

Are you aware of the proposals for **F-Gas regulation update and PFAS ban?**

To speed up the Green Deal, the European Union could ban - even sooner than expected - the most common refrigerants.

This means from Jan 1, 2025 you might not be allowed to install new industrial chillers with several currently used refrigerants.

PFANNENBERG IS READY TO SUPPORT YOU IN FINDING THE RIGHT SOLUTION WITH

**Natural
Refrigerants**



TODAY

F-GAS Regulation 517/2014

Intends to reduce the EU's F-gas emissions by 2/3 by 2030 compared with 2014 levels, by limiting the production and the use of greenhouse refrigerants gas with high GWP (global warming potential) and banning the use of F-gases in many new types of equipment where less harmful alternatives are widely available.

REACH regulation 1907/2006

of the European Parliament concerns the Registration, Evaluation, Authorisation and Restriction of Chemicals and aims to improve the protection of human health and the environment from the risks that can be posed by chemicals.

TOMORROW

F-GAS Regulation update proposal

On 5 April 2022, the European Commission made a legislative proposal for a much stronger shift to very low GWP refrigerants in the coming years. **From Jan 1, 2025 any self-contained refrigeration equipment must use refrigerants with GWP < 150.**

REACH regulation update proposal

On 7 February 2023, the European Chemicals Agency (ECHA) published a proposal to **ban from Jan 1, 2025 the use of a long list of refrigerants, components of which break down very slowly over time (PFAS), despite having very low or zero GWP.**

The combined effect of these updates leads to **a push towards a shift to natural refrigerants.**

WE ARE READY FOR IT!

Upcoming Pfannenbergl Liquid Cooling Solutions for a Sustainable future

R290
GWP = 3
PFAS free

Fully compliant NATURAL REFRIGERANT
GWP = 3 and PFAS free

Propane is cost-effective and naturally occurring in good supply, has excellent thermodynamic properties as a refrigerant and can be used in a wide variety of appliances.

R32
GWP = 675
PFAS free

Possible Alternative for safety reasons and BESS market
GWP >150 but PFAS free

Despite exceeding the GWP limit, it could be used when it comes to applications where the flammability of natural refrigerants is an issue or the application is Battery Energy Storage, being the latter out of focus in these regulation proposals.



R744
GWP = 1
PFAS free

Fully compliant NATURAL REFRIGERANT
GWP = 1 and PFAS free

Carbon dioxide is also a good environmentally friendly option we are investigating.

Upcoming Pfannenberg **Liquid Cooling Solutions** for a Sustainable future

COMPACT UNITS FOR SAFE INDOOR USAGE

INDOOR CHILLERS

1-36 KW

- Small compact units with R290
- Mid-sized units up to 20 kW with either R290 or R32
- PWW passive systems up to 36 kW - without any refrigerant



HIGHER CAPACITY UNITS REQUIRING OUTDOOR INSTALLATION

OUTDOOR CHILLERS

UP TO 50 KW

- Larger units with higher capacities of up to 50 kW
- Using R290 (larger propane quantities usually lead to installing the unit in outdoor environments)

SYSTEM ENGINEERING WITH DIFFERENT SETUPS

ENGINEERED SOLUTIONS

UP TO 50 KW

System engineering in different setups including:

- Indoor / outdoor chillers combined with passive indoor solutions able to cool both processes and electrical cabinets
- Smart piping solutions
- Installation and commissioning
- Customized solutions



WANT TO KNOW MORE?

Explore our "Natural Refrigerants Chillers" web page for more detailed information on our liquid cooling solutions or contact us.



web page



contact form

Pfannenberg Your global partner for thermal management

- Over 60 years of experience in thermal management, signaling technology and liquid cooling
- Ability and flexibility to develop tailor-made solutions in cooperation with the customer
- Experience with maintenance and support of projects around the world
- Global presence with several own production sites
- Global service network
- You can find an overview of our international network [here](#).



● Sales office and production ● Sales office ● Sales partner ● Direct sales

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