

# **F-gas Regulation (EU) 2024/573**

## **Whitepaper**

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# 1 Introduction

Will it still be possible to utilise Rittal cooling units and chillers without a second thought in the future? That's the question many users in the panel building, switch-gear manufacturing and mechanical engineering sectors are currently asking themselves. The reason for this is the new F-gas Regulation (EU) 2024/573, which entered into force on 11 March 2024 and, since 1 January 2025, has gradually been introducing new requirements and prohibitions relating to equipment that contains fluorinated refrigerants.

As a key element of Europe's climate strategy, this Regulation aims to substantially reduce emissions of fluorinated greenhouse gases. The target is for these emissions to fall to 5.2 percent of the 2015 level by 2030 and be eliminated altogether by 2050.

**Three key regulatory approaches are to play a big part in helping to reduce emissions:**

- **Phase-down of available quantities of HFCs** (hydrofluorocarbons):
- The total permissible quantity is to be reduced each year and reach zero by 2050.
- **Prohibitions on the use and placing on the market** of equipment with a high GWP (global warming potential), as long as this is technically feasible and more climate-friendly alternatives are available.
- **Extended requirements relating to leak checks, certification, disposal and labelling** for equipment and refrigerants.

The EU Commission's updated assessment of alternatives to F-gases is particularly significant. Due to a variety of thermodynamic and safety-related properties, there is no one universal solution. The suitability of an alternative refrigerant must be assessed separately for each product category, based on factors such as operating environment, temperature range and energy efficiency.

**HFCs (hydrofluorocarbons):** Fluorinated hydrocarbons containing no chlorine that do not damage the ozone layer, but have a high global warming potential (GWP)

**HCFCs: (hydrochlorofluorocarbons):** These contain both fluorine and chlorine and damage the ozone layer

After all, when selecting suitable alternatives to HFCs and HCFCs, both direct emissions and indirect emissions caused by energy consumption are relevant. In terms of climate footprint, an overall improvement can only be achieved if an alternative refrigerant exhibits superior energy efficiency.

This white paper indicates which product areas are affected, which prohibitions on use and placing on the market apply, and what specific impact the new provisions are having on the utilisation, maintenance and servicing of Rittal climate control solutions.



# 2 | Content of the F-gas Regulation

In force since 11 March 2024, F-gas Regulation (EU) 2024/573 replaces the previous Regulation (EC) No 517/2014. The aim of the new Regulation is to substantially reduce emissions of fluorinated greenhouse gases (F-gases) and eliminate their impact on global warming over the long term.

The amended Regulation contains extended and more stringent measures that go beyond the previous provisions. It adopts the basic principles of the previous Regulation, which envisage reducing the use of F-gases to 0 percent by 2050 (phase-out).

**The Regulation particularly affects the following areas:**



## Leakages

New intervals for leak checks, compulsory leakage detection systems when certain threshold values are reached or exceeded, and extended documentation obligations.



## Recovery

Stricter monitoring by the Member States to ensure proper recovery, recycling and disposal of fluorinated gases.



## Prohibitions on use

New prohibitions on the use and placing on the market of equipment with a high GWP, differentiated according to equipment category and area of application.



## Maintenance and servicing

Since 2025, refrigerants with a GWP > 2,500 can only be used in recycled or reclaimed form, with further restrictions applying from 2030 onwards.



## Certification

Refrigerants can only be passed on to certified specialists and companies, and existing certificates must be renewed by 2029 at the latest.



## Labelling

Extended labelling obligations for equipment, pressure vessels and packaging – including GWP, charge size and safety information.



## Phase-down and phase-out

Permissible quantities of HFCs are gradually being reduced. A complete phase-out is envisaged by 2050. The quota system has been made stricter and now also relates to pre-filled equipment, starting from 10 t of CO<sub>2</sub> equivalents (t = metric tons).



## Reporting

The process for reporting to the EU has been revised. Companies must submit their annual reports via the F-gas Portal by 31 March. An additional verification report is required when a threshold of 1,000 t of CO<sub>2</sub> equivalents is reached or exceeded.



# 3 | Market prohibitions and GWP thresholds

The key idea behind the new F-gas Regulation focuses less on prohibitions on use and placing on the market and more on a gradual reduction in the quantities of F-gases available, which is referred to as the “phase-down”. This is controlled using a quota system that regulates the quantity of hydrofluorocarbons (HFCs) that can be placed on the market in the EU each year.



