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EC Regulation No 842/2006 on Certain Fluorinated Greenhouse Gases

Frequently Asked Questions

October 2006

UK Government, Scottish Executive, National Assembly for Wales

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Published by the Department for Environment, Food and Rural Affairs

URN 06/1636

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The Regulation (REGULATION (EC) No 842/2006) was published in the Official Journal of the European Union on 14 June 2006 and came into force on 4 July 2007. Please refer to the Regulation for information on obligations and responsibilities.

This document is written as a supplement to the F gas Guidance document. For a more substantive description of the Regulation please see the F gas Guidance document available for download at http://www.defra.gov.uk/environment/climatechange/uk/fgas/index.htm

Summary of the issues

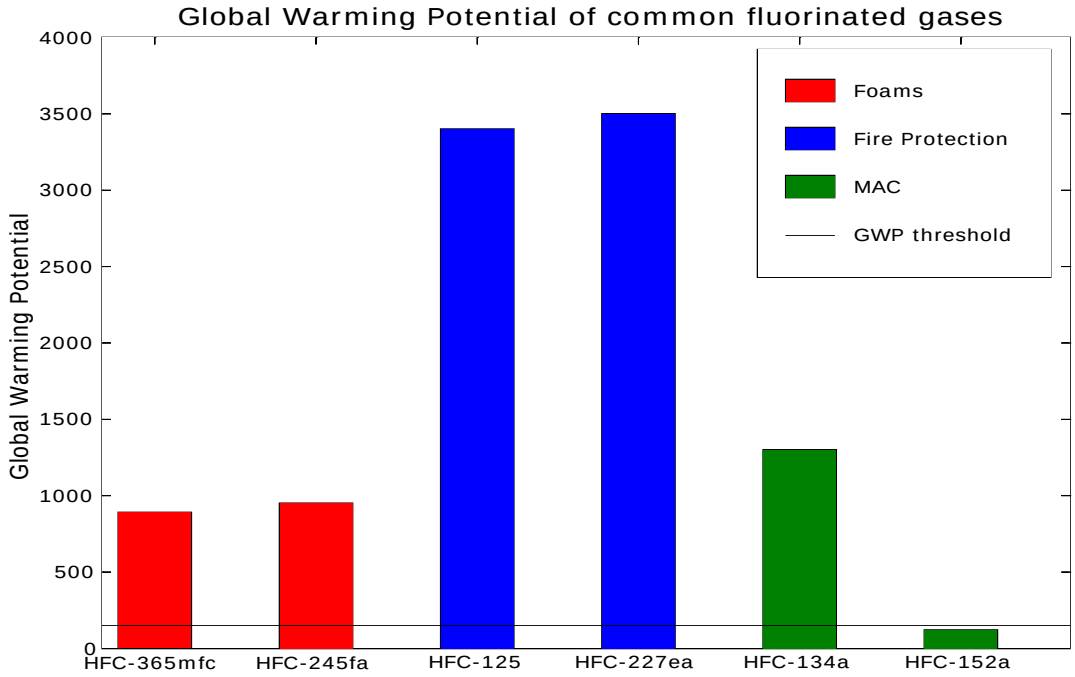
What are fluorinated gases and why do they matter?

1. Q. What are fluorinated gases?
A. Fluorinated gases are man-made gases that are used in a number of different sectors. The most commonly used fluorinated gases belong to a class of chemicals known as hydrofluorocarbons (HFCs). HFCs were virtually unused before 1990 but since then have been used to replace ozone-depleting substances, such as chlorofluorocarbons (CFCs) and (HCFCs), in, for example, refrigeration and air-conditioning equipment. Other fluorinated gases are perfluorocarbons (PFCs), which are used in the fire fighting and electronics sectors, and sulphur hexafluoride (SF6), which is used in diverse applications such as training shoes and as a cover-gas in magnesium die casting operations.

