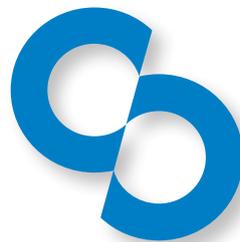


IMPLEMENTATION OF REGULATION (EU) 2024/573 ON FLUORINATED GREENHOUSE GASES (F-GAS) WITH REGARD TO CASTEL REFRIGERATION PRODUCTS



EU Regulation No. 2024/573 on fluorinated greenhouse gases, better known as the F-Gas Regulation, was published in OJEC series L on 20 February 2024 and comes into force throughout the European Union on 11 March 2024, repealing previous EU Regulation No. 517/2014.

However, Article 12 on the labelling of products and equipment and Article 17(5) (on the allocation of quotas for placing hydrofluorocarbons on the market) shall apply from 1 January 2025.

The new regulation is structured around the following main topics that are covered in chapters:

- CHAPTER I - General Provisions
- CHAPTER II – Containment of Emissions
- CHAPTER III - Restrictions and Control of Use
- CHAPTER IV - Production Schedule and Reduction of the Quantity of Hydrofluorocarbons Placed on the Market

CHAPTER I - General Provisions

Subject | Regulation 2024/573:

- provides provisions on the containment, use, recovery, recycling, reclamation, and destruction of fluorinated greenhouse gases and related ancillary measures, such as certification and training, which include the safe use of fluorinated greenhouse gases and non-fluorinated alternatives;
- defines conditions on the production, import, export, placing on the market, and subsequent supply and use of fluorinated greenhouse gases and specific products and equipment containing fluorinated greenhouse gases or whose functioning relies on such gases;
- specifies conditions for particular uses of fluorinated greenhouse gases;
- sets quantitative limits for the placing on the market of hydrofluorocarbons;
- establishes rules on communication.

Scope | The Regulation 2024/573 applies to:

- fluorinated greenhouse gases listed in Annexes I, II and III either alone or as components of mixtures with other substances;
- products and equipment and parts thereof containing fluorinated greenhouse gases or whose functioning depends on such gases.

CHAPTER II – Containment of Emissions

Article 5(1) stipulates that operators of equipment containing fluorinated greenhouse gases listed in Annex I in quantities of 5 tonnes of CO₂ equivalent or more must ensure that checks for leaks are performed. This paragraph applies

- to the following stationary equipment:
 - refrigeration equipment
 - air conditioning equipment
 - heat pumps
- to the following mobile equipment:
 - refrigeration units of refrigerated trucks and refrigerated trailers
 - refrigeration units for light refrigerated vehicles, intermodal containers, railway wagons
 - air conditioning equipment and heat pumps in heavy vehicles, vans, trains, subways, trams and aircraft

Hermetically sealed equipment containing F-Gas in quantities of less than 10 tonnes CO₂ equivalent is excluded from such control operations, provided it is labelled as hermetically sealed.



CHAPTER III - Restrictions and Control of Use

Restrictions on placing on the market and sale: Article 11 specifies that the placing on the market of products and equipment listed in Annex IV shall be prohibited as of the dates indicated. Air conditioning and refrigeration equipment subject to this prohibition are:

