VAN DER HEIJDEN
Labortechnik GmbH

cool solutions - your advantage

REGULATION

EU 2024/573

New Regulations.
Working together for a
sustainable future.

PROTECT THE ENVIRONMENT | UNDERSTANDING RULES | FUTURE PLANNING

PUBLISHED BY

Van der Heijden Labortechnik GmbH
Tramsmeiers Berg 2 • DE-32694 Doerentrup/Germany
Telephone: +49 5265 94 55 20 • Fax: +49 5265 94 55 210
E-Mail: info@vdh-online.com • Web: www.vdh-online.com

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Legal Notice / Disclaimer

This document is intended solely for general information and guidance regarding Regulation (EU) 2024/573, which was published on February 7, 2024, as well as the enclosed documents, exemptions, and published corrections. It does not constitute legal advice in individual cases and does not replace consultation with a qualified attorney, a specialist in the relevant field, or another competent authority. Despite careful preparation, we assume no liability for the completeness, accuracy, or timeliness of the information contained herein. The company shall not be liable for any actions taken based on this document. The information obligations of users and distributors remain unaffected by the publication of this document. In the event of any questions, Van der Heijden Labortechnik GmbH refers to the official website of the European Union, where all information is written down in detail. Regulation (EU) 2024/573 and the associated Annex IV must be considered.

Purpose and Basic Principle of Regulation (EU) 2024/573

The F-Gas Regulation governs the phase-down of HFCs in the European Union (EU) with the aim of drastically reducing refrigerants with a high global warming potential (GWP). The EU has significantly tightened the phase-down schedule, and quantities will be gradually reduced to zero by 2050. Depending on the application, certain bans will take effect earlier. The focus is on reducing emissions and promoting climate-friendly alternatives such as R290. Unlike a blanket ban, the EU uses a quota and ban system that remains predictable but gradually and significantly restricts new products with high GWP values. The regulation relies on bans from Annex IV of the EU F-Gas Regulation (EU) 2024/573 and special rules.

What are F-gas quotas?

F-gas quotas are annual licenses allocated by the European Commission for the production and import of HFCs, which are being gradually reduced. EU manufacturers require quotas for pre-charged equipment, as sales on the market are illegal without sufficient availability. Quotas are tradable, but EU importers (not exporters) apply for them and verify quota certificates with suppliers. Examples of quota holders can be found on the European Union's F-Gas Portal.

This document is specifically tailored to the refrigerants used and distribution channels of Van der Heijden Labortechnik GmbH. This means that not all regulations of Regulation (EU) 2024/573 are covered here; rather, the aim is to provide an overview of existing deadlines and the corresponding next steps within the context of the phase-down curve. Likewise, not every refrigerant subject to the regulations of Regulation (EU) 2024/573 is listed here. The obligation of users and distributors to provide information is not waived by the publication of this document. Annex IV of Regulation (EU) 2024/573 should be consulted if questions arise.

For inquiries, Van der Heijden Labortechnik can be contacted at any time via the usual contact channels.

The information regarding Regulation (EU) 2024/573 and the overviews contained in this document reflect our current understanding and are provided for general information purposes regarding the subject matter described. They do not claim to be exhaustive and do not relieve the user of the obligation to independently seek further information regarding the specific application and facility, nor do they exempt the user from complying with the relevant legal regulations and requirements.

The F-Gas Regulation (EU) 2024/573 simply explained

Regulation (EU) 2024/573 governs the placing on the market of fluorinated greenhouse gases and related products in the European Union. Temporary exemptions apply for certain laboratory applications and other areas of use, which are listed on the websites of the European Commission and the German Federal Environment Agency (FAQ 9.8). However, an extension of these exemptions is considered unlikely. Unless an exemption applies, the provisions of Annex IV of the Regulation apply. For the placing on the market of hydrofluorocarbons (HFCs), a corresponding quota is generally required, which must also be documented to customers in accordance with the Chemicals Act.

The Regulation clearly distinguishes between the initial placing on the market and the repair or maintenance of existing equipment. If an existing appliance is replaced by a new appliance using, for example, R134a (GWP: 1430), this constitutes a new placing on the market, which is no longer permitted after the respective phase-out deadlines. In contrast, appliances placed on the market before January 1, 2026, may continue to be operated, maintained, and repaired.

