

# F-Gas Regulation has announced **more** stringent measures.



## EU F-Gas Regulation (2024/573)



### From January 1, 2017

Importers of refrigeration equipment using HFC refrigerants, such as refrigerated Thermo-chillers and Air dryers into the European Union (EU) must be registered in the EU F-gas Portal and be part of the EU Quota system. SMC holds 'Authorisation Quota' from the EU Quota system. (Refer to FAQ 6 on page 2.)



### From January 1, 2020

The import of **products that use refrigerants with a GWP value\*1 of 2500 or more** into the EU is prohibited. SMC temperature control equipment and refrigerated air dryers use refrigerants with a GWP value of less than 2500.

### From January 1, 2025



• **Refrigerated air dryers that use refrigerants with a GWP value of 150 or more**  
 ➔ **Import into the EU will be prohibited.**

### From January 1, 2027



• **Temperature control equipment of 12 kW\*2 or less that uses refrigerants with a GWP value of 150 or more**  
 • **Temperature control equipment of over 12 kW that uses refrigerants with a GWP value of 750 or more**  
 ➔ **Import into the EU will be prohibited.**

### From January 1, 2032



• **Temperature control equipment of 12 kW or less that uses refrigerants other than natural refrigerants**  
 ➔ **Import into the EU will be prohibited.**

\*1 The GWP values are values based on EU F-Gas Regulation 2024/573.

\*2 Rated cooling capacity (Based on SMC's research and judgement)

# EU F-Gas Regulation Compatible Products

## Temperature Control Equipment

**Products subject to regulation**  
**Thermo-chiller**

**HR□ Series**

R404A (GWP 3922)      R134a (GWP 1430)  
R407C (GWP 1774)      R410A (GWP 2088)  
R448A (GWP 1386)

**HRS Series**      **HRL Series**      **HRS Series**  
**HRR Series**      **HRZ/HRZ-F Series**

GWP value  
Max. 96 % reduction

**EU F-Gas Regulation Compatible Products**  
**Low GWP Refrigerant Compatible Thermo-chiller**

**HR□F Series\*1**

**R454C (GWP 146)**

- HRSF Series
- HRLF Series
- HRRF Series
- HRZF Series (Currently available)

GWP value  
Max. 99 % reduction

**Non F-Gas (CO<sub>2</sub> Refrigerant) Thermo-chiller**

**HR□C Series**

**CO<sub>2</sub>\*2 (GWP 1)**

**Thermo-dryer**

**IDHA Series**

R134a (GWP 1430)

GWP value  
Max. 99 % reduction

**EU F-Gas Regulation Compatible Products**  
**Low GWP Refrigerant Compatible Thermo-dryer**

**IDHA Series (Option: F)\*1**

**R1234yf (GWP < 1)**

## Refrigerated Air Dryers

**Products subject to regulation**  
**Air Dryer**

**IDFA Series**

R134a (GWP 1430)  
R407C (GWP 1774)  
R410A (GWP 2088)

GWP value  
Max. 99 % reduction

**EU F-Gas Regulation Compatible Products**  
**Low GWP Refrigerant Compatible Air Dryer**

**IDFA Series (Option: F)\*1**

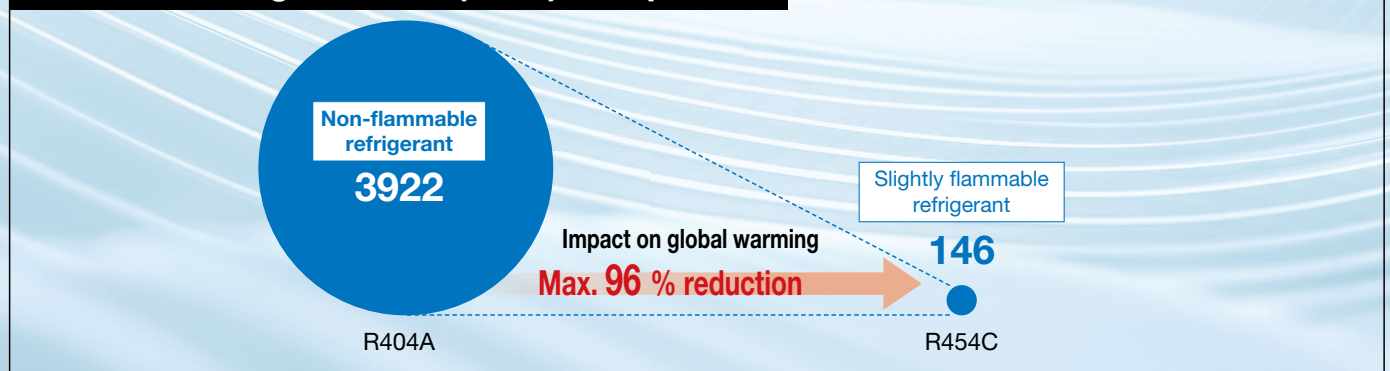
**R1234yf (GWP < 1)**  
**R454C (GWP 146)**

\*1 Scheduled to be released in 2024 or later. Contact your local SMC sales office for further details.