## What does that mean for manufacturers and importers?

The European Commission allocates quotas – in metric tons of CO<sub>2</sub> equivalents – that determine the amount of HFCs companies can import into the EU or manufacture each calendar year. These quotas apply regardless of the specific type of refrigerant and must not be exceeded.

### Calculations are based on the global warming potential (GWP):

- GWP indicates the extent to which a greenhouse gas contributes to global warming compared with CO<sub>2</sub>
- The CO<sub>2</sub>-equivalent quantity is calculated as follows: Charge size (kg) × GWP of refrigerant



## What does that mean in practice?

**The decision about which refrigerant to use has a considerable impact on the ecological footprint of a cooling system.** F-gas Regulation (EU) 2024/573 places significant restrictions on the use of refrigerants that have an adverse effect on the climate. However, no single aspect should be considered in isolation when deciding which refrigerant to use. Each option has different properties that affect compressor design and energy consumption.

**A holistic approach is therefore vital.** The only way to find the most sustainable solution is to factor in environmental compatibility, energy efficiency and technical feasibility.

**Rittal systematically takes this balancing act into account.** Based on its well-founded analyses and innovative technologies, the company ensures customers always get the optimum, future-proof cooling solution.

### Example

1 kg of R-410A (GWP 2,088) corresponds to 2.088 t of CO<sub>2</sub> equivalents

$$1 \text{ kg} \times 2,088 = 2,088 \text{ kg of CO}_2 = 2.088 \text{ t of CO}_2$$





## GWP threshold schedule for new equipment

The Regulation stipulates the dates from which equipment above specific GWP thresholds can no longer be placed on the market. The use and maintenance of this equipment are still permitted.

Year	Equipment type	GWP threshold
2025–2026	Stationary refrigeration equipment, air-conditioning units and heat pumps in all output classes	$\leq 2,500$ (mono-split $< 3$ kg: $\leq 750$ )
2027–2029	Self-contained air-conditioning units and heat pumps $\leq 12$ kW as well as chillers	$\leq 150$ (safety exception $\leq 750$ )*
2030–2031	Split air-conditioning equipment and split heat pumps up to 12 kW as well as chillers	$\leq 150$ *
From 2032	All new refrigeration, air-conditioning and heat pump systems and chillers that are placed on the market	No F-gases permitted*



### \*Derogation from 2027 onwards

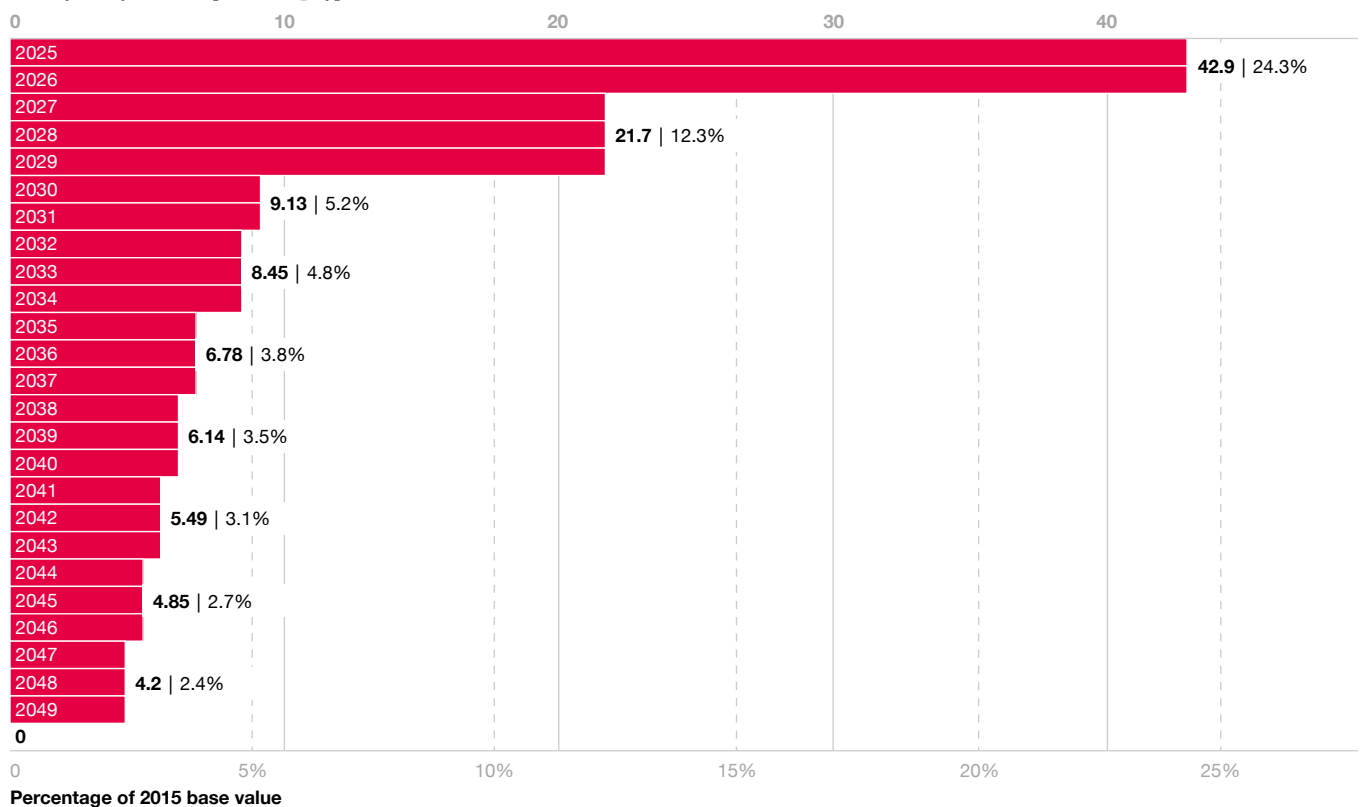
A GWP  $\leq 750$  is still permitted if safety-relevant requirements mean there is no alternative.