2. Q. Why is it beneficial to reduce F gas emissions?
A. Although F gases do not damage the ozone layer like the CFCs that they replace; they are powerful greenhouse gases, are generally long-lived and are included in the 'basket of gases' under the Kyoto Protocol. The Kyoto Protocol placed legally binding requirements on signatories to reduce their carbon (and equivalent) emissions to below 1990 levels. Reducing F gas emissions will contribute towards this obligation.

3. Q. What is "global warming potential"?
A. "Global Warming Potential" expresses the climatic warming potential of a greenhouse gas relative to that of carbon dioxide. The standard Global Warming Potential (GWP) is calculated in terms of the 100 year warming potential of one kilogram of a gas relative to one kilogram of CO2.

4. Q. How low is a GWP threshold of 150?
A. A GWP threshold of 150 is quite low. Almost all of the common F gases have GWPs close to 1000. HFC-152a is unusual because it is a useful F gas that has a low GWP of 120. The figure below compares the GWP threshold against the GWP of F gas used in various applications.



5. Q. What is the Government's policy on HFCs?
A. There has been uncertainty regarding the use of HFCs since the adoption of the Kyoto Protocol. The Government recognises that the successful phase out of ozone-depleting substances under the Montreal Protocol is being achieved with a range of technologies, and accepts that HFCs are necessary to replace ozone-depleting substances in some applications. In view of this, the Government's position on HFCs is as follows:

- HFCs should only be used where other safe, technically feasible, cost-effective and more environmentally acceptable alternatives do not exist;
- HFCs are not sustainable in the long term – the Government believes that continued technological developments will mean the HFCs may eventually be able to be replaced in the applications where they are used;
- HFC emission reduction strategies should not undermine commitments to phase-out ozone depleting substances under the Montreal Protocol.
- HFC emissions will not be allowed to rise unchecked.

What information do we have on emissions of F gases?

6. Q. Do we have estimates for F gas emissions?
A. The EC Fluorinated Gas Working Group estimated that assuming no additional measures were taken emissions of F gases were forecast to increase to around 98 million tonnes of carbon dioxide equivalent by 2010, representing 2-4% of total projected greenhouse gas emissions.

7. Q. Do we have a breakdown of the contribution to emissions from the different F gas sources (e.g. fridges, MACs) etc?

A. The total emissions of HFC, PFC and SF6 of 11,475 kt CO2 equivalent in 2000 represented about 2% of total UK greenhouse gas emissions in that year.

HFC, PFC and SF_6 emissions for the UK by sector (ktonnes CO_2 equiv) (mid estimates) *AEA Technology "Emissions and Projections of HFCs, PFCs and SF6 for the UK and constituent countries" (2nd edition June 2004).*
This table does not take into account the emissions abatement measures provided for in the proposed Regulation and the Directive.

	1990	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**
Stationary refrigeration	0	760	3284	3555	2872	2586	2022	1680
Fluid manufacture	11383	14039	2744	2223	1084	1092	1095	1095
Aerosols	0	406	1256	1442	1515	1592	1674	1759
Magnesium production	478	478	1147	860	741	741	741	741
Metered Dose Inhalers	2	2	894	1516	1393	1229	1158	1086
Mobile air con	0	183	785	1459	1651	1536	1323	1139
Electrical	598	802	623	522	507	504	496	503
Aluminium production	1327	285	257	170	120	120	120	120
Electronics	41	93	203	99	84	105	130	159
Foams	0	0	61	563	867	1035	1188	1328
Fire fighting	0	3	65	358	375	419	468	523
Solvents	0	0	3	46	107	107	107	107
One Component Foams	0	167	94	111	128	128	128	128
Other	23	23	59	320	37	0	0	0
Total	13851	17240	11475	13242	11480	11194	10648	10369

These trends can be summarised as follows.

