Services and amending Directive 2000/31/EC (Digital Services Act) (OJ L 277, 27.10.2022, p. 1).

4. The competent authorities of Member States shall keep records of the checks, indicating in particular their nature and results, and of the measures taken in the event of non-compliance. Records of all checks shall be kept for at least 5 years.
5. At the request of another Member State, a Member State may carry out checks or other formal investigations of undertakings suspected of being engaged in the illegal movement of gases, products or equipment covered by this Regulation and which are operating on the territory of that Member State. The requesting Member State shall be informed about the result of the check or of the investigation.
6. In carrying out the tasks assigned to it by this Regulation, the Commission may request all necessary information from competent authorities of Member States and from undertakings. When requesting information from an undertaking, the Commission shall at the same time forward a copy of the request to the competent authority of the Member State within the territory of which the undertaking's seat is situated.
7. The Commission shall take appropriate steps to promote an adequate exchange of information and cooperation between competent authorities of Member States and between those competent authorities and the Commission. The Commission shall take appropriate steps to protect the confidentiality of information obtained under this Article.

### *Article 30*

#### *Reporting of breaches and protection of persons reporting such breaches*

Directive (EU) 2019/1937 shall apply to the reporting of breaches of this Regulation and the protection of persons reporting such breaches.

## **Chapter VIII**

### **Penalties, consultation forum, committee procedure and exercise of the delegation**

### *Article 31*

#### *Penalties*

1. Without prejudice to the obligations of Member States under Directive 2008/99/EC of the European Parliament and of the Council<sup>30</sup>, Member States shall lay down the rules on penalties applicable to infringements of this Regulation and shall take all measures necessary to ensure that those penalties are implemented. Before 1 January 2026, Member States shall notify the Commission of those rules and of those measures and shall notify it, without delay, of any subsequent amendment affecting them.

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<sup>30</sup> Directive 2008/99/EC of the European Parliament and of the Council of 19 November 2008 on the protection of the environment through criminal law (OJ L 328, 6.12.2008, p. 28).

2. The penalties shall be effective, proportionate and dissuasive, and shall be determined while having due regard to the following, as applicable:
  - (a) the nature and gravity of the infringement;
  - (b) the human population or the environment affected by the infringement, taking into account the need to ensure a high level of protection of human health and the environment;
  - (c) any previous infringements of this Regulation by the undertaking held responsible;
  - (d) the financial situation of the undertaking held responsible.
3. The penalties shall include:
  - (a) administrative financial penalties in accordance with paragraph 4; however, Member States may also, or alternatively, use criminal penalties, provided that they are equivalently effective, proportionate and dissuasive as the administrative financial penalties;
  - (b) confiscation or seizure, or withdrawal or removal from the market, or taking possession by the competent authorities of Member States of illegally obtained goods;

(c) temporary prohibition from using, producing, importing, exporting or placing on the market the fluorinated greenhouse gases or products and equipment containing fluorinated greenhouse gases or whose functioning relies upon them, in the event of a serious infringement or of repeated infringements.

4. Administrative financial penalties referred to in paragraph 3, point (a), shall be proportionate to the environmental damage, where applicable, and effectively deprive those responsible of the economic benefits derived from their infringements. The level of administrative financial penalties shall gradually increase for repeated infringements.

In the case of unlawful production, import, export, placing on the market or use of fluorinated greenhouse gases, or of products and equipment containing those gases or whose functioning relies upon those gases, the maximum amount of the administrative financial penalty shall be at least five times the market value of the gases or products and equipment concerned. Where such infringements are repeated within a five-year period, the maximum amount of the administrative financial penalty shall be at least eight times the market value of the gases or products and equipment concerned.

5. 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 17(4), or transferred to them in accordance with Article 21(1), 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 17(4) 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. The reductions shall be recorded in the F-gas Portal.

### *Article 32*

#### *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 Article 8(12), Article 12(18), Article 16(3), Article 17(6), Article 24(1), Article 25(2), Article 35(1) and Article 35(2) shall be conferred on the Commission for an indeterminate period of time from ... [the date of entry into force of this Regulation].

3. The delegation of power referred to in Article 8(12), Article 12(18), Article 16 (3), Article 17(6), Article 24(1), Article 25(2), Article 35(1) and Article 35(2) may be revoked at any time by the European Parliament or by the Council. A decision to revoke 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 at a later date specified therein. It shall not affect the validity of any delegated acts already in force.
4. Before adopting a delegated act, the Commission shall consult experts designated by each Member State in accordance with the principles laid down in the Interinstitutional Agreement of 13 April 2016 on Better Law-Making.
5. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.
6. A delegated act adopted pursuant to Article 8(12), Article 12(18), Article 16(3), Article 17(6), Article 24(1), Article 25(2), Article 35(1) and Article 35(2) shall enter into force only if no objection has been expressed either by the European Parliament or by 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 33*  
*Consultation Forum*

The Commission shall establish a Consultation Forum for providing advice and expertise in relation to the implementation of this Regulation. The rules of procedure of the Consultation Forum shall be established by the Commission and shall be published. The Consultation Forum shall, where relevant, involve the European Medicines Agency.

*Article 34*  
*Committee procedure*

1. The Commission shall be assisted by a committee on fluorinated greenhouse gases. 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.

## **Chapter IX**

### **Transitional and final provisions**

#### *Article 35*

##### *Review*

1. The Commission is empowered to adopt delegated acts in accordance with Article 32 to amend Annexes I, II, III and VI as regards the global warming potential of the gases listed therein, where it is necessary in the light of new Assessment Reports adopted by the IPCC or new reports of the Scientific Assessment Panel (SAP) of the Protocol.
2. The Commission is empowered to adopt delegated acts in accordance with Article 32 to amend the lists of gases in Annexes I, II and III, where it has been found by the SAP or by another authority of equivalent stature that such gases have a significant impact on the climate and where such gases are exported, imported, produced or placed on the market in significant quantities.
3. By 1 July 2027, 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 mobile refrigeration and mobile air-conditioning equipment, and where appropriate, put forward a legislative proposal to the European Parliament and to the Council to amend the list set out in Annex IV.

