

EU F-Gas Regulation Guidance

Information Sheet 8: Aerosols

Target audience for this Information Sheet

This information sheet is aimed at companies that manufacture, import, sell or use aerosol products using HFC propellants.

1. Background

This guidance is for organisations affected by the 2014 EU F-Gas Regulation (517/2014). The F-Gas Regulation creates controls on the use and emissions of fluorinated greenhouse gases (F-Gases) including HFCs, PFCs and SF₆.

In the aerosol sector, the F-Gas Regulation affects the use of HFCs as propellants and solvents. The 2014 EU F-Gas Regulation replaces the 2006 Regulation, strengthening all of the 2006 requirements and introducing a number of important new measures.

The F-Gas Regulation is an important piece of legislation that will result in significant reductions in the emissions of F-Gases. These are very powerful greenhouse gases, with global warming impacts that can be several thousand times higher than CO₂ (per kg of gas emitted). All EU Member States agree that it is important to reduce emissions of these gases.

This Information Sheet describes the requirements that apply to aerosol products. Further guidance is available – see Information Sheet 30 for a full list and a glossary of terms.

Aerosol Products: Compliance Checklist for EU F-Gas Regulation

Placing on the market of new aerosol products

- ✓ Ban of **one-component foam aerosols** using F-Gases with GWP above 150 from 2008*
- ✓ Ban of **novelty aerosols and signal horns** using HFCs with a GWP above 150 from 2009
- ✓ **NEW:** Ban of **technical aerosols** using HFCs with a GWP above 150 from **2018****
- ✓ **NEW:** aerosols containing F-Gases must be labelled from **1st January 2015*****

End-of-life requirements

- ✓ Recovery of F-Gases required at end-of-life from aerosols where it is *“technically feasible and does not entail disproportionate cost”*

Import reporting requirements

- ✓ **NEW:** Mandatory annual reporting of HFCs and HFOs in imported products

* Except when required to meet national safety standards

** Exemptions from the 2018 ban for medical applications and for aerosols requiring HFCs to meet national safety standards

*** Exemption to labelling requirement for metered dose inhalers for the delivery of pharmaceutical ingredients

2. Sector description

All aerosols require a propellant to force product through the aerosol nozzle. Historically CFC propellants were widely used. Since the phase out of CFCs under the EU Ozone Regulations, many aerosol types moved away from fluorocarbon propellants to alternatives such as hydrocarbons (HCs) and dimethyl ether (DME). Where flammability is a key issue HFCs are used, including HFC 134a and to a lesser extent HFC 152a.

All domestic aerosols (e.g. for personal hygiene or household products) have switched to use of HCs and DME. A wide range of “technical aerosols” use HFCs, mainly because of the importance of a non-flammable propellant; examples include pressure dusters, aircraft insecticide spray, mould release sprays, cryogenic freeing sprays and industrial lubricants. Metered dose inhalers (MDIs) are specialist aerosols used for drug treatments (e.g. asthma inhalers). All MDIs sold in the UK use HFC propellants.

The 2006 F-Gas Regulation banned one component foam (OCF) and novelty aerosols that used HFCs with a GWP above 150. The OCF market has mostly switched to HC propellants. Flammability remains an important issue for novelty aerosols and that sector has made use of a new propellant, HFO 1234ze.

3. Placing on the market of new aerosol products

NEW: HFC Bans

A key impact of the 2014 F-Gas Regulation on new aerosols is a ban on the use of HFCs with a GWP of more than 150 in technical aerosols from 2018. The various aerosol bans, including those in the 2006 Regulation as well as the new 2014 Regulation are summarised in Table 1.

Table 1: Bans on HFCs used as aerosol propellants

	Ban description	Ban for GWP above ¹ :	Start date from 1 st January:
1	One component foam ²	150	2008
2	Novelty aerosols ³ and signal horns	150	2009
3	NEW: Technical aerosols ⁴	150	2018

The technical aerosol ban in 2018 does not apply when HFCs are required to meet national safety standards or when used for medical applications. Some household aerosols designed for cleaning could be in the scope of the 2018 ban.