The term “repair” also includes service work performed at the company’s own service facility, including the replacement of refrigerant. At present, new refrigerant may generally be used freely for maintenance or repair. However, this is only permitted to the extent that the relevant prohibition does not apply to the specific system and the specific refrigerant. This must be verified before commissioning, or service work begins. In the case of repairs, the measure must not result in the system being operated with another prohibited or unauthorized refrigerant. The reference to a quota via the supplier pertains to the placing on the market of the refrigerant within the quota system, not automatically to all service work. A restriction will apply starting January 1, 2032: For maintenance and repair purposes, only recycled or reclaimed refrigerant may be used within the respective prohibition limits.

Example: R134a

A unit has been running at a Van der Heijden Labortechnik GmbH customer’s site since January 2020 and now needs to be repaired due to a technical defect. As part of the repair, the existing R134a (GWP: 1430) must be replaced with new R134a. Currently, new R134a may still be used for maintenance or repair work, provided it can be procured and is subject to a documented quota. The device can also be sent to the manufacturer’s service department for maintenance.

Replacing an R134a unit with a new R134a unit, however, constitutes the first placing on the market of a new product and is no longer permitted according to the phase-out dates in Annex IV of Regulation (EU) 2024/573.

Significance of the GWP Value

The GWP value (Global Warming Potential) describes a refrigerant's global warming potential relative to CO_2. The higher the GWP value, the greater the impact a refrigerant has on the climate and the stricter the regulatory requirements. Regulation (EU) 2024/573 therefore does not contain a blanket ban on all F-gases starting in 2026 but instead introduces a GWP- and application-based phased plan with quotas, restrictions on placing on the market, and restrictions on use.

Regulations at the EU Level

Regulation (EU) 2024/573 has been in effect since March 11, 2024. It tightens phase-down quotas and imposes additional bans on certain products, equipment, and uses of fluorinated greenhouse gases. The rules therefore apply not only to the refrigerant itself, but also to the placing on the market of systems and their permitted use in specific applications. Different deadlines and limits apply to individual applications, which is why the specific system and the refrigerant used must always be checked before procurement or export.

National Provisions

In addition to EU law, member states may establish supplementary national regulations or specify enforcement measures. In Germany, for example, the Chemicals Climate Protection Ordinance applies as a supplement. It contains requirements regarding expertise, certification, and enforcement and is being adapted to the new EU regulation. Countries such as the Netherlands and Austria also have additional requirements. Therefore, before an export or installation in the destination country, it must always be checked whether national requirements apply in addition to the EU regulation.

Life Cycle – Environmentally Friendly Solutions

We care about the environment, which is why we use the natural refrigerant R290.

Van der Heijden Labortechnik has been developing and manufacturing high-quality recirculating and circulation chillers for laboratories, research, science, and industry for over 50 years. Our focus is not only on technical performance but also on a holistic, sustainable approach—from the product development of customized cooling solutions to the operation of our production facility. The life cycle assessment of our cooling systems reflects this consistent environmental awareness.

Environmentally Friendly: R290 as the Benchmark

A central element of the environmental strategy is the use of the natural refrigerant R290 (propane). It is used in many models, such as MINORE® and KÜHLMOBIL. R290 has a low global warming potential (GWP ≈ 3) and no ozone depletion potential (ODP = 0). By switching to this environmentally friendly refrigerant early on, Van der Heijden Labortechnik has taken a decisive step toward climate protection—a step that was implemented years ago and now sets the standard in the industry.

Refrigerant R290

With an extremely low GWP value of 3, R290 (propane) represents a particularly future-proof and environmentally friendly solution. It already meets the strict requirements of the EU F-Gas Regulation (EU) 2024/573, thereby offering long-term planning security—even beyond future regulatory tightening.

