

EC REGULATION NO 842/2006 ON CERTAIN FLUORINATED GREENHOUSE GASES

FREQUENTLY ASKED QUESTIONS

February 2007

**EUROPEAN PARTNERSHIP FOR ENERGY AND THE
ENVIRONMENT (EPEE)**

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Foreword

The European Partnership for Energy and the Environment (EPEE) is delighted to present its **Frequently Asked Questions** (FAQ) document on the EU F-gas Regulation.

EPEE is a group of businesses involved in the development and manufacture of equipment which relies on HFCs as a refrigerant in cooling, heating and air conditioning applications where energy efficiency and safety are crucial elements.

It represents a broad-based group of responsible companies, national associations and European associations active in the European air-conditioning, heat-pump and refrigeration industry.

EPEE was formed in September 2000 to contribute to the development of effective European policies to reduce greenhouse gases from the use of refrigerants.

The adoption of the F-gas Regulation last year marked an important milestone for our industry. In this context, EPEE wishes to contribute to a transparent, smooth and efficient implementation of the Regulation, in view of the forthcoming key requirements which will be mandatory from 4 July 2007.

We hope this FAQ will help businesses and stakeholders involved in the Heating, Ventilation Air-conditioning & Refrigeration (HVACR) industry to implement the Regulation in an efficient manner.

Sincerely,



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Director General
EPEE

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Section 1: General aspects

1. What are F-gases?

F-gases (hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆)) are new, safe industrial gases used in a number of applications: industrial refrigeration, air-conditioning systems, insulation foam, fire suppression systems, electrical switchgear, and many others.

F-gases replaced the ozone-depleting CFCs and HCFCs in the 1990s. They are non-ozone depleting, have low toxicity levels and most of them are non-flammable. However, they have a relatively high global warming potential (GWP).

2. What is the EU F-Gas Regulation?

The F-Gas Regulation, or “Regulation of the European Parliament and of the Council on certain fluorinated gases,” is an EU legislative instrument which is directly (i.e. without any further transposition measures) applicable in all EU Member States.

After almost 3 years of intensive negotiations between the European Commission, the European Parliament, EU Member States, industry and NGOs, the Regulation was finally adopted during the first half of 2006.

The Regulation specifies detailed containment provisions, particularly schedules for the leak checking of equipment, staff training and certification of people handling fluorinated gases. It also details a mandatory reporting scheme for those producing, importing, exporting and selling these gases, and contains selected bans for emissive, low-societal value uses.

3. What is the objective of the F-Gas Regulation?

The objective of the Regulation is to reduce emissions of the fluorinated greenhouse gases covered by the Kyoto Protocol, namely HFCs, PFCs and SF₆. In order to meet this objective, the Regulation addresses:

- the containment, use, recovery and destruction of HFCs, PFCs and SF₆;
- the labelling and disposal of products and equipment containing those gases;
- the reporting of information on those gases;
- the control of certain uses of the gases;
- the application of ‘placing on the market’ prohibitions on certain products and equipment;
- the training and certification of personnel and companies involved in activities under this Regulation.

4. Which gases are covered by the EU Regulation?

The gases covered by the EU Regulation are the so-called fluorinated greenhouse gases: HFCs, PFCs and SF₆.

5. Does the Regulation prohibit the use of certain gases in the future? Does the Regulation prohibit the production of equipment using F-gases in the future?

The Regulation imposes bans for certain applications of F-gases. These bans are considered appropriate because viable alternatives are available and improvement of containment and recovery is not feasible. Therefore, the placing on the market of these products and equipment is detrimental to the objectives and commitments of the EU and its Member States with regard to climate change.