Regulatory stipulations are reflected on the market. The maximum permissible quantities of HFCs decrease step by step and place the emphasis on switching to low-GWP solutions.



**Maximum quantities of hydrofluorocarbons that can be placed on the market** in line with Regulation (EU) 2024/573 (base value = 176.7 mill. t CO<sub>2</sub>eq.)

Max. quantity of HFCs [mill. t CO<sub>2</sub>eq.]



Source: German Environment Agency (UBA)



**How to determine, as an operator, whether the derogation applies to you:**  
**Carry out a detailed review of the safety requirements.**

### **Product and substance analysis**

- ✓ Identify the refrigerant being used.
- ✓ Check exactly which F-gases or natural refrigerants (e.g. CO<sub>2</sub>, ammonia, propane) your product contains and in what quantities.
- ✓ Familiarise yourself with the specific properties of these substances, especially with regard to combustibility, toxicity and operating pressure.

### **Planned location of use and application**

- ✓ Analyse in detail where and how the product is to be used. Consider aspects such as:
  - Surrounding area: Industrial facility, manufacturing, production process, indoor/outdoor, machine room
  - Conditions in the immediate area: Size of room, ventilation situation
  - Ignition sources: Presence of potential ignition sources in the vicinity
- ✓ Determine which national, location-specific and application-specific risks (e.g. explosion protection, ventilation, fire safety) are subject to compulsory assessment and establish the threshold values that apply.

### **Legal assessment**

- ✓ Check whether there is any EU legislation (e.g. Machinery Regulation, ATEX Directive, Pressure Equipment Directive) or national legislation (e.g. in Germany: Ordinance on Industrial Safety and Health (BetrSichV), Ordinance on Hazardous Substances (GefStoffV), building regulations, technical rules) that restricts or prohibits the use of specific substances at the planned location.
- ✓ If conflicts exist between different legislation/regulations, establish which legislation/regulation takes precedence.

### **Technical standards:**

- ✓ Take into account relevant accepted standards for the location of use, such as:
  - DIN EN 378 (safety of refrigerating systems) / ISO 5149
  - VDMA recommendations and recommendations of national associations
  - DGUV (German Statutory Accident Insurance) requirements issued by professional associations (e.g. TRGS 720 / TRGS 722, DGUV Rule 113-001)
  - Factory standards of operators and location-specific safety and environmental protection assessments
  - Requirements of insurers
- ✓ Carry out a hazard assessment (BetrSichV § 3 – Hazard assessment; GefStoffV § 6 – Information gathering and risk assessment).
- ✓ Check whether location-specific or operator-specific approvals or safety verifications are required for the operating licence.