R290 is suitable for new systems, provided safety requirements are met. Using this natural refrigerant not only ensures reliable compliance with legal requirements but also significantly reduces the carbon footprint. The only provision regarding hydrocarbons in the EU F-Gas Regulation (EU) 2024/573 concerns the certification of individuals and companies. Initial coordinated information on this can be found in the Q&A´s of the Federal Environment Agency of Germany. Once the revised Chemicals and Climate Protection Ordinance enters into force, a clear statement from the enforcement authorities is expected regarding the deadline and exact procedure for obtaining these certificates. Until the date of publication of this version, all specific activities may still be conducted without a certificate. After that, the new ordinance must be reviewed, and appropriate steps taken accordingly.

General Information

The GWP value of R290 is 3, which is well below the current and future limits set by the F-Gas Regulation. Compared to synthetic refrigerants such as R449A, this results in a significant reduction in global warming potential, making R290 a sustainable alternative for many applications.

R290 belongs to safety class A3. This means it is non-toxic but flammable. Therefore, appropriate safety measures must be considered during planning, installation, and operation. When used properly and in compliance with applicable standards, safe use in commercial and industrial applications is easily achievable. However, a risk assessment of the installation site and the local environment must always be considered.

In the medium term, increasingly stringent GWP limits will apply to chillers—depending on their respective capacity. A limit of 150 is considered decisive. As a result, natural refrigerants such as R290 (propane) are becoming increasingly important as alternatives to fluorinated refrigerants.

However, the various refrigerant alternatives come with specific technical requirements. For example, R290 is highly flammable and operates at significantly higher pressures. This necessitates advanced technical expertise for design, installation, maintenance, and operation.

The current F-Gas Regulation addresses these developments through stricter training and certification requirements. In addition, training on the safe handling of refrigerants and natural refrigerants is now a mandatory component of the qualification. Please be sure to refer to the current version of the Chemicals and Climate Protection Regulation.

Refrigerant R449A

Van der Heijden Labortechnik GmbH specifically uses R449A as a transitional solution in refrigeration systems to ensure safe and compliant continued operation. Particularly in the service sector, this refrigerant allows for practical adaptation to current regulatory requirements without the need for extensive system conversions at short notice.

In accordance with the provisions of Regulation (EU) 2024/573, R449A, with a GWP of 1397, supports the continued operation of existing systems while providing the necessary flexibility to strategically plan for future transitions. Given its relatively high GWP value and further-declining limits, its use is deliberately considered a temporary solution.

At the same time, Van der Heijden Labortechnik GmbH is pursuing a clear focus on natural refrigerants such as R290, which have an exceptionally low global warming potential and represent a sustainable alternative in the long term. New systems and new developments are therefore preferably designed around these future-proof solutions.

In existing systems, R449A continues to offer the advantage of being able to be used without extensive technical modifications. This enables cost-effective operation until the planned transition to natural refrigerants.

Regardless, R449A meets safety class A1 requirements and is neither flammable nor toxic, ensuring safe use in sensitive laboratory and application areas.

Refrigerant R513A

For Van der Heijden Labortechnik GmbH, the R513A refrigerant represents a forward-looking and more environmentally conscious solution in the field of refrigeration and air conditioning technology. It offers high thermal efficiency, excellent chemical stability, and reliable performance in sensitive applications.

Especially in laboratory environments, where precise temperature control and operational reliability are critical, R513A is ideally suited for use in refrigeration units, air conditioning systems, and demanding process cooling applications. The refrigerant's properties support stable operating conditions and contribute to quality assurance in analytical and technical processes.

As a non-ozone-depleting refrigerant based on modern hydrofluoroolefins (HFOs), R513A has a significantly reduced global warming potential (GWP approx. 631). It thus offers a more environmentally friendly alternative to conventional refrigerants without compromising on performance.

R513A was specifically developed as a replacement for R134a and is particularly suitable for applications in the medium-temperature range, such as those commonly found in laboratory and industrial refrigeration systems.

Refrigerant R134a

In numerous existing systems, R134a (1,1,1,2-tetrafluoroethane) continues to serve as the technical foundation for reliable refrigeration and air conditioning processes at Van der Heijden Labortechnik GmbH. Due to its long-standing use, systems, components, and operating parameters are optimally tailored to this refrigerant, enabling stable and predictable operation.