4. By 1 July 2028, the Commission shall publish a report assessing the impact of this Regulation on the health sector, particularly the availability of metered dose inhalers for the delivery of pharmaceutical ingredients, as well as the impact on the market of cooling equipment used in conjunction with batteries.
5. By 1 January 2030, the Commission shall publish a report on the effects of this Regulation.

The report shall include an evaluation of the following:

- (a) whether cost-effective, technically feasible, energy-efficient, sufficiently available and reliable alternatives exist, which make the replacement of fluorinated greenhouse gases possible in the products and equipment listed in Annex IV covered by prohibitions that have not yet become applicable at the time of the evaluation, especially products and equipment subject to full fluorinated greenhouse gas prohibitions, including ‘split’ air conditioners and heat pumps;
- (b) international developments relevant for the shipping sector and the potential expansion of the scope of containment requirements to fluorinated greenhouse gases contained in refrigeration and air-conditioning equipment of ships;

- (c) the potential expansion of the scope of the export prohibition referred to in Article 22(3), taking into account, inter alia, the potential increased global availability of products and equipment containing low GWP fluorinated greenhouse gases or natural alternatives and developments under the Protocol;
- (d) the potential inclusion in the quota requirement laid down in Article 16(1), of the hydrofluorocarbons for purposes listed in Article 16(2), in particular hydrofluorocarbons supplied directly by a producer or an importer to an undertaking using it for etching of semiconductor material or the cleaning of chemicals vapour deposition chambers within the semiconductor manufacturing sector;
- (e) the risk of excessive reduction of competition in the market due to the prohibitions and related exceptions under Article 13(9), in particular those on high voltage electrical switchgear of more than 145 kV or more than 50 kA short circuit current.

The Commission shall submit, if appropriate, a legislative proposal, which may include amendments to Annex IV, to the European Parliament and Council.

6. Before 1 January 2040, the Commission shall review the needs for hydrofluorocarbons in the sectors where they are still used and the phase-out of HFC quota set out in Annex VII for the year 2050, in particular, taking into account technological developments, the availability of alternatives to hydrofluorocarbons for the relevant applications and the Union's climate targets. Where appropriate, the review shall be accompanied by a legislative proposal to the European Parliament and Council.
7. The European Scientific Advisory Board on Climate Change, established under Article 10a of Regulation (EC) No 401/2009 of the European Parliament and of the Council<sup>31</sup>, may, on its own initiative, provide scientific advice and issue reports on the coherence of this Regulation with the objectives of Regulation (EU) 2021/1119 and the Union's international commitments under the Paris Agreement.

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<sup>31</sup> Regulation (EC) No 401/2009 of the European Parliament and of the Council of 23 April 2009 on the European Environment Agency and the European Environment Information and Observation Network (OJ L 126, 21.5.2009, p. 13).

*Article 36*  
*Amendment to Directive (EU) 2019/1937*

In Part I, Section E, point 2, of the Annex to Directive (EU) 2019/1937, the following point is added:

- ‘(vi) Regulation (EU) 2024/... of the European Parliament and of the Council of ... on fluorinated greenhouse gases, amending Directive (EU) 2019/1937 and repealing Regulation (EU) No 517/2014 (OJ L, ..., ELI: ...)<sup>+</sup>’.

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<sup>+</sup> OJ: Please insert in the text the number, date, title and OJ reference of the Regulation contained in document PE/CONS 60/23 (2022/0099(COD)).

*Article 37*

*Repeal and transitional provisions*

1. Regulation (EU) No 517/2014 is repealed.
2. Article 12 of Regulation (EU) No 517/2014 as applicable on ... [one day before the date of entry into force of this Regulation] shall continue to apply until 31 December 2024.
3. Article 14(2), second subparagraph, and Article 19 of Regulation (EU) No 517/2014 as applicable on ... [one day before the date of entry into force of this Regulation] shall continue to apply with regard to the reporting period from 1 January 2023 to 31 December 2023.
4. The quota allocated in accordance with Article 16(5) of Regulation (EU) No 517/2014 shall remain valid for the purpose of compliance with this Regulation. The exemption of hydrofluorocarbons referred to in Article 15(2), second subparagraph, point (f), of Regulation (EU) No 517/2014 shall apply until 31 December 2024.
5. References to the repealed Regulation shall be construed as references to this Regulation and shall be read in accordance with the correlation table in Annex X.

*Article 38*

*Entry into force and application*

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

Article 12 and Article 17(5) shall apply from 1 January 2025.

Article 20(2), Article 20(3) and Article 23(5) shall apply from 3 March 2025 for release for free circulation referred to in Article 201 of Regulation (EU) No 952/2013 and for all other import procedures and for export.

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

Done at Strasbourg,

*For the European Parliament*  
*The President*

*For the Council*  
*The President*



## ANNEX I

Fluorinated greenhouse gases referred to in Article 2, point (a)<sup>1</sup>  
– hydrofluorocarbons, perfluorocarbons and other fluorinated compounds