The table below provides an overview of the types of gases/applications that will be prohibited and as of when they will be prohibited:

Fluorinated greenhouse gases	Products and equipment	Date of prohibition
Fluorinated greenhouse gases	Non-refillable containers	4 July 2007
Hydrofluorocarbons and perfluorocarbons	Non-confined direct-evaporation systems containing refrigerants	4 July 2007
Perfluorocarbons	Fire protection systems and fire extinguishers	4 July 2007
Fluorinated greenhouse gases	Windows for domestic use	4 July 2007
Fluorinated greenhouse gases	Other windows	4 July 2008
Fluorinated greenhouse gases	Footwear	4 July 2006
Fluorinated greenhouse gases	Tyres	4 July 2007
Fluorinated greenhouse gases	One component foams, except when required to meet national safety standards	4 July 2008
Hydrofluorocarbons	Novelty aerosols	4 July 2009

However, these prohibitions only apply for products and equipment manufactured *after* the relevant date of prohibition.

In addition, the use of SF₆ in magnesium die-casting is prohibited as of 1 January 2008, unless the quantity of SF₆ used is below 850 kg per year. The use of SF₆ in filling vehicle tyres will be prohibited as of 4 July 2007.

This means that the use of F-gases in all other products and equipment remains legal. However, if a Member State adopted stricter national measures before 31 December 2005 (Austria and Denmark did), these stricter measures can remain in place until 31 December 2012. They must, however, be notified by the relevant Member State to the European Commission before 4 July 2007 and must be compatible with the EU Treaty.

6. What aspects of the use of F-gases are regulated?

As a rule of principle, the Regulation does not regulate F-gases directly; e.g. in terms of production and placing on the market. It regulates their *use*. The various aspects covered are containment, recovery, training and certification of personnel handling the gases, reporting of data on import, export and use of gases, labelling of equipment, control of use and placing on the market of products containing F-gases. The Regulation also foresees the publication of a report based on the experience of the application of the Regulation by 4 July 2011.

7. There was a lot of discussion and speculation about the situation in Austria and Denmark. What is the status there now? Will the Regulation apply there as well?

Austria and Denmark have introduced their own legislation banning the use of fluorinated greenhouse gases prior to the adoption of this Regulation. Their national legislations conflict with certain provisions of the EU-Regulation. However, as the result of a political compromise, a provision was introduced in the Regulation allowing Member States to maintain their stricter national legislation if it was adopted before 31 December 2005. However, these stricter national measures have to be notified to the European Commission by 4 July 2007 and have to be compatible with the EU Treaty to be permitted. In any case, these stricter national measures can only be maintained until 31 December 2012.

8. I am confused about the entry into force of the Regulation. When exactly does this happen?

The Regulation entered into force on 4 July 2006. However, most provisions will only apply with effect from 4 July 2007, with the exception of certain prohibitions outlined under question 5 which have become applicable as of 4 July 2006.

Section 2: Obligations

9. How do my obligations change under the new Regulation as an importer/manufacturer/user/retailer/etc. of equipment relying on F-gases?

Under the new F-gases Regulation, you have to meet some requirements you did not have to consider before this new F-gas regulation entered into force, in particular as concerns F-gas containment and recovery from equipment, as well as product labelling and minimum qualification requirements for service/maintenance personnel.

Containment

Operators are required to use all available measures to prevent leakage of F-gases and repair any leaks from refrigeration, air-conditioning and heat pump equipment as soon as possible. Moreover, operators of stationary applications containing more than 3kg of F-gas will also have to maintain records on the quality and type of F-gases installed, among other things. (Please see the answers to questions 11-13 for more details.)

Recovery

From 4 July 2007, operators will be responsible for putting in place arrangements for the proper recovery of F-gases by certified personnel to ensure their recycling, reclamation or destruction from the cooling circuits of refrigeration, air-conditioning and heat pump equipment; equipment containing fluorinated greenhouse gas based solvents; fire protection systems and fire extinguishers; and high-voltage switchgear. (Please see the answers to questions 14-15 for more details.)

Labelling

From 4 July 2007 equipment placed on the market will have to have a label that states the chemical name of the F-gas and provides a clear indication that the product contains F gases and their quantity. Information on the F-gases, including their global warming potential, will also have to be included in the instruction manuals provided for such products and equipment.