### **Documentation and communication:**

- ✓ Document the results of your checks and analyses to ensure legal compliance when commissioning equipment that contains a non-combustible refrigerant (the responsible authority in Germany is the German Environment Agency (UBA)).
- ✓ Label the equipment appropriately.
- ✓ Notify customers and other partners in the equipment supply chain of potential requirements or restrictions.



## Obligations for operators of equipment containing F-gases

- ✓ **Prevent emissions** ([Article 4](#)).
- ✓ **When installing equipment:** Take into account the prohibitions listed in [Annex IV](#).
- ✓ **When installing equipment labelled “Prohibited to be operated, unless required by safety requirements that have to be applied at the site of operation”,** ensure:
  - Operation is indeed required.
  - Equipment complying with the F-gas provisions in Annex IV would not adversely affect the safety requirements ([Article 12](#) (15) and [Article 13](#)).
- ✓ **When installing, maintaining, servicing, repairing or decommissioning equipment:**  
Use only certified or appropriately qualified persons ([Article 4](#), [8](#) and [10](#)).
- ✓ **Comply with any applicable leak check requirements for the various F-gases concerned** ([Article 5](#) and [6](#)).
- ✓ **As regards record-keeping for the installation and maintenance of equipment:**
  - Retain records for at least **five years**:
    - Including for equipment labelled: “Prohibited to be operated, unless required by safety requirements that have to be applied at the site of operation”
    - Including for equipment that may potentially be subject to other exceptions
  - Evidence of location-specific reasons must also be retained ([Article 7](#)).
- ✓ **When carrying out maintenance on equipment:**  
Comply with the restrictions relating to the use of F-gases that have a particularly high global warming potential ([Article 13](#)).
- ✓ **When decommissioning equipment:**  
Ensure that the F-gases contained in the equipment are recovered, recycled, reclaimed or destroyed ([Article 8](#)).
- ✓ **Operators are not obliged to register in the F-gas Portal or to report as specified in [Article 26](#) of the F-gas Regulation.**



The EU Commission is planning to analyse the impact of the new provisions by the end of 2029. Based on this assessment, amendments could be proposed and submitted for a decision.

These provisions oblige industry and users to switch to refrigerants with a lower GWP. Besides being subject to quantity limits, high-GWP refrigerants will also have their availability severely restricted by means of prohibitions on use and phased service restrictions.





# 4 | Maintenance and servicing of existing systems



## Transitional provision for refrigerants with a GWP > 2,500

The transitional provisions of F-gas Regulation (EU) 2024/573 for refrigerants with a GWP > 2,500 generally apply to specific equipment types, not to specific performance parameters.

### A differentiation is made between:

- Chillers (refrigeration equipment)
- Air-conditioning equipment and heat pumps

### Overview of permissible filling for each equipment group

Year	Chillers	Air-conditioning equipment / heat pumps
2025	Only recycled/reclaimed refrigerant	New products permitted
2026–2029	Only recycled/reclaimed refrigerant	Only recycled/reclaimed refrigerant
From 2030	No F-gases permitted in new equipment	Only recycled/reclaimed refrigerant
From 2032	No F-gases permitted in new equipment	No F-gases permitted in new equipment



**Normal operation** and maintenance of the equipment is permitted, provided **no damage or leaks** are detected in a refrigeration circuit.

### Terms as defined in the Regulation:

- **Recovery:** Collection and storage during maintenance/disposal
- **Recycling:** Reuse following basic cleaning
- **Reclamation:** Technical reprocessing to achieve a level of performance equivalent to a new product, including a quality inspection



## Recovery and destruction obligation

In accordance with Article 8 (1), operators of equipment in which fluorinated greenhouse gases are used – unless these gases are contained in foams – are obliged to ensure that, when the equipment is decommissioned, these gases are recovered and either recycled, reclaimed or destroyed. This obligation applies regardless of how much of the substance the equipment contains.