Substance			GWP <sup>(2)</sup>	20 years- GWP <sup>(3)</sup> for information purposes only
Industrial designation	Chemical name (Common name)	Chemical formula		
Section 1: Hydrofluorocarbons (HFCs)				
HFC-23	trifluoromethane (fluoroform)	CHF <sub>3</sub>	14 800	12 400
HFC-32	difluoromethane	CH <sub>2</sub> F <sub>2</sub>	675	2 690
HFC-41	Fluoromethane (methyl fluoride)	CH <sub>3</sub> F	92	485
HFC-125	pentafluoroethane	CHF <sub>2</sub> CF <sub>3</sub>	3 500	6 740
HFC-134	1,1,2,2-tetrafluoroethane	CHF <sub>2</sub> CHF <sub>2</sub>	1 100	3 900
HFC-134a	1,1,1,2-tetrafluoroethane	CH <sub>2</sub> FCF <sub>3</sub>	1 430	4 140
HFC-143	1,1,2-trifluoroethane	CH <sub>2</sub> FCHF <sub>2</sub>	353	1 300
HFC-143a	1,1,1-trifluoroethane	CH <sub>3</sub> CF <sub>3</sub>	4 470	7 840
HFC-152	1,2-difluoroethane	CH <sub>2</sub> FCH <sub>2</sub> F	53	77,6
HFC-152a	1,1-difluoroethane	CH <sub>3</sub> CHF <sub>2</sub>	124	591
HFC-161	Fluoroethane (ethyl fluoride)	CH <sub>3</sub> CH <sub>2</sub> F	12	17,4
HFC-227ea	1,1,1,2,3,3,3-heptafluoropropane	CF <sub>3</sub> CHFCF <sub>3</sub>	3 220	5 850
HFC-236cb	1,1,1,2,2,3-hexafluoropropane	CH <sub>2</sub> FCF <sub>2</sub> CF <sub>3</sub>	1 340	3 750
HFC-236ea	1,1,1,2,3,3-hexafluoropropane	CHF <sub>2</sub> CHFCF <sub>3</sub>	1 370	4 420
HFC-236fa	1,1,1,3,3,3-hexafluoropropane	CF <sub>3</sub> CH <sub>2</sub> CF <sub>3</sub>	9 810	7 450
HFC-245ca	1,1,2,2,3-pentafluoropropane	CH <sub>2</sub> FCF <sub>2</sub> CHF <sub>2</sub>	693	2 680
HFC-245fa	1,1,1,3,3-pentafluoropropane	CHF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>	1 030	3 170
HFC-365mfc	1,1,1,3,3-pentafluorobutane	CF <sub>3</sub> CH <sub>2</sub> CF <sub>2</sub> CH <sub>3</sub>	794	2 920
HFC-43-10mee	1,1,1,2,2,3,4,5,5,5 decafluoropentane	CF <sub>3</sub> CHFCHFCF <sub>2</sub> CF <sub>3</sub>	1 640	3 960

<sup>1</sup> As per Article 2, point (a), mixtures containing the substances listed in this Annex are considered as fluorinated greenhouse gases covered by this Regulation.

<sup>2</sup> Based on the Fourth Assessment Report adopted by the Intergovernmental Panel on Climate Change, unless otherwise indicated.

<sup>3</sup> Based on the Sixth Assessment Report adopted by the Intergovernmental Panel on Climate Change, unless otherwise indicated.

Substance			GWP 100 <sup>(3)</sup>	GWP 20 <sup>(3)</sup>
Industrial designation	Chemical name (Common name)	Chemical formula		
Section 2: Perfluorocarbons (PFCs)				
PFC-14	tetrafluoromethane (perfluoromethane, carbon tetrafluoride)	CF <sub>4</sub>	7 380	5 300
PFC-116	Hexafluoroethane (perfluoroethane)	C <sub>2</sub> F <sub>6</sub>	12 400	8 940
PFC-218	octafluoropropane (perfluoropropane)	C <sub>3</sub> F <sub>8</sub>	9 290	6 770
PFC-3-1-10 (R-31-10)	decafluorobutane (perfluorobutane)	C <sub>4</sub> F <sub>10</sub>	10 000	7 300
PFC-4-1-12 (R-41-12)	dodecafluoropentane (perfluoropentane)	C <sub>5</sub> F <sub>12</sub>	9 220	6 680
PFC-5-1-14 (R-51-14)	tetradecafluorohexane (perfluorohexane)	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>3</sub>	8 620	6 260
PFC-c-318	octafluorocyclobutane (perfluorocyclobutane)	C-C <sub>4</sub> F <sub>8</sub>	10 200	7 400
PFC-9-1-18 (R-91-18)	Perfluorodecalin	C <sub>10</sub> F <sub>18</sub>	7 480	5 480
PFC-4-1-14 (R-41-14)	perfluoro-2-methylpentane	CF <sub>3</sub> CFCF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>3</sub> (I-C <sub>6</sub> F <sub>14</sub> )	7 370 <sup>(4)</sup>	(*)
Section 3: Other (per)fluorinated compounds and fluorinated nitriles				
	sulphur hexafluoride	SF <sub>6</sub>	24 300	18 200
	Heptafluoroisobutyronitrile (2,3,3,3-tetrafluoro-2- (trifluoromethyl)- propanenitrile)	Iso-C <sub>3</sub> F <sub>7</sub> CN	2 750	4 580

<sup>4</sup> Droste et al. (2019). Trends and Emissions of Six Perfluorocarbons in the Northern and Southern Hemisphere. Atmospheric Chemistry and Physics.  
<https://acp.copernicus.org/preprints/acp-2019-873/acp-2019-873.pdf>

\* Global warming potential not yet available.

## ANNEX II

Fluorinated greenhouse gases referred to in Article 2, point (a)<sup>1</sup>  
– unsaturated hydro(chloro)fluorocarbons, fluorinated substances  
used as inhalation anaesthetics and other fluorinated substances

Substance		GWP <sup>(2)</sup>	20 years- GWP <sup>(2)</sup> for information purposes only
Common name/industrial designation	Chemical formula		
Section 1: Unsaturated hydro(chloro)fluorocarbons			
HCFC-1224yd	CF <sub>3</sub> CF=CHCl	0,06 <sup>(3)</sup>	(*)
Trans-1,2-difluoroethylene (HFC-1132) and isomers	CHF=CHF	>1	(*)
1,1-difluoroethylene (HFC-1132a)	CH <sub>2</sub> =CF <sub>2</sub>	0,052	0,189
1,1,1,2,3,4,5,5,5(or1,1,1,3,4,4,5,5,5)- nonafluoro-4(or2)- (trifluoromethyl)pent-2-ene	CF <sub>3</sub> CF=CFCFCF <sub>3</sub> CF <sub>3</sub> or CF <sub>3</sub> CF <sub>3</sub> C=CFCF <sub>2</sub> CF <sub>3</sub>	1 <sup>Fn(4)</sup>	(*)
HFC-1234yf	CF <sub>3</sub> CF = CH <sub>2</sub>	0,501	1,81
HFC-1234ze and isomers	CHF = CHCF <sub>3</sub>	1,37	4,94
HFC-1336mzz(E)	(E)-CF <sub>3</sub> CH = CHCF <sub>3</sub>	17,9	64,3
HFC-1336mzz(Z)	(Z)-CF <sub>3</sub> CH = CHCF <sub>3</sub>	2,08	7,48
HCFC-1233zd and isomers	CF <sub>3</sub> CH = CHCl	3,88	14
HCFC-1233xf	CF <sub>3</sub> CCl = CH <sub>2</sub>	1 <sup>Fn(4)</sup>	(*) <del>Error!</del> <del>Bookmark not defined.</del>

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- <sup>1</sup> As per Article 2, point (a), mixtures containing the substances listed in this Annex are considered as fluorinated greenhouse gases covered by this Regulation.
- <sup>2</sup> Based on the Sixth Assessment Report adopted by the Intergovernmental Panel on Climate Change, unless otherwise indicated.
- <sup>3</sup> Tokuhashi, K., T. Uchimaru, K. Takizawa, & S. Kondo (2018): Rate Constants for the Reactions of OH Radical with the (E)/(Z) Isomers of CF<sub>3</sub>CF=CHCl and CHF<sub>2</sub>CF=CHCl. The Journal of Physical Chemistry A 122:3120–3127.
- \* Global warming potential not yet available.
- <sup>4</sup> Default value, global warming potential not yet available.