\*2 The refrigerant number that indicates the type of refrigerant specified by ISO 817 (International Organisation for Standardisation) is "R744."

\*3 The GWP values are values based on EU F-Gas Regulation 2024/573.

## Global Warming Potential (GWP) Comparison



# Refrigerant Regulations Overview

Item	EU F-Gas Regulation	
	Temperature Control Equipment (including IDHA)	Refrigerated Air Dryers
Subject of regulation	Products using refrigerants with a GWP value exceeding the regulation limit	
GWP value limit	① GWP ≥ 150 (12 kW or less) ② All fluorinated refrigerants (12 kW or less) ③ GWP ≥ 750 (Over 12 kW)	GWP ≥ 150
Regulation implementation date	①③ From January 1, 2027 ② From January 1, 2032	From January 1, 2025
Regulation details	Ban on customs clearance of products subject to the EU F-Gas Regulation into the EU	
Sale of inventory of products subject to regulation	Can be sold for 1 year from the regulation implementation date (within the EU)	
Exportation	Can be exported	Can NOT be exported
Maintenance	From January 1, 2025: Use of F-gases with a GWP of 2500 or more will be prohibited. Until January 1, 2030: Regenerated refrigerants can be used.	From January 1, 2025: Use of F-gases with a GWP of 2500 or more will be prohibited. From January 1, 2032: Use of F-gases with a GWP of 750 or more will be prohibited. Until January 1, 2030: Regenerated refrigerants can be used.
Refrigerant GWP	Non-flammable refrigerants; R134a: 1430, R404A: 3922, R407C: 1774, R410A: 2088 Slightly flammable refrigerants; R454C: 146, R1234yf: < 1	

\* The GWP values are values based on EU F-Gas Regulation 2024/573.



**Q1 Does the EU F-Gas Regulation (2024/573) apply only to EU member states?**

**A1** Yes, it only applies to EU member states. North, Central, and South America, Japan, Asia, and Oceania are not subject to the EU F-Gas Regulation.  
 \* For regions outside of the EU, be sure to comply with each region's refrigerant regulations.

**Q2 Which F-gases (refrigerants) will be affected by the ban?**

**A2** The F-gases used in SMC products subject to the regulations are as shown in the table below.

Refrigerant	GWP value
R134a	1430
R404A	3922
R407C	1774
R410A	2088

**Q3 What exactly does “Import into the EU will be prohibited” mean?**

**A3** It means there will be no customs clearance into EU Member States and the United Kingdom.

**Q4 Will it be possible to have maintenance done on temperature control equipment imported into the EU on December 31, 2026 or earlier and refrigerated air dryers imported into the EU on December 31, 2024 or earlier?**

**A4** There are restrictions relating to maintenance. Refer to the “Refrigerant Regulations Overview” page for further details.

**Q5 Can products subject to the EU F-Gas Regulation be transported by aircraft?**

**A5** As R454C and R1234yf are slightly flammable refrigerants, SMC products that use these refrigerants (with a refrigerant charge of 100 g or more) cannot be transported by aircraft. As CO2 is a non-flammable refrigerant, SMC products that use this refrigerant (with a refrigerant charge of less than 12 kg) can be transported by aircraft.