# 5 | Future-proof refrigerants at Rittal

## Alternative refrigerants

Refrigerant	GWP	Class	CO <sub>2</sub> eq./kg
R-513A	631	A1	631
R-1234yf	0.5	A2L	0.5
R-290	0.02	A3	0.02
R-454C	146	A2L	146
R-744C	1	A1	1

Rittal is systematically focusing its portfolio on solutions with a low greenhouse potential – now and in the future. For some years now, the company has not been using refrigerants with a GWP of 2,500 or higher, meaning it doesn't simply comply with the requirements of F-gas Regulation (EU) 2024/573, but makes a point of going beyond these requirements.

R-410A and R-513A are currently used in chiller systems and R-513A in cooling units. These refrigerants have a much lower GWP, while also offering excellent technical reliability and energy efficiency.

At the same time, Rittal is working on solutions for the next stage of regulation, moving towards even lower GWPs. Ongoing research and a clear sustainability

strategy ensure that future requirements will be met without compromising on safety, performance or efficiency.

R-1234yf is recommended in applications that require a favourable carbon footprint, guaranteed compliance with standards and reliable performance. This refrigerant exhibits minimal global warming potential and causes no damage to the ozone layer. It also meets clearly defined safety requirements and is regarded as a tried-and-tested solution thanks to having been used millions of times in practice. By the end of 2022, just under 200 million vehicles with R-1234yf air-conditioning systems were in use. Rittal has therefore also switched its Blue e+ portfolio to the F-gas-compliant refrigerant R-1234yf. Furthermore, R-1234yf is used in over 95 percent of new vehicles in North America. Manufacturers such as Ford, GM, Toyota, Hyundai, Mercedes-Benz, BMW and Honda have switched their air-conditioning systems completely to this refrigerant.

The selection of a refrigerant is based specifically on the relevant application, taking into account output range, safety requirements and efficiency targets. The following overview lists various refrigerants and their properties to illustrate the technically appropriate solution for different systems.

## Advantages and disadvantages of refrigerants

Refrigerant	Description	Advantages	Disadvantages
R-1234yf	HFO with very low GWP	Similar properties to R-134a, future-proof	Mildly flammable (A2L), expensive and warning label required
R-513A	Substitute for R-134a	Lower GWP, no flame propagation (A1), good retrofit compatibility	Still contains fluorine, minor system adjustments required
R-290 (propane)	Natural refrigerant with very low GWP	High efficiency, low costs	Higher flammability (A3), only limited charge sizes can be used in refrigeration equipment, explosion protection measures required
R-454C	HFO-based, low-GWP substitute blend for R-404A (R-32+R-1234yf)	GWP < 150, good retrofit compatibility	Mildly flammable (A2L), limited long-term experience, system adjustments required
R-744C (CO <sub>2</sub> )	Natural refrigerant, GWP = 1	No flame propagation, very environmentally friendly, suitable for compact systems	Very high operating pressures, more expensive components and special know-how required, not suitable for enclosure or machine cooling

# 6 | Leak checks

The frequency of the leak checks required by [Article 5](#) of the F-gas Regulation depends on the CO<sub>2</sub>-equivalent value or the quantity of refrigerant in kg.

## Annex I gases (R-134a, R-410A, R-513A)

CO <sub>2</sub> equivalents	Without leakage detection system	With leakage detection system
< 5 t	None	None
5–50 t	Annually	Every 24 months
50–500 t	Operation not permitted	Annually
> 500 t	Operation not permitted	Half-yearly

## Annex II gases (R-1234yf)

Charge size	Without leakage detection system	With leakage detection system
< 1 kg	None	None
1–10 kg	Annually	Every 24 months
10–100 kg	Operation not permitted	Annually
> 100 kg	Operation not permitted	Half-yearly



### Compulsory leakage monitoring for F-gas equipment

Based on Article 6 of Regulation (EU) 2024/573 on fluorinated greenhouse gases, operators of refrigeration, air-conditioning and heat pump equipment are subject to the following requirements:

- It is compulsory for **equipment containing 10 to 100 kg of F-gases or 50 to 500 metric tons of CO<sub>2</sub> equivalents** to have a **leakage detection system**.
- This system must check the refrigeration equipment for leaks on a **continuous** basis and **automatically raise the alarm** in the event of any leakage.
- **Operating such equipment without a fully functioning leakage detection system installed is not permitted.**
- This obligation applies regardless of which refrigerant is used, provided the refrigerant qualifies as a fluorinated greenhouse gas and exceeds the specified thresholds.
- The Regulation also stipulates that **regular leak checks** by certified personnel must be carried out, with the frequency depending on the charge size and CO<sub>2</sub>-equivalent value.