Substance		GWP <sup>(2)</sup>	20 years-GWP <sup>(2)</sup> for information purposes only
Common name/industrial designation	Chemical formula		
Section 2: fluorinated substances used as inhalation anaesthetics			
HFE-347mmz1 (sevoflurane) and isomers	(CF <sub>3</sub> ) <sub>2</sub> CHOCH <sub>2</sub> F	195	702
HCFE-235ca2 (enflurane) and isomers	CHF <sub>2</sub> OCF <sub>2</sub> CHFCI	654	2 320
HCFE-235da2 (isoflurane) and isomers	CHF <sub>2</sub> OCHClCF <sub>3</sub>	539	1 930
HFE-236ea2 (desflurane) and isomers	CHF <sub>2</sub> OCHF <sub>2</sub> CF <sub>3</sub>	2 590	7 020
Section 3: other fluorinated substances			
nitrogen trifluoride	NF <sub>3</sub>	17 400	13 400
sulfuryl fluoride	SO <sub>2</sub> F <sub>2</sub>	4 630	7 510

### ANNEX III

Fluorinated greenhouse gases referred to in Article 2, point (a)<sup>1</sup>

– fluorinated ethers, ketones and alcohols and other fluorinated compounds

Substance		GWP <sup>(2)</sup>	20 years- GWP <sup>(2)</sup> for information purposes only
Common name/industrial designation	Chemical formula		
Section 1: Fluorinated ethers, ketones and alcohols			
HFE-125	CHF <sub>2</sub> OCF <sub>3</sub>	14 300	13 500
HFE-134 (HG-00)	CHF <sub>2</sub> OCHF <sub>2</sub>	6 630	12 700
HFE-143a	CH <sub>3</sub> OCF <sub>3</sub>	616	2 170
HFE-245cb2	CH <sub>3</sub> OCF <sub>2</sub> CF <sub>3</sub>	747	2 630
HFE-245fa2	CHF <sub>2</sub> OCH <sub>2</sub> CF <sub>3</sub>	878	3 060
HFE-254cb2	CH <sub>3</sub> OCF <sub>2</sub> CHF <sub>2</sub>	328	1 180
HFE-347 mcc3 (HFE-7000)	CH <sub>3</sub> OCF <sub>2</sub> CF <sub>2</sub> CF <sub>3</sub>	576	2 020
HFE-347pcf2	CHF <sub>2</sub> CF <sub>2</sub> OCH <sub>2</sub> CF <sub>3</sub>	980	3 370
HFE-356pcc3	CH <sub>3</sub> OCF <sub>2</sub> CF <sub>2</sub> CHF <sub>2</sub>	277	995
HFE-449s1 (HFE-7100)	C <sub>4</sub> F <sub>9</sub> OCH <sub>3</sub>	460	1 620
HFE-569sf2 (HFE-7200)	C <sub>4</sub> F <sub>9</sub> OC <sub>2</sub> H <sub>5</sub>	60,7	219
HFE-7300	(CF <sub>3</sub> ) <sub>2</sub> CFCFOC <sub>2</sub> H <sub>5</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>3</sub>	405	1 420
n-HFE-7100	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> OCH <sub>3</sub>	544	1 920
i-HFE-7100	(CF <sub>3</sub> ) <sub>2</sub> CFCF <sub>2</sub> OCH <sub>3</sub>	437	1 540

<sup>1</sup> As per Article 2, point (a), mixtures containing the substances listed in this Annex are considered as fluorinated greenhouse gases covered by this Regulation.

<sup>2</sup> Based on the Sixth Assessment Report adopted by the Intergovernmental Panel on Climate Change, unless otherwise indicated.

Substance		GWP <sup>(2)</sup>	20 years-GWP <sup>(2)</sup> for information purposes only
Common name/industrial designation	Chemical formula		
i-HFE-7200	$(\text{CF}_3)_2\text{CFCF}_2\text{OCH}_2\text{CH}_3$	34,3	124
HFE-43-10pcccl24 (H-Galden 1040x) HG-11	$\text{CHF}_2\text{OCF}_2\text{OC}_2\text{F}_4\text{OCHF}_2$	3 220	8 720
HFE-236cal2 (HG-10)	$\text{CHF}_2\text{OCF}_2\text{OCHF}_2$	6 060	11 700
HFE-338pccl3 (HG-01)	$\text{CHF}_2\text{OCF}_2\text{CF}_2\text{OCHF}_2$	3 320	9 180
HFE-347mmyl	$(\text{CF}_3)_2\text{CFOCH}_3$	392	1 400
2,2,3,3,3-pentafluoropropan-1-ol	$\text{CF}_3\text{CF}_2\text{CH}_2\text{OH}$	34,3	123
1,1,1,3,3,3-Hexafluoropropan-2-ol	$(\text{CF}_3)_2\text{CHOH}$	206	742
HFE-227ea	$\text{CF}_3\text{CHFOCF}_3$	7 520	9 800
HFE-236fa	$\text{CF}_3\text{CH}_2\text{OCF}_3$	1 100	3 670
HFE-245fal	$\text{CHF}_2\text{CH}_2\text{OCF}_3$	934	3 170
HFE 263mf	$\text{CF}_3\text{CH}_2\text{OCH}_3$	2,06	7,43
HFE-329 mcc2	$\text{CHF}_2\text{CF}_2\text{OCF}_2\text{CF}_3$	3 770	7 550
HFE-338 mcf2	$\text{CF}_3\text{CH}_2\text{OCF}_2\text{CF}_3$	1 040	3 460
HFE-338mmzl	$(\text{CF}_3)_2\text{CHOCHF}_2$	3 040	6 500
HFE-347 mcf2	$\text{CHF}_2\text{CH}_2\text{OCF}_2\text{CF}_3$	963	3 270
HFE-356 mec3	$\text{CH}_3\text{OCF}_2\text{CHFCH}_3$	264	949
HFE-356mmzl	$(\text{CF}_3)_2\text{CHOCH}_3$	8,13	29,3
HFE-356pcf2	$\text{CHF}_2\text{CH}_2\text{OCF}_2\text{CHF}_2$	831	2 870
HFE-356pcf3	$\text{CHF}_2\text{OCH}_2\text{CF}_2\text{CHF}_2$	484	1 730

