

Information on regulation (EU) 2024/573 concerning fluorinated greenhouse gases

(as of March 2024)



Pfannenbergl as a competent partner in sustainable production

The European Parliament has revised the F-Gas Regulation and this is now valid as Regulation (EU) 2024/573. Enclosure cooling units contain F-gases, which are necessary for their function, and therefore fall under this regulation. In this flyer, we inform you which points have a detailed influence on enclosure cooling and which steps Pfannenbergl is already taking.

Legal situation | Use of refrigerant

Pfannenbergs enclosure cooling units are hermetically sealed systems and condition the temperature of the air within a defined space. According to Annex IV of the F-Gas Regulation, enclosure cooling units are classified in Category 8 Group e:

STATIONARY AIR CONDITIONING SYSTEMS AND HEAT PUMPS

(8) Self-contained air conditioning and heat pump equipment, except chillers, that:	e) Other self-contained air-conditioning and heat pump equipment that contain fluorinated greenhouse gases with GWP of 150 or more, except when required to meet safety requirements. When safety requirements would not allow using fluorinated greenhouse gases with GWP of 150 or less, the GWP limit is 750.	Date of the ban: 01.01.2030
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Refrigerants with a GWP (Global Warming Potential) of less than 150 pose a challenge for enclosure cooling because they are sometimes flammable or have unfavorable material properties. The use of flammable refrigerants is described in the harmonized standard DIN EN 378. According to this standard, 150g of flammable refrigerant is always permissible as long as the refrigeration system is manufactured in such a way that escaping refrigerant cannot collect in areas where there is a source of ignition. As there are various potential ignition sources in an enclosure, which also has a small internal volume, such as switches or contactors, DIN EN 378 together with our product standard EN 60335-2-40 for enclosure air conditioning cannot be applied without restriction. It can therefore be assumed that additional safety requirements must be met for cooling units in enclosure air conditioning due to the confined installation space, which justifies the use of a refrigerant with a GWP of 750 even after 2030.

The F-Gas Regulation defines "safety requirements" in the definition no. 42 as follows:

"Safety requirements" means requirements on the safety of using fluorinated greenhouse gases and natural refrigerants or products and equipment containing or relying on them, [...] due to site and application specificities that are either:

- (a) set out in Union or national law; or
- (b) set out in 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 line with relevant Union or national law.

Impact on the application

Refrigerants with a GWP of less than 150 pose a challenge for enclosure cooling because they are sometimes flammable or have unfavorable material properties.

There are various ignition sources in an electrical enclosure, including main switches, contactors, relays and circuit breakers. In the event of a leakage, refrigerant could enter the switch cabinet. There is a risk that an ignitable mixture could form and cause ignition. Therefore, from a current perspective, flammable refrigerants with a GWP of less than 150 cannot be used in enclosure air conditioners without further efforts.

Reaction by Pfannenbergs

New enclosure cooling units from Pfannenbergs will be equipped with the safety refrigerant R513A in 2024, which has a GWP of 631.

Pfannenbergs is therefore already implementing the future requirements of the new F-Gas Regulation, enabling our customers to plan for the long term without additional safety risks. Development does not stop at refrigerants either. Pfannenbergs is investigating various alternatives in order to be able to offer the right solution at all times. Both natural refrigerants and new refrigerants that are still being developed by the manufacturers are taken into account.

What happens to existing installations?

Article 13 of the regulation describes a ban on the use of new, non-recycled refrigerant from January 1, 2032 for maintenance work with a GWP greater than 750. Consequently, refrigeration appliances equipped with R134a may not be charged with new refrigerant. Refilling with recycled R134a is still permitted.

Impact on the application

The European Union's Green Deal provides for a drastic reduction in CO2 emissions. As a result, there will be a severe shortage of refrigerants with a high GWP in the future. If a cooling unit needs to be refilled with R134a during maintenance, this can lead to higher costs.

Reaction by Pfannenber

Pfannenber checks the costs with every service. If the appliance is due to be refilled during maintenance, it will be checked whether it is cheaper to replace it with a modern appliance with new refrigerants.

Legal situation | Export ban

Article 22 of the regulation states that from March 12, 2025, no products containing F-gases that are not already regulated in Annex IV of the regulation and that have a refrigerant with a GWP greater than 1000 may be exported.

Impact on the application

Pfannenber assigns its enclosure cooling units to Annex IV (8) - e). Therefore, the export ban on enclosure cooling units with refrigerants with a GWP greater than 1000 does not apply until January 1, 2030.

Reaction by Pfannenber

New refrigerators are already being equipped with R513A, a refrigerant with a GWP of 631. Refrigeration appliances that are currently still equipped with R134a will be gradually converted so that no more refrigeration appliances with a refrigerant with a GWP greater than 750 are placed on the market by 2030. This will ensure long-term planning for the export of appliances.

Do you have any further questions about the EU regulation concerning fluorinated greenhouse gases?



Our Global Product Manager Christoph Kähler will be happy to help you ensure the sustainability of your enclosure cooling units at:

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One Pfannenberg for Our Customers – We are constantly working to develop the best and most sustainable products for you..

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Hamburg (DE) - HQ	Suzhou (CN)
Rotherham (UK)	St. Petersburg (RU)
Fidenza (IT)	Indaiatuba (BR)
Lancaster N.Y. (US)	Łódź (PL)
Singapore (SG)	

In addition, we at Pfannenberg work in partnership with sales representatives and regional agents worldwide in order to be able to present our product portfolio to you.

Sustainability

We combine the flexibility of a family-run company with the agility of a global corporation. In our work, we emphasize the importance of combining tradition with innovation in order to be able to act in a future-oriented manner.

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