Products and equipment		Date of prohibition
STATIONARY REFRIGERATION PRODUCTS AND EQUIPMENT		
2) Household refrigerators and freezers containing:	Fluorinated greenhouse gases	1 January 2026
3) Refrigerators and freezers for commercial use containing: autonomous equipment	Other fluorinated greenhouse gases with GWP of 150 or more	1 January 2025
4) Autonomous refrigeration equipment, excluding chillers containing	Other fluorinated greenhouse gases with GWP of 150 or more	1 January 2025
5) Refrigeration equipment (chillers), with the exception of chillers and equipment under Point 4 containing	Fluorinated greenhouse gases with GWP equal to or greater than 2500, except for equipment designed to cool products to temperatures below -50 °C	1 January 2025
	Fluorinated greenhouse gases with GWP of 150 or more	1 January 2030
6) Multipack centralised refrigeration systems for commercial use with a rated capacity of 40 kW or more containing (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
STATIONARY REFRIGERATION EQUIPMENT (CHILLERS)		
7) chillers containing:	Fluorinated greenhouse gases with GWP equal to or greater than 150 for chillers with rated capacity of 12kW	1 January 2027
	Fluorinated greenhouse gases for chillers of rated capacity of up to and including 12kW	1 January 2032
	Fluorinated greenhouse gases with GWP of 750 for chillers with rated capacity above 12kW	1 January 2027
STATIONARY AIR CONDITIONING EQUIPMENT AND STATIONARY HEAT PUMPS		
8) Self-contained air conditioning and heat pump equipment, excluding chillers	Monoblock plug-in air conditioning equipment, other stand-alone equipment and stand-alone heat pumps with maximum rated capacity of up to and including 12 kW containing fluorinated greenhouse gases with GWP of 150 or more	1 January 2027
	Monoblock plug-in air conditioning equipment, other self-contained equipment and self-contained heat pumps with maximum rated capacity of up to and including 12 kW containing fluorinated greenhouse gases	1 January 2032
	Monoblock plug-in air conditioning equipment, other stand-alone equipment and stand-alone heat pumps with maximum rated capacity of more than 12 kW but less than 50kW, containing fluorinated greenhouse gases with GWP of 150 or more	1 January 2027
	Other air conditioning equipment and stand-alone heat pumps containing fluorinated greenhouse gases with GWP of 150 or more	1 January 2030
9) Split-type air conditioning equipment and split-type heat pumps	Single-split systems containing less than 3 kg of fluorinated greenhouse gases listed in Annex 1 with GWP of 750 or more	1 January 2025
	Split-type air-water systems of rated capacity up to and including 12 kW containing fluorinated greenhouse gases with GWP of 150 or more	1 January 2027
	Split-type air-air systems of rated capacity up to and including 12 kW containing fluorinated greenhouse gases with GWP of 150 or more	1 January 2029
	Split-type systems of rated capacity up to and including 12 kW containing fluorinated greenhouse gases	1 January 2035
	Split-type systems of rated capacity greater than 12 kW containing fluorinated greenhouse gases with GWP equal to or greater than 750	1 January 2029
	Split-type systems with rated capacity above 12 kW containing fluorinated greenhouse gases with GWP of 150 or more	1 January 2033



Control of use: Article 13 stipulates that as of 1 January 2025 the use of fluorinated greenhouse gases with GWP \geq 2500 for the servicing and maintenance of refrigeration equipment with refrigerant charge \geq 40 tonnes CO₂ equivalent shall be prohibited.

The prohibition does not apply to equipment designed to operate at T < -50 °C.

The prohibition is postponed until 1 January 2030 for reclaimed fluorinated greenhouse gases with GWP \geq 2500 labelled in accordance with Article 12, and for recycled fluorinated greenhouse gases with GWP \geq 2500 discharged from the equipment being serviced.

CHAPTER IV - Production Schedule and Reduction of the Quantity of Hydrofluorocarbons Placed on the Market

Article 16 stipulates that the quantity of hydrofluorocarbons producers and importers place on the market in the EU shall not exceed the maximum quantity specified in Annex VII. With 100% of the maximum quantity allowed in 2015, Annex VII foresees a gradual reduction of the maximum tradable quantity to 0% in 2050. Article 17 stipulates that within this defined maximum quantity per year, the European Commission shall determine reference values for specific quotas of hydrofluorocarbons to be placed on the market for producers in compliance with the regulation.

CONCLUSIONS

We believe that the implementation of the new F-Gas Regulation will accelerate the changes taking place in the various refrigeration and air conditioning sectors. The use of the two traditional refrigerants in the refrigeration sector, R404A (GWP=3922 according to AR4) and R507 (GWP=3985 according to AR4) is destined to disappear completely. Considering the changes taking place in domestic refrigeration and automotive air conditioning, even the use of R134a (GWP=1430 according to AR4) is destined to decrease. Considering the air conditioning equipment mentioned in Annex IV of the regulation, the use of the two refrigerants traditionally used in air-conditioning, R407C (GWP=1774 according to AR4) and R410A (GWP=2088 according to AR4) is also destined to disappear.

In addition to these phenomena that have already been underway since the application of the previous F-Gas Regulation, several HFC + HFO mixtures developed in past years will be gradually phased out with the various dates of prohibition specified in Annex IV.

The Castel company has promptly investigated the content and purposes of the new legislation in order to verify the suitability and compatibility of its products with the refrigerants being proposed by the major manufacturers as alternatives to the hydrofluorocarbons destined for prohibition.

Proof of the Castel company effort in this regard is that it has been developing the following two product lines specifically for use with natural refrigerants for years now:

- the GOGREEN line, specifically formulated for use with R744 (CO₂), with different pressures of use),
- the POLYHEDRA line, specifically formulated for use with hydrocarbons (R290, R600, R600a, R1270), a product line that can also be used with HFC + HFO mixtures for as long as they will be permitted.