Substance		GWP <sup>(2)</sup>	20 years-GWP <sup>(2)</sup> for information purposes only
Common name/industrial designation	Chemical formula		
HFE 365 mcf3	CF <sub>3</sub> CF <sub>2</sub> CH <sub>2</sub> OCH <sub>3</sub>	1,6	5,77
HFE-374pc2	CHF <sub>2</sub> CF <sub>2</sub> OCH <sub>2</sub> CH <sub>3</sub>	12,5	45
2,2,3,3,4,4,5,5-octafluorocyclopentan-1-ol	- (CF <sub>2</sub> ) <sub>4</sub> CH (OH)-	13,6	49,1
1,1,1,3,4,4,4-Heptafluoro-3-(trifluoromethyl)butan-2-one	CF <sub>3</sub> C(O)CF(CF <sub>3</sub> ) <sub>2</sub>	0,29 <sup>(3)</sup>	(*)
perfluoropolymethylisopropyl-ether (PFPMIE)	CF <sub>3</sub> OCF(CF <sub>3</sub> )CF <sub>2</sub> OCF <sub>2</sub> OCF <sub>3</sub>	10 300	7 750
Perfluoro(2-methyl-3-pentanone) (1,1,1,2,2,4,5,5,5-nonafluoro-4-(trifluoromethyl)pentan-3-one)	CF <sub>3</sub> CF <sub>2</sub> C(O)CF(CF <sub>3</sub> ) <sub>2</sub>	0,114	0,441
<i>Section 2: Other fluorinated compounds</i>			
trifluoromethylsulphurpentafluoride	SF <sub>5</sub> CF <sub>3</sub>	18 500	13 900
Perfluorocyclopropane	c-C <sub>3</sub> F <sub>6</sub>	9 200 <sup>(4)</sup>	6 850 <sup>(4)</sup>
perfluorotributylamine (PFTBA, FC43)	C <sub>12</sub> F <sub>27</sub> N	8 490	6 340
perfluoro-N-methylmorpholine	C <sub>5</sub> F <sub>11</sub> NO	8 800 <sup>(5)</sup>	(*)
Perfluorotripropylamine	C <sub>9</sub> F <sub>21</sub> N	9 030	6 750

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- <sup>3</sup> Ren et al. (2019). Atmospheric Fate and Impact of Perfluorinated Butanone and Pentanone. Environ. Sci. Technol. 2019, 53, 15, 8862–8871
- \* Not yet available.
- <sup>4</sup> WMO et al. (2018). Scientific Assessment of Ozone Depletion.
- <sup>5</sup> REACH registration dossier. <https://echa.europa.eu/registration-dossier/-/registered-dossier/10075/5/1>

## **ANNEX IV**

Placing on the market prohibitions referred to in Article 11(1)

Products and equipment		Date of prohibition
(1)	Non-refillable containers for fluorinated greenhouse gases listed in Annex I, empty, partially or fully filled, used to service, maintain or fill refrigeration, air-conditioning or heat pump equipment, fire protection systems or electrical switchgear, or for use as solvents.	4 July 2007
STATIONARY REFRIGERATION		
(2)	Domestic refrigerators and freezers:	(a) that contain HFCs with GWP of 150 or more;
		(b) that contain fluorinated greenhouse gases, except if required to meet safety requirements at the site of operation.
(3)	Refrigerators and freezers for commercial use (self-contained equipment):	(a) that contain HFCs with GWP of 2 500 or more;
		(b) that contain HFCs with GWP of 150 or more;
		(c) that contain other fluorinated greenhouse gases with a GWP of 150 or more.
(4)	Any self-contained refrigeration equipment, except chillers, that contains fluorinated greenhouse gases with a GWP of 150 or more, except if required to meet safety requirements at the site of operation.	



Products and equipment		Date of prohibition
(5) Refrigeration equipment, except chillers and equipment covered in points (4) and (6), that contains, or whose functioning relies upon:	(a) HFCs with GWP of 2 500 or more except equipment intended for application designed to cool products to temperatures below – 50 °C;	1 January 2020
	(b) fluorinated greenhouse gases with a GWP of 2 500 or more, except equipment intended for application designed to cool products to temperatures below – 50 °C;	1 January 2025
	(c) fluorinated greenhouse gases with a GWP of 150 or more, except if required to meet safety requirements at the site of operation.	1 January 2030
(6) Multipack centralised refrigeration systems for commercial use with a rated capacity of 40 kW or more that contain, or whose functioning relies upon, fluorinated greenhouse gases listed in Annex I 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 1 500 may be used.		1 January 2022

Products and equipment		Date of prohibition
STATIONARY CHILLERS		
(7) Chillers that contain, or whose functioning relies upon:	(a) HFCs with GWP of 2 500 or more except equipment intended for application designed to cool products to temperatures below – 50 °C;	1 January 2020
	(b) fluorinated greenhouse gases with a GWP of 150 GWP or more for chillers up to and including a rated capacity of 12 kW, except if required to meet safety requirements at the site of operation;	1 January 2027
	(c) fluorinated greenhouse gases for chillers up to and including a rated capacity of 12 kW, except if required to meet safety requirements at the site of operation;	1 January 2032
	(d) fluorinated greenhouse gases with a GWP of 750 for chillers above 12 kW, except if required to meet safety requirements at the site of operation.	1 January 2027