- **1990 - 1995**: 24% increases. This increase was largely due to increased output of HCFC production, which was the major emission source of HFCs as a by-product at this time. Emissions from aluminium production fell sharply as different smelter technology was introduced. Stationary refrigeration emerged as a significant emission source after HFCs were first introduced as replacements for CFCs and HCFCs.
- **1995 - 2000:** 33% reduction. This reduction was due to the introduction of new emission abatement technology at one UK halocarbon production plant. Emissions from other sectors, notably stationary refrigeration, aerosols and magnesium manufacture increased significantly over this period.
- **2000 - 2005:** 15% increases. An increase in emissions is anticipated due to the increasing use of HFC in refrigeration, mobile air conditioning and foams manufacture.
- **2005 - 2010** and onwards: 13% reduction between 2005 to 2010 followed by annual reductions of 0 - 1.2% p.a. Reductions are anticipated as emission reduction measures take effect, particularly in the stationary refrigeration and mobile air conditioning sectors.

8. Q. What are the key provisions in the Regulation?
A. The main provisions in the Regulation on certain fluorinated greenhouse gases cover: containment through responsible handling during use, recycling and end-of-life recovery; reporting on quantities produced, supplied, used and emitted; certain application specific bans on use and placing on the market.

During the negotiations, what was the issue over the legal base of the Regulation?

9. Q. Why does the choice between Article 95 and Article 175 legal base matter?
A. In accordance with the case law of the ECJ the choice of legal basis for a measure must be based on objective factors, which are amenable to judicial review; they can't be chosen on a subjective basis. Secondly, if a measure is adopted under Article 175, Member States have considerably more scope to adopt more stringent protective measures than they would enjoy if the proposal were adopted under Article 95. If placing on the market prohibitions were introduced under article 175, this could have resulted in distortions to the single market.

10. Q. Why is a Dual Legal base an acceptable solution?
A. This is a solution reconciles the issues of environmental protection and the single market. Article 175(1) is cited as a legal base, along with Article 95 for Article 7, and 8 and 9 of the proposal, which concerns labeling, control of use and placing on the market.

This split allows Member States to establish stricter measures than proposed by the Commission with regard to containment, recovery, training and certification and reporting, whilst ensuring that the internal market for important products such as commercial refrigeration systems would not be distorted.

The Regulation Articles

Article 2: Definitions

11. Please see the F gas Guidance document, available from http://www.defra.gov.uk/environment/climatechange/uk/fgas/index.htm

Article 3 Containment

12. Q. What does Article 3 "Containment" require?
A. Article 3 introduces a requirement for operators to prevent leakage of F gases and to repair any detected leakage (as soon as possible) from a specified list of stationary applications. Operators will also have to maintain records on the quantity and type of fluorinated greenhouse gases installed, any quantities added and the quantity recovered during maintenance, servicing and final disposal. They shall also maintain records of other relevant information including the identification of the company or servicing technician who performed the maintenance or servicing; as well as the dates and results of the inspections carried out.

13. Q. Do the requirements of Article 3.1 apply to all applications or just those over 3 kg?
A: The inspection for leakage timetable and details set out under Article 3 paragraphs 2-6 do not apply to equipment with a charge under 3 kg. However, this equipment will be subject to the general provisions outlined in Article 3.1 to prevent leakage and repair any detected leaks as soon as possible.

14. Q: Do you know what "standard leakage checking requirements" the Commission is considering in Article 3.7?
A: By 4 July 2007, the Commission will need to establish standard inspection requirements in accordance with the Committee procedure set up by the Regulation under article 12. The Committee can accept the proposals, or reject them by qualified majority. This will be an important "filling out" of the Regulation's requirements and stakeholders may want to take an active and early interest in this work

15. Q. Do the containment provisions only come into force at the point of "placing on the market"?
A. These obligations fall in the first instance on "operators" who are defined as "exercising actual power over the technical functioning" of the relevant equipment. This would imply that leakage testing/inspection applies when the equipment is in use. The point is not entirely free from doubt in the absence of a more specific text requiring the equipment to be in use before it is subject to inspections etc

16. Q. Does a manufacturer have any obligations under the Regulation other than through good design?
A. This would depend on whether manufacturers are engaged in any of the activities covered by the Regulation. For example, article 3 on containment applies only to operators as defined in article 2. So a manufacturer would only be subject to the requirements of article 3 if it had such equipment on its premises and employees who were operators. In addition, a manufacturer should be aware of the obligation for the types of equipment and products listed in Article 7 to be labelled and information, on the F gases, included in their manuals.