Due to the refrigerant used and the optimised charge size, Rittal cooling units do not require a leakage detection system, nor must they undergo the stipulated regular leak checks.

# 7 | Leakage repair, follow-up checks and certification obligations

## In line with Article 4 (5) of the Regulation:

- Fluorinated gas leakages must be **repaired without undue delay**.
- For equipment that is subject to compulsory checks (Article 5 (1)), a follow-up check must be carried out by a certified specialist no less than 24 hours and no more than one month after the repair.
- For mobile equipment (Article 5 (3), points a to c), the follow-up check can take place immediately after the repair.

Under F-gas Regulation (EU) 2024/573, equipment with a CO<sub>2</sub>-equivalent charge size of 5 metric tons or more of fluorinated greenhouse gases must undergo compulsory leak checks. Only certified specialists are permitted to carry out these checks. Based on the current legal requirements, the Rittal service team is certified and entitled to carry out all necessary checks and maintenance work. Certification takes place in line with the new Regulation (EU) 2024/573. This replaces the previous procedure based on Regulation (EU) No 517/2014.

## Scope of services

The regular leak checks can be combined with inspection and maintenance operations. These are based on product-specific checklists and include:

- A visual inspection and assessment of the general condition
- Basic cleaning of components
- Measurement and documentation of equipment parameters
- Inspection of fans, ventilation and settings
- Logging of maintenance work
- Assessment of the installation's condition

In line with Article 7 of the Regulation, the results are documented and **archived for at least five years**.

## Inspection intervals in line with Regulation (EU) 2024/573

CO <sub>2</sub> equivalents per cooling circuit*	Without leakage detection system	With leakage detection system
5 to 50 metric tons	Every 12 months	Every 24 months
50 to 500 metric tons	Every 6 months	Every 12 months
Above 500 metric tons	Every 3 months	Every 6 months

## Certification obligations

- Servicing work must be carried out by **certified specialists only**.
- Businesses require valid **company certification**.
- Existing certificates remain valid until 2029, after which they must be **renewed every seven years**.



For hermetically sealed systems that are operated using appropriate refrigerants, an exception applies to the obligation to perform a follow-up check after a leakage is repaired if the charge size is less than 2 kg of fluorinated gases (based on Annex II of the Regulation), and the CO<sub>2</sub>-equivalent value is less than 10 metric tons (based on Annex I of the Regulation).

**In other words:** Following a repair, such systems do not need to be checked for leaks again, as long as they are hermetically sealed and comply with the above-mentioned limits.

1 kg of R-410A (GWP 2,088) corresponds to 2.088 t of CO<sub>2</sub> equivalents.

**5,000 kg of CO<sub>2</sub> / 2,088 = 2.39 kg**, i.e. a check is required starting from 2.39 kg of R-410A.

Exceptions apply to hermetically sealed systems, as long as the charge sizes are below the thresholds. Equipment without a leakage detection system must not be operated above a threshold of 500 metric tons.



# 8 | Transportation and hazardous goods regulations

Special requirements apply when transporting cooling units, chillers and other products containing fluorinated refrigerants. Simplified shipment is an option, as long as the equipment is filled at the factory and its circuits are hermetically sealed.

## Prerequisites for simplified shipment

- Closed circuit: The refrigerant is located in a system that is sealed hermetically at the factory (e.g. by welding or soldering).
- No on-site interventions: Equipment contains all the necessary refrigerant, no topping up takes place, and no gas-carrying components are connected on the customer's premises.
- Correct labelling and documentation: The equipment is labelled in line with the applicable special provisions and identified in the documentation.

## Effects on shipping process

- No **hazardous goods label** required
- **Special provisions** still apply, e.g.:
  - Road (ADR): **Special provision 119**
  - Sea freight (IMDG): **Special provision 119**
  - Air freight (IATA DGR): **Special provision A26**  
(does not apply to R-1234yf or R-290)



### Important

The special provisions must be **noted down in the transport documents** (e.g. delivery note, AWB, bill of lading).



# 9 | Registration in the F-gas Portal

Due to the amended EU F-gas Regulation, more companies than before will need to register in the EU's F-gas Portal in the future. The new Implementing Regulation (EU) 2024/2473 of 19 September 2024, published in the Official Journal of the EU on 20 September 2024, has been in force since 10 October 2024. Amongst other things, it states that companies must have a valid registration in the EU F-gas Portal if they wish to export F-gases or products and equipment containing F-gases to countries outside the EU or import them from third countries into the EU.