¹ If the propellant is part of a mixture (e.g. an HFC blended with a hydrocarbon), the GWP threshold is for the mixture. Annex IV of the Regulation specifies how to calculate the GWP of a mixture.

² “One-component foam” means a foam composition contained in a single aerosol dispenser in unreacted or partly reacted liquid state and that expands and hardens when it leaves the dispenser

³ “Novelty aerosols” means aerosol generators marketed and intended for sale to the general public for entertainment and decorative purposes, as listed in point 40 of Annex XVII to Regulation (EC) No 1907/2006

⁴ “Technical aerosol” means an aerosol dispenser used in maintaining, repairing, cleaning, testing, disinfecting and manufacturing products and equipment, installing equipment, and in other applications

NEW: Impact of the HFC Phase Down on selecting an aerosol propellant

When selecting an aerosol propellant it is very important to consider the HFC phase down⁵ that is a key feature of the 2014 F-Gas Regulation. This will reduce the quantity of HFCs that can be sold in the EU – by 2030 there will be an 80% cut in HFC supply. The phase down is likely to lead to an increase in the price of HFCs. Irrespective of the bans described above, it makes sense to always use propellants with the lowest practical GWP to minimise the future impact of the phase down⁶.

New: Product Labelling

From January 1st 2015 all aerosol products that contain F-Gases (including HFCs) shall not be placed on the market unless the F-Gases are identified with a label indicating the following information:

- 1) A reference that the aerosol contains F-Gases
- 2) The accepted industry designation for the F-Gas concerned or, if no such designation is available, the chemical name
- 3) From 1 January 2017, the quantity expressed in weight and in CO₂ equivalent of F-Gas contained in the aerosol, and the global warming potential of the propellant

4. Use of existing aerosols

The 2014 F-Gas Regulation does not create any special requirements for the use of existing insulating foams.

5. Requirements at end-of-life

The 2014 F-Gas Regulation requires operators of products and equipment that contain F-Gases to arrange for the recovery of the gases, *“to the extent that it is technically feasible and does not entail disproportionate cost”*.

Recovery of propellants from used or discarded aerosols requires a specialist facility that can extract the remaining contents from the aerosol. Where discarded aerosols can be collected together in sufficient numbers this may be considered as technically feasible and cost effective. However, end-of-life recovery is unlikely to be cost effective for fully used technical aerosols⁷. Full or part-full aerosols should be captured and disposed of as hazardous waste.

Recovery must be carried out by trained technicians. All recovered F-Gases can either be:

- a) Sent for destruction by incineration at a licenced waste facility
- b) Sent to a specialist plant that can re-process the old propellant into a gas with properties identical to virgin fluid, to create “reclaimed propellant”.

⁵ HFC phase down: see Information Sheet 28 for further details

⁶ Low GWP alternatives to HFCs: see Information Sheet 29 for further details

⁷ It is estimated that in 2012 the residual HFCs in the approximately 20 million technical aerosols used in the UK totalled less than 20 tonnes. Several studies conducted on recycling of empty aerosols have found that only 1-2 % of the original contents remain in an aerosol at the end of life.

6. Reporting of imports

NEW: Any aerosols containing HFCs and HFOs⁸ imported from outside the EU need to be reported to the Commission on an annual basis. The first report covers the calendar year 2014 and must be submitted to the Commission by March 31st 2015. Reports for future calendar years must be made by March 31st of the following year.

Details of import reporting requirements are given in Information Sheet 20.

Gluckman Consulting
specialists in refrigeration and climate change

This Information Sheet has been prepared by Gluckman Consulting

in collaboration with the Defra (UK Department for Environment, Food and Rural Affairs) and Jacobs

This document can be used and distributed for no charge. It contains the best information available to date and will be updated as more or different information is made available. It does not seek to provide a definitive view on the legal requirements; only the courts can provide such a view. If there are uncertainties you should always refer to the text of the Regulation and seek qualified legal advice.

admin@gluckmanconsulting.com

www.gluckmanconsulting.com

⁸ HFOs: hydro-fluoro-olefins. These are unsaturated HFCs, being introduced as they have very low GWPs. Certain HFOs are being considered as aerosol propellants.