Products and equipment		Date of prohibition
STATIONARY AIR-CONDITIONING EQUIPMENT AND STATIONARY HEAT PUMPS		
(8) Self-contained air-conditioning equipment and heat pumps, except chillers, that:	(a) plug-in room air-conditioning equipment which is moveable between rooms by the end user that contains HFCs with GWP of 150 or more;	1 January 2020
	(b) plug-in room air-conditioning equipment, monoblock air-conditioning equipment, other self-contained air-conditioning equipment and self-contained heat pumps, with a maximum rated capacity of up to and including 12 kW that contain fluorinated greenhouse gases with a GWP of 150 or more, except if required to meet safety requirements. If safety requirements at the site of operation would not allow using fluorinated greenhouse gases with GWP of less than 150, the GWP limit is 750;	1 January 2027
	(c) plug-in room air-conditioning equipment, monoblock air-conditioning equipment, other self-contained air-conditioning equipment and self-contained heat pumps, with a maximum rated capacity of up to and including 12 kW that contain fluorinated greenhouse gases, except if required to meet safety requirements. If safety requirements at the site of operation would not allow using alternatives to fluorinated greenhouse gases, the GWP limit is 750;	1 January 2032

Products and equipment		Date of prohibition
	(d) monoblock and other self-contained air-conditioning equipment and heat pumps, with a maximum rated capacity of more than 12 kW but not exceeding 50 kW that contains fluorinated greenhouse gases with a GWP of 150 or more, except if required to meet safety requirements. If safety requirements at the site of operation would not allow using fluorinated greenhouse gases with GWP of less than 150, the GWP limit is 750;	1 January 2027
	(e) other self-contained air-conditioning equipment and heat pumps that contain fluorinated greenhouse gases with GWP of 150 or more, except if required to meet safety requirements. If safety requirements at the site of operation would not allow using fluorinated greenhouse gases with GWP of less than 150, the GWP limit is 750.	1 January 2030

Products and equipment		Date of prohibition
(9) Split air-conditioning equipment and heat pumps <sup>1</sup> :	(a) Single split systems, containing less than 3 kg of fluorinated greenhouse gases listed in Annex I, that contain, or whose functioning relies upon, fluorinated greenhouse gases listed in Annex I with GWP of 750 or more;	1 January 2025
	(b) Split air-to-water systems of a rated capacity up to and including 12 kW containing, or whose functioning relies upon, fluorinated greenhouse gases with GWP of 150 or more, except if required to meet safety requirements at the site of operation;	1 January 2027
	(c) Split air-to-air systems of a rated capacity up to and including 12 kW containing, or whose functioning relies upon, fluorinated greenhouse gases with GWP of 150 or more, except if required to meet safety requirements at the site of operation;	1 January 2029
	(d) Split systems of a rated capacity up to and including 12 kW containing, or whose functioning relies upon, fluorinated greenhouse gases, except if required to meet safety requirements at the site of operation;	1 January 2035

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<sup>1</sup> For the purpose of this Regulation, fixed double duct heat pump and air-conditioning equipment shall be considered split (category number 9) and be subject to the same requirements.

Products and equipment		Date of prohibition
	(e) Split systems of a rated capacity of more than 12 kW containing, or whose functioning relies upon, fluorinated greenhouse gases with GWP of 750 or more, except if required to meet safety requirements at the site of operation;	1 January 2029
	(f) Split systems of a rated capacity of more than 12 kW containing, or whose functioning relies upon, fluorinated greenhouse gases with GWP of 150 or more, except if required to meet safety requirements at the site of operation.	1 January 2033
OTHER PRODUCTS AND EQUIPMENT		
(10) Non-confined direct evaporation systems that contain HFCs and PFCs as refrigerants.		4 July 2007
(11) Fire protection equipment:	(a) that contain PFCs;	4 July 2007
	(b) that contain HFC-23;	1 January 2016
	(c) that contain or rely on other fluorinated greenhouse gases listed in Annex I, except when required to meet safety requirements at the site of operation.	1 January 2025
(12) Windows for domestic use that contain fluorinated greenhouse gases listed in Annex I.		4 July 2007
(13) Other windows that contain fluorinated greenhouse gases listed in Annex I.		4 July 2008

Products and equipment		Date of prohibition
(14) Footwear that contains fluorinated greenhouse gases listed in Annex I.		4 July 2006
(15) Tyres that contain fluorinated greenhouse gases listed in Annex I.		4 July 2007
(16) One-component foams, except when required to meet national safety standards, that contain fluorinated greenhouse gases listed in Annex I with GWP of 150 or more.		4 July 2008
(17) Foams:	(a) Extruded polystyrene (XPS) that contain HFCs with GWP of 150 or more, except if required to meet national safety standards;	1 January 2020
	(b) Foams other than extruded polystyrene (XPS) that contain HFCs with GWP of 150 or more, except if required to meet national safety standards;	1 January 2023
	(c) Foams that contain fluorinated greenhouse gases, except if required to meet safety requirements.	1 January 2033
(18) 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, and signal horns, that contain HFCs with GWP of 150 or more.		4 July 2009

Products and equipment		Date of prohibition
(19) Technical aerosols:	(a) that contain HFCs with GWP of 150 or more, except if required to meet national safety standards or when used for medical applications;	1 January 2018
	(b) that contain fluorinated greenhouse gases, except if required to meet safety requirements or when used for medical applications.	1 January 2030
(20) Personal care products (e.g. mousse, creams, foams, liquids or sprays) that contain fluorinated greenhouse gases.		1 January 2025
(21) Equipment used for cooling the skin that contain, or whose functioning relies upon, fluorinated greenhouse gases with GWP of 150 or more except if used for medical applications.		1 January 2025

Point 1 applies to non-refillable containers, namely:

- (a) containers which cannot be refilled without being adapted for that purpose; and
- (b) containers which could be refilled but are imported or placed on the market without provision having been made for their return for refilling.