## Obligations, registration and contact points

### Who must take action?

Manufacturers, traders, exporters and importers

### What obligations apply?

- Registration in the F-gas Portal:  
[F-gas Portal – Fluorinated Greenhouse Gases – Climate Action \(europa.eu\)](#)
- Quota application and transfer
- Annual reporting: [Guidelines on how to register in the EU Portal \(PDF\)](#)

The EU provides a concise overview of all obligations relating to F-gases:

[F-gases in equipment and products – Fluorinated Greenhouse Gases – Climate Action \(euro-pa.eu\)](#)

National contacts can provide help with procedures and questions:

[National Contact Points – Climate Action – European Commission](#)



## Overview of worldwide regulations relating to refrigerants

The use of refrigerants containing F-gases is being more strictly regulated outside the EU, too. In the USA, the US AIM Act of the EPA (Environmental Protection Agency) envisages restricting use to refrigerants with a GWP below 700 – with effect from 1 January 2025 for cooling units and with effect from 1 January 2026 for chillers. Canada is adopting a similar approach. Since 1 January 2025, a GWP limit of 750 has applied to cooling units and chillers (Canadian Environmental Protection Act Registry). Other major markets are also making their requirements stricter or preparing new regulations. For example, requirements relating to the use and proper handling of HFCs apply in Japan, China has produced a draft on recommended replacements for HFCs, and Australia is planning to modify the relevant ozone and greenhouse gas regime. India, too, is envisaging a phase-down starting from 2032. The overall picture is mixed. There are no standardised limits, timescales vary and there is a clear trend towards local requirements for reducing F-gas emissions.

# 10 | FAQs about F-gas Regulation 2024/573

## 1. Do Rittal cooling units need to be declared as hazardous goods?

No. The quantities of refrigerant contained in the units are low (max. 12 kg per unit). Under the relevant special provisions, they are not deemed to be hazardous goods when transported overland or by sea.

## 2. What special provisions apply to transportation?

- Road: ADR 119
- Sea freight: IMDG 119
- Air freight: IATA DGR A26. These provisions permit transportation without labelling, subject to correct documentation.

## 3. Do restrictions apply when transporting certain refrigerants by air?

Yes. Transporting **R-1234yf** or **R-290** by **air freight is not permitted** (UN3358, Class 2.1). Alternative: Transport by road or sea freight.

## 4. What requirements apply to transporting “loose” refrigerant by road?

The 1000-point rule determines whether a hazardous goods obligation applies.

**Example:** 100 kg of R-513A + 100 kg of R-1234yf = 400 points ► **no special vehicle for hazardous goods is required.**

## 5. Does this also apply when shipping refrigerants that are inside equipment?

Yes. The special provisions apply if the refrigerant is hermetically sealed inside the equipment. No labelling is required.

## 6. What is the approach for mixed loads?

The relevant points are added up.

**Example:** 100 kg of R-513A + 100 kg of R-1234yf = 400 points ► **below the 1000-point limit.**

## 7. Which refrigerants can be transported by air freight?

Refrigerant	UN no.	Class	Air freight permitted?	Special provision
R-134a	UN2857	2.2	Yes	ADR 119 / IMDG 119 / A26
R-513A	UN2857	2.2	Yes	ADR 119 / IMDG 119 / A26
R-1234yf	UN3358	2.1	No	ADR 119 / IMDG 119
R-290	UN3358	2.1	No	ADR 119 / IMDG 119

## 8. Which equipment is subject to the F-gas Regulation?

- Chillers
- Roof-mounted and wall-mounted cooling units
- IT cooling solutions (LCP Inline, Rack, CRAC)
- Split systems
- Heat pumps

## 9. Who is permitted to carry out servicing work?

Only certified specialists with valid training. Businesses require company certification.

## 10. When do certificates need to be renewed?

By **2029** at the latest and every **seven years** after that.

## 11. Do I need to register in the F-gas Portal?

Yes, if you are:

- Importing/exporting equipment/refrigerants
- Submitting a quota application
- Reporting:

[Guidelines on how to register in the EU Portal \(PDF\)](#)



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