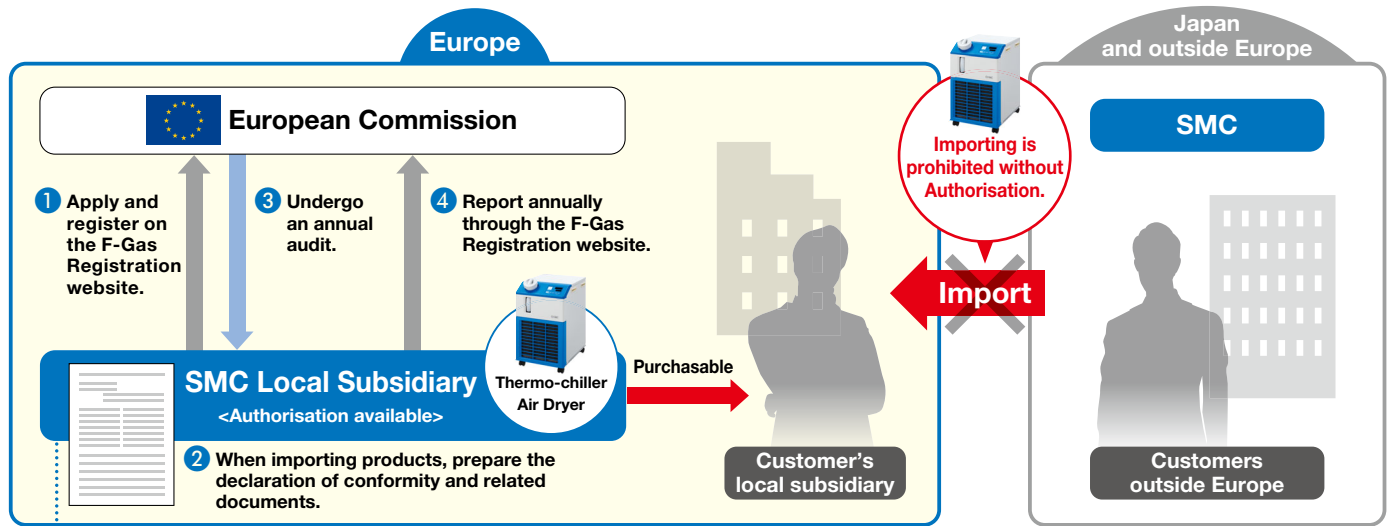
**Q6 How can I learn more about the refrigerants used in SMC products?**

**A6** The refrigerant used in each product is specified in the catalog, external appearance drawings, and on the label attached to the product.

**Q7 What is actually required to export temperature control equipment/refrigerated air dryers to the EU?**

**A7** The importer must apply and register on the F-Gas Registration website, obtain an “Authorisation,” prepare a “Declaration of Conformity,” undergo an audit, and provide an annual report. Especially for customer's products intended for use in the EU that use a refrigerant with an annual CO2 conversion amount of 10 t or more, an “Authorisation” is required. SMC Europe has already been granted an “Authorisation” for import. Therefore, we suggest purchasing such products from an SMC local subsidiary in order to avoid the troublesome import process.

# SMC's response to the EU F-Gas Regulation



## List of local subsidiaries of SMC Europe (with import quota licenses available)

Austria	SMC Austria GmbH
Belgium	SMC Belgium B.V.
Denmark	SMC DANMARK A/S
Finland	SMC Automation Oy
France	SMC France
Germany	SMC Deutschland GmbH
Ireland	SMC Industrial Automation (Ireland) Limited

Italy/Greece	SMC Italia S.p.A.
Latvia	SMC Automation SIA
Netherlands	SMC Nederland B.V.
Romania	SMC Romania S.r.l.
Spain/Portugal	SMC España S.A.U.
Sweden	SMC Automation AB

\* SMC Corporation (U.K.) Ltd. also possesses a UK quota.



## Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution,” “Warning” or “Danger.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)<sup>1)</sup>, and other safety regulations.

### Danger:

**Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

### Warning:

**Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

### Caution:

**Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

- 1) ISO 4414: Pneumatic fluid power – General rules and safety requirements for systems and their components.
- ISO 4413: Hydraulic fluid power – General rules and safety requirements for systems and their components.
- IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
- ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots.
- etc.

## Warning

### 1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

### 2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

### 3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

### 4. Our products cannot be used beyond their specifications. Our products are not developed, designed, and manufactured to be used under the following conditions or environments. Use under such conditions or environments is not covered.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, fuel equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogues and operation manuals.
3. Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.

## Caution

**We develop, design, and manufacture our products to be used for automatic control equipment, and provide them for peaceful use in manufacturing industries.**

**Use in non-manufacturing industries is not covered.**

Products we manufacture and sell cannot be used for the purpose of transactions or certification specified in the Measurement Act.

The new Measurement Act prohibits use of any unit other than SI units in Japan.

## Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”. Read and accept them before using the product.

### Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.<sup>2)</sup> Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.
- 2) Vacuum pads are excluded from this 1 year warranty.  
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

### Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

## Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

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