## **ANNEX V**

### Production rights for placing hydrofluorocarbons on the market

The production rights for hydrofluorocarbons, expressed in tonnes of CO<sub>2</sub> equivalents, referred to in Article 14(3) for each producer are calculated as follows:

- (a) for the period 1 January 2025 to 31 December 2028, 60 % of the annual average of its production in 2011-2013;
  - (b) from the period 1 January 2029 to 31 December 2033, 30 % of the annual average of its production in 2011-2013;
  - (c) for the period 1 January 2034 to 31 December 2035, 20 % of the annual average of its production in 2011-2013;
  - (d) for the period 1 January 2036 and thereafter, 15 % of the annual average of its production in 2011-2013.
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## ANNEX VI

Method of calculating the GWP referred to in Article 3, point (1), of a mixture

The 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  $\pm 1\%$ .

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

$$\Sigma (60 \% \times 1) + (10 \% \times 124) + (30 \% \times 0)$$

Total GWP = 13,0

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. Only emissible components that fulfil broadly the same function are relevant for the calculation of the GWP.

Substance			GWP 100 <sup>(1)</sup>
Common name	Industrial designation	Chemical Formula	
methane		CH <sub>4</sub>	27,9
nitrous oxide		N <sub>2</sub> O	273
dimethyl ether		CH <sub>3</sub> OCH <sub>3</sub>	1 <sup>(2)</sup>
methylene chloride		CH <sub>2</sub> Cl <sub>2</sub>	11,2
methyl chloride		CH <sub>3</sub> Cl	5,54
chloroform		CHCl <sub>3</sub>	20,6
ethane	R-170	CH <sub>3</sub> CH <sub>3</sub>	0,437
propane	R-290	CH <sub>3</sub> CH <sub>2</sub> CH <sub>3</sub>	0,02
butane	R-600	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub>	0,006
isobutane	R-600a	CH(CH <sub>3</sub> ) <sub>2</sub> CH <sub>3</sub>	0 <sup>(3)</sup>
pentane	R-601	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub>	0 <sup>(3)</sup>
isopentane	R-601a	(CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> CH <sub>3</sub>	0 <sup>(3)</sup>
ethoxyethane (diethyl ether)	R-610	CH <sub>3</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>3</sub>	4 <sup>(2)</sup>
methyl formate	R-611	HCOOCH <sub>3</sub>	11 <sup>(4)</sup>
hydrogen	R-702	H <sub>2</sub>	6 <sup>(2)</sup>
ammonia	R-717	NH <sub>3</sub>	0
ethylene	R-1150	C <sub>2</sub> H <sub>4</sub>	4 <sup>(2)</sup>
propene	R-1270	C <sub>3</sub> H <sub>6</sub>	0 <sup>(3)</sup>
cyclopentane		C <sub>5</sub> H <sub>10</sub>	0 <sup>(3)</sup>

<sup>1</sup> Based on the Sixth Assessment Report adopted by the Intergovernmental Panel on Climate Change, unless otherwise indicated.

<sup>2</sup> Based on the Fourth Assessment Report adopted by the Intergovernmental Panel on Climate Change.

<sup>3</sup> WMO et al. (2018). Scientific Assessment of Ozone Depletion, where value is given as <<1.

<sup>4</sup> WMO et al. (2018). Scientific Assessment of Ozone Depletion.

## **ANNEX VII**

Maximum quantities and calculation of reference values and quota  
for placing hydrofluorocarbons on the market referred to in Article 17

- (1) The maximum amount of hydrofluorocarbons allowed to be placed on the Union market in a given year is as follows:

Years	Maximum Quantity in tonnes CO <sub>2</sub> equivalent
2025 – 2026	42 874 410
2027 – 2029	21 665 691
2030 – 2032	9 132 097
2033 – 2035	8 445 713
2036 – 2038	6 782 265
2039 – 2041	6 136 732
2042 – 2044	5 491 199
2045 – 2047	4 845 666
2048 – 2049	4 200 133
2050 onwards	0

- (2) The 2015 base-value for the maximum quantity is set to be: 176 700 479 tonnes CO<sub>2</sub> equivalent.

- (3) Reference values and quota for placing hydrofluorocarbons on the market referred to in Articles 16 and 17 shall be calculated as the aggregated quantities of all hydrofluorocarbons, expressed in tonne(s) of CO<sub>2</sub> equivalent rounded to the nearest tonne.
- (4) Each producer and importer shall receive reference values referred to in Article 17(1), calculated as follows:
- (a) a reference value for placing hydrofluorocarbons on the market based on the annual average of the quantities of hydrofluorocarbons lawfully placed on the market from 1 January 2015 as reported under Article 19 of Regulation (EU) No 517/2014 and under Article 26 of this Regulation for the years available, and taking transfers received into consideration, not including quantities of hydrofluorocarbons for the usages referred to in Article 26(5) of this Regulation during the same period, on the basis of available data;
  - (b) in addition, for producers and importers that have reported the placing on the market of hydrofluorocarbons for the usage referred to in Article 26(5), second subparagraph, of this Regulation, a reference value based on the annual average of the quantities of those hydrofluorocarbons for such usage lawfully placed on the market from 1 January 2020 as reported under Article 19 of Regulation (EU) No 517/2014 and of Article 26 of this Regulation for the years available, on the basis of available data.
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## **ANNEX VIII**

### Allocation mechanism referred to in Article 17

- (1) Determination of the quantity to be allocated to undertakings for which reference values have been established under Article 17(1).

Each undertaking for which reference values have been established receives a quota, which is calculated as follows:

- (a) a quota corresponding to 89 % of the reference value referred to in Annex VII, point 4(a), multiplied by the maximum quantity for the year for which the quota is allocated, divided by the base value of 176 700 479 tonnes CO<sub>2</sub> equivalent<sup>1</sup>; and
- (b) where relevant, a quota corresponding to the reference value referred to in Annex VII, point 4(b). From 2027, such a quota is obtained by multiplying the reference value with a factor of 0,85. From 2030, such a quota corresponds to the reference value multiplied by the maximum quantity for the year for which the quota is allocated divided by the maximum quantity for the year 2025.

Where, after allocating the full amount of quota as referred to in the second subparagraph, the maximum quantity is exceeded, all quota will be reduced proportionally.

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<sup>1</sup> This number is the maximum quantity established for 2015 at the beginning of the phase-down, taking into account the withdrawal of the United Kingdom from the Union.

- (2) Determination of the quota to be allocated to undertakings that have submitted a declaration pursuant to Article 17(3).

