



# What is F-gas and why should you be paying more attention?

## Factsheet

Regulations around the use of F-gases (also known as fluorinated gases) have become increasingly stringent over the last few years, and many businesses are unknowingly breaking laws.

F-gas is most commonly thought of as an issue for the refrigeration and cooling industries, where their use is most prevalent. But, these gases can also be present in solvents, which affect a much wider variety of industry sectors. As a result, many businesses are unaware that these significant changes apply to them.

F-gases are man-made, and the most common in the EU are hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride. These were favourable for a time because they do not harm the ozone layer, have low toxicity, and are non-flammable. However, later research has found that in contrast, they have a very high Global Warming Potential (GWP).

Global warming is a gradual increase in the overall temperature of the earth's atmosphere, generally attributed to the greenhouse effect, caused by increased levels of carbon dioxide, CFCs, and other pollutants. GWP is used to represent the equivalent of Co2 being released into the atmosphere.

So 1kg of Co2 = a GWP of 1. In the case of F-gases, they have a GWP of up to 11,000.

**UK position (current):** The UK operates the retained version of EU Regulation 517/2014 under UK REACH, administered by the Environment Agency and the Health and Safety Executive. This requires an 80% reduction in F-gas use by 2030 compared with 2014 levels and sets mandatory leak-check, record-keeping and recovery obligations for operators of equipment containing F-gases above defined thresholds.

**EU position (for reference):** The EU updated its F-gas regulation in 2024. Regulation (EU) 2024/573, adopted on 7 February 2024 and in force since 11 March 2024, replaces Regulation 517/2014 in EU member states and the EEA. It sets a steeper HFC phase-down targeting full phase-out by 2050, tightens leak-check thresholds and extends the quota system. UK businesses selling products or equipment into the EU must be aware of these requirements even though they do not apply domestically.

To achieve this, the current Regulation limits how much F-gas can be sold in Europe and bans the use of F-gases in new equipment where alternatives with a lower GWP are widely available. It also aims to prevent F-gases emitting from existing equipment by outlining mandatory checks and servicing, and controlling the safe recovery of the gases at the end of the equipment's life cycle. And while the presence of F-gases is most common in equipment for refrigeration or cool air systems, they can also be found in solvents and older fire protection systems, and must be monitored in the same way.

While these regulations may mean inconvenient changes for some businesses, it is not something that can be ignored. It is a criminal offence to leak F-gases, and many operators are completely unaware. Others are choosing to ignore the rules as they believe they're not being enforced; but this is a big risk. With environmental awareness and action dominating political and news agendas, any policies and regulations around environmentally harmful practices are only going to become tighter.

Now is the time to implement changes to protect businesses, and protect the earth.

# How to Comply with F-Gas Regulation

According to the Fluorinated Greenhouse Gases Regulations (**EU Regulation 517/2014**), the operators of any equipment using or containing F-gases must ensure the equipment is leak tested to specific standards. If a leak is detected, the equipment must be immediately removed from use and repaired, and then remedial checks are to be carried out within one month.

**UK (retained Regulation 517/2014):** Stationary equipment containing F-gases at 5 tonnes CO<sub>2</sub> equivalent or more requires regular leak checks, record-keeping and, where applicable, a fixed leak detection system. Equipment containing 50 tonnes CO<sub>2</sub>e or more requires leak checks every six months; 500 tonnes CO<sub>2</sub>e or more, every three months.

**EU (Regulation 2024/573):** The leak-check threshold has been tightened significantly. Equipment containing 5 tonnes CO<sub>2</sub>e or more of F-gases is now subject to mandatory leak checks.

Hermetically sealed equipment requires checks at 10 tonnes CO<sub>2</sub>e or more. Record-keeping obligations follow the same thresholds.

Examples of records required for stationary equipment include:

- the type and quantity of F-gases used
- details of any services carried out on the equipment
- details of every leak test conducted on the system

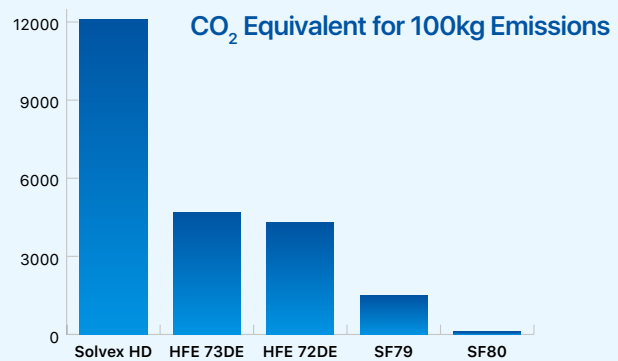
Also all equipment must be labelled with the type and quantity of F-gas contained within.

Identifying which solvents contain F-gas should be fairly straightforward – the drum should by law show the presence of any F-gas within. Additionally, the Material Safety Data Sheets should be the latest versions for all solvents used, and any F-gases should be clearly listed.

## What are the Alternatives to F-Gases?

The effects of F-gas Regulation and the restrictions it places on production are being felt across the market, as quotas for manufacturers are dropping and costs are increasing as a result.

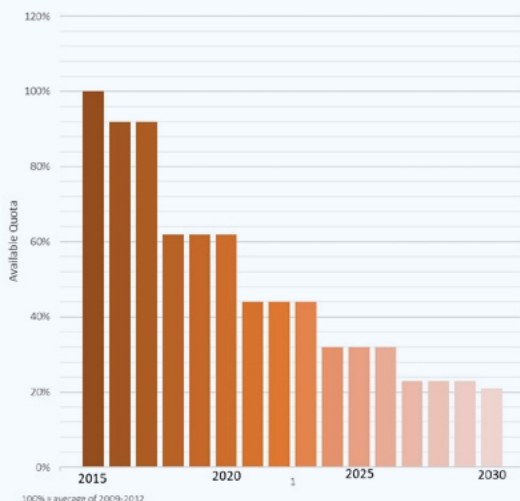
One of the reasons the EU has placed restrictions on F-gas in particular is because so many environmentally friendly alternatives are available, so it is important to explore these options. For solvents, a new generation of cleaning solutions are just as effective as those containing F-gases. In most cases, they also make cleaning processes more efficient and more cost-effective, as well as minimising environmental impact. Solvents such as the Opteon™ range from Chemours™ were specifically developed to be safe for users and for the environment.



**Opteon™ SF80**, which is the newest product in the range and has an ultralow GWP of less than 2.5, is a non-flammable, fast drying cleaning solvent that works well as a replacement for hydrofluorocarbons and perfluorocarbons as well as high GWP HFE's currently noted in annex 2 of F-gas regulations. It is well-suited for vapour degreasing, precision cleaning and the removal of greases and oils; and to clean a variety of soils from mechanical components, electronics, optics, and military hardware. These solvents are also increasingly replacing commonly used heat transfer fluids. With quantities of F-gases decreasing, and costs escalating, businesses currently using F-gases in their equipment, and in particular those using solvents containing F-gases for industrial applications, should look to the future and to the alternatives. These regulations are not going away, and when there are choices available that deliver equal results, are more cost-effective, and reduce environmental impact, the time to embrace the change is now.

**In the UK, F-gas use is scheduled to be reduced by 80% over the 15 years to 2030 compared with 2014 levels and sets mandatory leak-check, record-keeping and recovery obligations for operators of equipment containing F-gases above defined thresholds.**

## HFC Phase Down Schedule CO<sub>2</sub>e Basis, in %



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