Manufacturers, wholesalers and installers of equipment will need to consider further who should label equipment bearing in mind that the obligation applies when equipment is placed on the market and that the label must be indelible, but the practical requirements of the labelling requirement could be met before this. Those responsible for preparing instruction manuals to accompany equipment will also need to ensure that information on the fluorinated gases, including their GWP, is included. (Please see the answers to questions 17-20 for more details.)

Minimum qualification requirements for service/maintenance personnel

The Regulation introduces minimum requirements and mutual recognition for both the companies and the relevant personnel involved in installation, maintenance or servicing of the equipment and systems containing F-gases as well as for the personnel involved in containment and recovery. (Please see Section 3 for more details.)

Prohibitions

Some specific uses of F-gases and products that contain F-gases are controlled or banned by the Regulation. These cover certain uses of sulphur hexafluoride for magnesium die-casting, use of certain F gases in non-refillable containers, non-confined direct evaporation systems containing refrigerants, fire protection systems, tyres, and one component foams, among others.

10. How do my obligations change under the new Regulation as an importer/producer/etc. of F-gases?

Under the new F-gases regulation you have to meet some requirements you did not have to consider before this new F-gas regulation was entering into force:

- There are reporting requirements for producers, exporters and importers of fluorinated gases (for more details please see the answer to question 16.)
- There are labelling requirements for cylinders and containers of fluorinated gases (see the answer to question 17) exceeding the already existing requirements under the pressurized equipment directive (e.g. chemical name of the gas, quantity). Additionally, reference has to be made to the fact that the cylinder/container contains a fluorinated greenhouse gas covered by the Kyoto Protocol. Furthermore, the required mentioning of the GWP of the F-gas may need to be made in the accompanying freight documents – this requirement has yet to be decided upon by the Commission.
- The placing on the market of non-refillable containers with fluorinated greenhouse gases will be prohibited as of 4 July 2007 (see the table in the answer to question 5).

Leak Prevention

11. I heard that containment is one of the key aspects of the Regulation. What do I need to do to prevent any kind of leakage?

In the refrigeration and air-conditioning industry, operators of stationary refrigeration, air conditioning and heat pump equipment, including their circuits, which contain HFCs, must use

all measures - which are technically feasible and do not entail disproportionate cost - to prevent leakage of these gases and as soon as possible repair any detected leakage.

12. What are the leak-check requirements?

Periodical '**manual**' **leakage checks** must be carried out by certified personnel according to the following schedule:

- Applications containing >3kg of F-gases (unless hermetic and <6kg) – check every 12 months
- Applications containing >30kg of F-gases, check every 6 months
- Applications containing >300kg of F-gases, check every 3 months

The applications must be checked for leakage within one month after a leak has been repaired to ensure that the repair has been effective. "Checked for leakage" means that the equipment or system is examined for leakage using direct or indirect measuring methods, focusing on those parts of the equipment or system most likely to leak. The direct and indirect measuring methods of checking for leakage shall be specified in the standard checking requirements to be written by the Commission by mid-2007.

On top of this requirement for a periodical '**manual**' leakage check, operators of the applications containing 300kg or more of fluorinated greenhouse gases must install **leakage detection systems** which must be checked every year.

When a properly functioning appropriate leakage detection system is in place, the frequency of the periodical '**manual**' checks required for systems over 30kg shall be halved.

Operators of equipment containing 3kg or more of fluorinated greenhouse gases must maintain records on the quantity and type of fluorinated greenhouse gases installed, any quantities added and the quantity recovered during servicing, maintenance and final disposal. They shall also maintain records of other relevant information including the identification of the company or technician who performed the servicing or maintenance, as well as the dates and results of the checks carried out and relevant information specifically identifying the separate stationary equipment. These records shall be made available on request to the competent authority and to the Commission.

13. Do I need leak detectors? Do they affect the frequency of external checks?

Service technicians do need a technically valid method for detecting leaks from F-gas containing systems. Any system with a charge greater than 300 kg must have a fixed leak detection system as part of its installation. These leak detection mechanisms need to be checked at least once a year.

As mentioned in the answer to question 12 above, when a fixed leak detection system is installed in smaller charge systems, the frequency of routine leak checks of the system (containing 30kg or more of F-gases) may be halved.