A key advantage lies in its safety characteristics. R134a is neither flammable nor toxic and is classified as safety class A1. This makes it particularly suitable for applications with high requirements for operational safety and controlled operating conditions, such as in laboratory and testing environments.

At the same time, R134a is subject to regulatory restrictions as a fluorinated greenhouse gas. The requirements of Regulation (EU) 2024/573 mean that its use is increasingly focused on existing systems and will lose significance in the long term. Even today, its use is already severely restricted by the quota system.

Against this backdrop, Van der Heijden Labortechnik GmbH is increasingly focusing on the development of sustainable alternatives. Natural refrigerants such as R290 are becoming particularly important in this context, as they represent a long-term, sustainable, and environmentally friendly solution.

R134a will therefore continue to be used specifically where existing systems require it, while new projects will be consistently geared toward sustainable refrigerants.

Refrigerant Summary

Refrigerant	GWP	Ozone-depleting potential	Safety class	Rating / Status
R134a	Approx. 1430	0	A1	A greenhouse gas, subject to increasing regulation and growing scarcity
R449A	Approx. 1397	0	A1	A temporary solution, but one that still has a significant global warming potential
R513A	Approx. 631	0	A1	A modern, significantly more environmentally friendly alternative to R134a
R290	Approx. 3	0	A3	Very low GWP, natural refrigerant (NR) as a future-proof solution considering Regulation (EU) 2024/573

Customer information

A Our data sheets, user manuals, and nameplates provide information on the GWP value of the refrigerant used and the CO2 equivalent of the entire system. If you require additional information or need an environmental product declaration, please feel free to contact your designated representative, and we will provide you with further details or find a solution.

VAN DER HEIJDEN Labortechnik GmbH

Typ KÜHLMOBIL 142-A-B400-1B-16F-18D, Gr. 08

Spannung:	230VAC/50Hz (1Ph+N+PE)		
Leistungsaufnahme:	2,45 kW	Stromaufnahme max.:	13,5 A
Förderleistung:	600 l/h bei 5,5 bar	Förderdruck max.:	6,2 bar

Kältemittel: R134a, Füllgewicht max. 2,0 kg, Betriebsdruck max. 18 bar, CO2 eq 2,860 t, GWP 1430
Kälteleistung: 2900 Watt bei 20,0°C VT und 32,0°C UT

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Bitte vor Inbetriebnahme beachten!

1. Unbedingt die Kühlflüssigkeitspumpe entlüften.
2. Behälter des KÜHLMOBILs bis 2,5cm unter den Rand mit Kühlflüssigkeit füllen.
4. Den Vorlauf öffnen und warten bis das Kühlmedium bedingt durch das natürliche Gefälle blasenfrei in den Eimer fließt.
5. Gerät anschließen.
6. Nun entlüftet die Pumpe das System automatisch, eventuelle Nachfüllung erforderlich.
7. Bitte beachten Sie die Betriebsanleitung!

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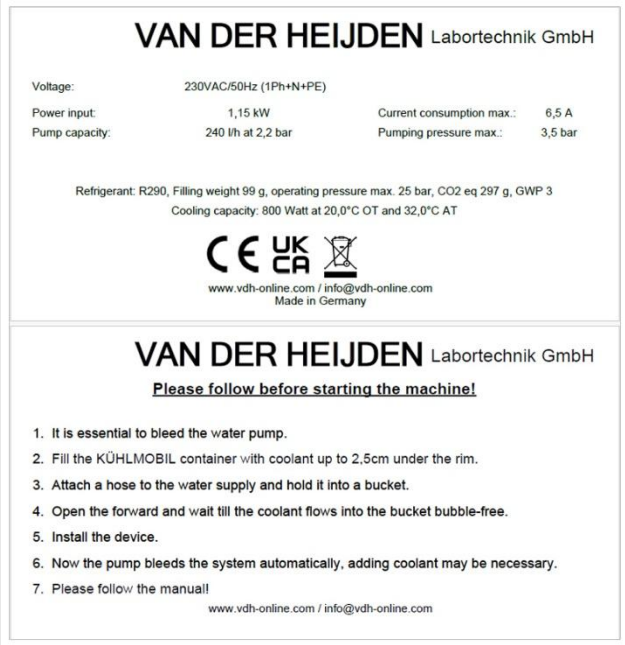