The total sum of the quota allocated under point 1 is subtracted from the maximum quantity for the given year set out in Annex VII to determine the reserve amount to be allocated to undertakings, which have submitted a declaration under Article 17(3).

Each undertaking receives an allocation corresponding to a pro-rata share of the reserve.

The pro-rata share is calculated by dividing 100 by the number of undertakings that have submitted a declaration.

- (3) Penalties established in accordance with Article 31 are taken into account in the calculations referred to above.
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## **ANNEX IX**

### Data to be reported pursuant to Article 26

- (1) Each producer referred to in Article 26(1), first subparagraph, shall report on:
  - (a) the total quantity of each substance listed in Annexes I, II and III that it has produced in the Union, including by-production, differentiating between amounts captured and not captured, and identifying quantities destroyed, from such production or by-production, of amounts not captured, or if captured, quantities destroyed prior to their placing on the market, either in the facilities of the producer or handed over to other undertakings for destruction, as well as the undertaking that carried out the destruction;
  - (b) the main categories of application in which the substance is used;
  - (c) the quantities of each substance listed in Annexes I, II and III that it has placed on the market in the Union, specifying separately:
    - (i) quantities placed on the market for feedstock uses, including, for HFC-23 only, if after prior capture or without prior capture;
    - (ii) direct exports;



- (iii) producing metered dose inhalers for the delivery of pharmaceutical ingredients;
  - (iv) use in military equipment;
  - (v) use in the etching of semiconductor material or the cleaning of chemical vapour deposition chambers within the semiconductor manufacturing sector;
  - (vi) amounts of hydrofluorocarbons produced for uses within the Union exempted under the Protocol;
- (d) any stocks held at the beginning and the end of the reporting period, specifying if already placed on the market or not.
- (2) Each importer referred to in Article 26(1), first subparagraph, shall report on:
- (a) the total quantity of each substance listed in Annexes I, II and III that it has imported into the Union, identifying the main categories of application in which the substance is used, specifying separately:
    - (i) amounts imported, not released for free circulation, and re-exported contained in products or equipment by the reporting undertaking;
    - (ii) quantities for destruction, identifying the undertaking carrying out the destruction;

- (iii) feedstock uses, specifying separately amounts of hydrofluorocarbons imported for feedstock uses, and identifying the feedstock-using undertaking;
- (iv) direct exports, identifying the exporting undertaking;
- (v) producing metered dose inhalers for the delivery of pharmaceutical ingredients identifying the producer;
- (vi) use in military equipment; identifying the undertaking receiving the quantities for this use;
- (vii) use in the etching of semiconductor material or the cleaning of chemical vapour deposition chambers within the semiconductor manufacturing sector, identifying the receiving semiconductor manufacturer;
- (viii) amounts of hydrofluorocarbons contained in pre-blended polyols;
- (ix) amounts of recovered, recycled or reclaimed hydrofluorocarbons;
- (x) amount of hydrofluorocarbons imported for uses exempted under the Protocol;

Quantities of hydrofluorocarbons shall be reported separately for each country of origin.

- (b) any stocks held at the beginning and the end of the reporting period, specifying if already placed on the market or not.

- (3) Each exporter referred to in Article 26(1), first subparagraph, shall report on the quantities of each substance listed in Annexes I, II and III that it has exported from the Union, specifying whether from own production or import or whether purchased from other undertakings within the Union, including the amounts of hydrofluorocarbons contained in pre-blended polyols.
- (4) Each undertaking referred to in Article 26(2) shall report on:
- (a) the quantities of each substance listed in Annexes I, II and III destroyed, including, separately, the quantities of those substances contained in products or equipment;
  - (b) any stocks held at the beginning and the end of the reporting period of each substance listed in Annexes I, II and III waiting to be destroyed, including, separately, the quantities of those substances contained in products or equipment;
  - (c) the technology used for the destruction of the substances listed in Annexes I, II and III.
- (5) Each undertaking referred to in Article 26(3) shall report on the quantities of each substance listed in Annex I used as feedstock.
- (6) Each undertaking referred to in Article 26(4) shall report on:
- (a) the categories of the products or equipment containing substances listed in Annexes I, II and III;

- (b) the number of units with regard to products and equipment, or mass with regard to non-countable products like foams;
  - (c) any quantities of each substance listed in Annexes I, II and III contained in the products or equipment;
  - (d) the amount of hydrofluorocarbons charged into the imported equipment, released for free circulation, for which the hydrofluorocarbons had previously been exported from the Union and which had been subject to quota limitations for placing on the Union market. In such case, the report shall also specify the exporting undertaking and the year of export as well as the undertaking having placed the hydrofluorocarbons on the Union market for the first time and the year of that placing on the market.
- (7) Each undertaking referred to in Article 26(5) shall report on the quantities of each substance received from producers and importers for destruction, feedstock uses, direct exports, metered dose inhalers for the delivery of pharmaceutical ingredients use in military equipment and use in the etching of semiconductor material or the cleaning of chemical vapour deposition chambers within the semiconductor manufacturing sector.

The manufacturer of metered dose inhalers for the delivery of pharmaceutical ingredients shall report on the type of hydrofluorocarbons and the quantities used.

- (8) Each undertaking referred to in Article 26(6) shall report on:
- (a) the quantities of each substance listed in Annexes I, II and III that it has reclaimed;
  - (b) any stocks held at the beginning and the end of the reporting period of each substance listed in Annexes I, II and III waiting to be reclaimed.
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## **ANNEX X**

Correlation Table

Regulation (EU) No 517/2014	This Regulation
Article 1	Article 1
Article 2, point (1)	Article 2, point (a)
Article 2, point (2)	Article 3, point (4)
Article 2, points (3) and (4)	–
Article 2, point (5)	Article 3, point (2)
Article 2, point (6)	Article 3, point (1)
Article 2, point (7)	Article 3, point (3)
Article 2, point (8)	Article 3, point (5)
Article 2, point (9)	Article 3, point (36)
Article 2, point (10)	Article 3, point (6)
Article 2, point (11)	Article 3, point (9)
Article 2, point (12)	Article 3, point (10)
Article 2, point (13)	Article 11(3), second subparagraph, and Annex IV, point 1
Article 2, point (14)	Article 3, point (11)
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