Recovery

14. Am I responsible for the recovery of F-gases? If I am, do I need to hire external personnel or can my own personnel do it?

Those responsible for the recovery of fluorinated gases are:

- Operators of cooling circuits of refrigeration, air-conditioning and heat pump equipment;
- Operators of equipment containing fluorinated greenhouse gas-based solvents;
- Operators of fire protection systems and fire extinguishers;
- Operators of high-voltage switchgear.

An operator is defined as “the natural or legal person exercising actual power over the technical functioning of the equipment and systems”. Operators must put in place arrangements for the proper recovery by certified personnel (see section 3), and disposal of the F-gases contained in these equipments.

When a refillable or non-refillable fluorinated greenhouse gas container reaches the end of its life, the person utilising the container for transport or storage purposes is responsible for putting in place arrangements for the proper recovery of any residual gases.

The fluorinated greenhouse gases contained in other products and equipment, including mobile equipment (unless it is serving military operations), need to be recovered by appropriately qualified personnel (see section 3) to the extent that it is technically feasible and does not entail disproportionate cost.

15. When are the F-gases to be recovered?

Recovery, for the purpose of recycling, reclamation or destruction of the fluorinated greenhouse gases, shall take place before the final disposal of equipment and, when required, during its servicing and maintenance. F-gases MUST not be released to the atmosphere.

Reporting

16. I understand that the industry will have to fulfil some sort of reporting requirements. What are these? To whom do I have to report? What do I have to report? What happens with the data I communicate?

Under the F-gas Regulation, currently only the keeping of records on the use of F-gases (charged into systems, recovered from systems, etc.) is required. These records have to be made available on request to the competent authority of the Member State and to the Commission. Details will be established by each Member State. You should contact the appropriate authority or trade association in your own country/region for clarification.

For the specific cases of manufacturers and importers of F-gases there are the following specific reporting requirements:

- By 31 March 2008 and every year thereafter, each producer, importer and exporter of fluorinated greenhouse gases, including importers of systems pre-charged with HFCs, must communicate to the Commission (and to the competent authority of the Member State concerned), by way of a report, the following data in respect of the preceding calendar year:

a) Each producer who produces more than one tonne of fluorinated greenhouse gases per annum shall communicate:

i. Their total production of each fluorinated greenhouse gas in the Community, identifying the main categories of applications (e.g. mobile air-conditioning, refrigeration, air-conditioning, foams, aerosols, electrical equipment, semi-conductor manufacture, solvents and fire protection) in which the substance is expected to be used;

ii. The quantities of each fluorinated greenhouse gas that they have placed on the market in the Community; and

iii. All quantities of each fluorinated greenhouse gas recycled, reclaimed or destroyed.

b) Each importer who imports more than one tonne of fluorinated greenhouse gases per annum, including any producers who also import, shall communicate:

i. The quantity of each fluorinated greenhouse gas that they have imported or placed on the market in the Community, separately identifying the main categories of applications (e.g. mobile air-conditioning, refrigeration,

air-conditioning, foams, aerosols, electrical equipment, semi-conductor manufacture) in which the substance is expected to be used; and

ii. All quantities of each used fluorinated greenhouse gas that they have imported for recycling, for reclamation or for destruction.

c) Each exporter who exports more than one tonne of fluorinated greenhouse gases per annum, including any producers who also export, shall communicate:

i. The quantities of each fluorinated greenhouse gas that they have exported from the Community,

ii. Any quantities of each used fluorinated greenhouse gas that they have exported for recycling, for reclamation or for destruction.

The exact format of the reports will be determined by the European Commission before 4 July 2007. The Commission will also take appropriate steps to protect the confidentiality of the information submitted to it.

Labelling

17. The Regulation imposes labelling requirements. Do I need to place a label on the products I sell?

The following products and equipment have to bear a label showing the chemical name of the fluorinated gases they contain. The label must clearly indicate that the product or equipment contains fluorinated greenhouse gases covered by the Kyoto Protocol and their quantity.