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Voltage:	230VAC/50Hz (1Ph+N+PE)		
Power input:	1,15 kW	Current consumption max.:	6,5 A
Pump capacity:	240 l/h at 2,2 bar	Pumping pressure max.:	3,5 bar

Refrigerant: R290, Filling weight 99 g, operating pressure max. 25 bar, CO2 eq 297 g, GWP 3
Cooling capacity: 800 Watt at 20,0°C OT and 32,0°C AT

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Please follow before starting the machine!

1. It is essential to bleed the water pump.
2. Fill the KÜHLMOBIL container with coolant up to 2,5cm under the rim.
3. Attach a hose to the water supply and hold it into a bucket.
4. Open the forward and wait till the coolant flows into the bucket bubble-free.
5. Install the device.
6. Now the pump bleeds the system automatically, adding coolant may be necessary.
7. Please follow the manual!

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Overview of your responsibilities and tasks

The topic of the F-Gas Regulation and its associated restrictions is a complex area. We are happy to assist you, within the scope of legal possibilities, in evaluating your existing plant inventory, selecting suitable refrigerants, and designing compliant cooling and temperature control solutions.

In addition, there are several points you as a customer need to consider:

- **Create an asset inventory: Systematically record all refrigeration and temperature control systems, including refrigerant type, charge volume, year of manufacture, location, and other data.**
- **Evaluate the refrigerant portfolio: Review the refrigerants in use for their GWP value, permitted applications, and future availability in accordance with current regulations.**
- **Establish leak management: Define and implement leak test intervals based on charge volume and GWP thresholds and document all tests and measurement results.**
- **Conduct a risk assessment: A risk assessment brings together various experts and perspectives, enabling us to mitigate risks associated with the planning, installation, and ongoing operation of our systems**.
- **Ensure that personnel and service providers are qualified: Use only certified specialized companies for work on F-gas systems and provide regular training for technical staff on legal requirements.**
- **Regulate refrigerant handling: Implement established processes for the recovery, treatment, transport, and disposal of refrigerants through authorized disposal or treatment facilities.**
- **Maintain technical documentation: Maintain and update system documentation (schematics, parts lists, leak test reports, maintenance reports, retrofit records) to provide evidence to authorities and auditors.**

Comparison: Carbon footprint of R290 and R134a system

To highlight the sustainability benefits of switching to R290, we have prepared a sample comparison of existing systems operating on R290 and R134a. Since R134a is a widely used

solution, we have chosen it for this comparison. However, you can always contact your representative at Van der Heijden Labortechnik for a customized comparison of your system inventory or a specific chiller.

The available data shows that CO_2 emissions from R290 systems range from approximately 0.00024 to 0.000297 t CO_2 per unit. In contrast, R134a systems generate refrigerant-related emissions of approximately 0.715 t CO_2 per unit. This means that the CO_2 footprint of an R134a system is significantly higher than that of a comparable R290 system with a similar refrigerant charge.

Global Warming Potential (GWP)

R290 has a GWP of 3 and an Ozone Depletion Potential (ODP) of 0, making it one of the refrigerants with an exceptionally minimal impact on the climate.

R134a has a GWP of 1430 and thus contributes significantly to the greenhouse effect. It belongs to the hydrofluorocarbons (HFCs), which have a strong impact on the climate.

Regulatory and Environmental Assessment

Due to its high GWP, R134a is increasingly subject to regulatory restrictions. International and European requirements, particularly the F-Gas Regulation—aim to significantly reduce or replace refrigerants with high GWP values. R290 meets these requirements much better, is considered a future-proof natural refrigerant, and is described in technical literature and manufacturer publications as a particularly environmentally friendly alternative with a minimal carbon footprint. In addition to the refrigerant's extremely low CO_2 emissions, R290 systems can achieve high energy efficiency depending on the system design. This also reduces indirect CO_2 emissions from electricity generation.