1. Refrigeration products and equipment which contain perfluorocarbons or preparations containing perfluorocarbons;
2. Refrigeration and air conditioning products and equipment (other than those contained in motor vehicles), heat pumps, fire protection systems and fire extinguishers, if the respective type of product or equipment contains hydrofluorocarbons or preparations containing hydrofluorocarbons;
3. Switchgear which contains sulphur hexafluoride or preparations containing sulphur hexafluoride; and
4. All fluorinated greenhouse gas containers.

18. Where does the label have to be placed?

The label needs to be clearly and indelibly stated on the product or equipment, adjacent to the service points for charging or recovering the fluorinated greenhouse gas, or on that part of the product or equipment which contains the fluorinated greenhouse gas (i.e. thermostatic expansion valves, etc.). Hermetically sealed systems need to be labelled as such.

19. How and where do I obtain the label?

Please contact the trade association representing the F-gas application sector to which your business activities belong for further information.

20. When will the labelling obligations enter into force?

The labelling provision, like most other provisions of the Regulation, entered into force on 4 July 2006. However, it will only become applicable as of 4 July 2007.

Section 3: Personnel

21. What are the training requirements for personnel under the new Regulation?

By 4 July 2007, written minimum requirements for training programmes and certification for companies and personnel involved in installation, maintenance or servicing of equipment and systems covered by the Regulation will be established by the EU. Based upon these requirements, by 4 July 2008, Member States must establish or adapt their own training and certification programmes. Such certificates issued in one EU Member State will be recognised in all other EU Member States.

An operator must ensure that personnel have the necessary certification to carry out the monitoring, testing, recovery and other procedures required under the Regulation. This implies appropriate knowledge of the applicable regulations and standards as well as the necessary competence in emission prevention and recovery of fluorinated gases and handling safely the relevant type and size of equipment.

Furthermore, as of 4 July 2009, companies can only take deliveries of fluorinated gases if their relevant personnel have the appropriate certificates.

22. Will the current personnel undergo additional training/certification tests?

By early July 2007, the EU will draw up minimum requirements in respect of training programmes and certification for both the companies and the relevant personnel involved in

installation, maintenance or servicing of the equipment and systems. Based on this, EU Member States will have to establish or adapt their own training and certification programmes (by July 2008). These will also apply to the current personnel who might have to participate in certain additional training sessions.

23. Do the maintenance personnel need to come from outside my company?

No. If the company's own personnel hold the necessary training requirements and certificates, this is sufficient.

Section 4: Penalties

24. What happens if I decide not to comply with the Regulation?

If an operator/company does not comply with the provisions in the Regulation and subsequent standards, they will be subject to the imposition of penalties. The level of these penalties still has to be set up by each individual EU Member State. However, the Regulation provides that these penalties must be "effective, proportionate and dissuasive".

Section 5: Review of the Regulation

25. Is the legislation now set in stone or can it still be altered at a later stage? If it can, what is the process and who determines how it needs to be changed?

No, the Regulation is not set in stone. On the basis of progress in potential containment or replacement of fluorinated gases in air conditioning systems, other than those fitted to motor vehicles, and in refrigeration systems contained in modes of transport, the Commission will review this Regulation and publish a report by 31 December 2007 (at the latest). If appropriate, it will accompany this report with legislative proposals by 31 December 2008, with a view to applying the containment provisions to air-conditioning systems, other than those fitted to motor vehicles, and refrigeration systems contained in modes of transport.

In addition, by 4 July 2011, the Commission will publish a report based on the experience of the application of this Regulation. This report will examine a wide range of aspects. Among those are:

- Assessing the impact of relevant provisions on emissions and projected emissions of fluorinated greenhouse gases and examine the cost-effectiveness of these provisions;
- Evaluating the training and certification programmes established by EU Member States;
- Evaluating the effectiveness of containment measures carried out by operators and assessing whether maximum leakage rates for installations can be established; and

- Assessing the overall need for further action by the EU and its Member States in the light of existing and new international commitments regarding the reduction of greenhouse gas emissions.

Where it deems it necessary, the Commission can then also present appropriate proposals for the revision of certain provision of this Regulation.

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