If a manufacturer is involved in the activities covered by Articles 3 and 4, it would also be subject to the training and certification provisions in Article 5.

17. Q. How do the obligations for certified personnel in Articles 3 & 4 fit in with the timeframe of Article 5.2?
A. There is an issue with the timing of the provisions introduced by 5.2 and 5.3. as the operators have to comply with 5.3 from the date that the Regulation applies e.g. ensuring that the personnel have the relevant certification specified in Article 5.2 by July 2007 even though Member States will have until July 2008 to establish their own minimum certification requirements as specified in 5.2.

The Commission have offered an informal preliminary view that they envisage Member States using current certification or qualification criteria in the interim.

Article 4: Recovery

18. Q. What does Article 4 "Recovery" require?
A. Under Article 4 operators of a specified list of stationary applications will be responsible for putting in place arrangements for the proper recovery by certified personnel, of fluorinated greenhouse gases to ensure their recycling, reclamation or destruction.

In addition, the F gases contained in other products and equipment, including mobile equipment unless it is serving military operations, shall, to the extent that it is technically feasible and does not entail disproportionate cost, be recovered by appropriately qualified personnel, to ensure their recycling, reclamation or destruction.

Recovery, for the purpose of recycling, reclamation or destruction of the fluorinated greenhouse gases shall take place before the final disposal of that equipment and, when appropriate, during its servicing and maintenance.

19. Q. Is there a difference between "certified" in 4.1 and "qualified" in 4.3.
A. There may be a subtle distinction between the two terms: "appropriately qualified" may include "certified personnel" and also may include personnel who are not certified but have some relevant qualifications

20. Q. Is there a requirement to recover HFCs from foams?
A. Recovery of ozone depleting substances from foams in refrigerators is now a well established procedure and recovery of F gases from foams will need to be looked at in the same light – it will be necessary where technically feasible and cost-effective.

21. Q. Will the need for personnel to be certified require all existing service personnel to complete a new training course?
A. All relevant personnel will need to have appropriate certification however, this does not necessarily mean that personnel will need to undergo any new or additional training.

22. Q. Will requirements under F gas regulation duplicate other regulatory requirements, such as recovery under WEEE and inspection requirements under new building energy efficiency requirements as well as new regulations on hazardous waste?
A. There is potential overlap between requirements under F gas regulation, and other regulations due to come into force. Defra/DTI and Department for Communities and Local Government (DCLG) are working with stakeholders to avoid unnecessary overlap in implementation arrangements.

Article 5: Training & Certification

23. Q. What does Article 5 "Training and Certification" require?
A. Article 5 will introduce minimum requirements and mutual recognition for training programmes and certification for the relevant personnel and for the companies and their personnel involved in the activities provided for in Articles 3 and 4, Containment and Recovery respectively.

24. Q. When will the Commission start it's work and when will the UK get involved?
A: There is an issue with the timing of the provisions introduced by 5.2 and 5.3. as the operators have to comply with 5.3 from the date that the Regulation applies e.g. ensuring that the personnel have the relevant certification specified in Article 5.2 by July 2007 even though Member States will have until July 2008 to establish their own minimum certification requirements as specified in 5.2.

The Commission have offered an informal preliminary view that they envisage Member States using current certification or qualification criteria in the interim.

25. Q. When does the obligation set out in Article 5.3 apply?
A: When Article 5.2 comes into effect, that is by 4 July 2007. The Commission have offered a preliminary view that they envisage Member States using current certification or qualification criteria in the interim, for personnel involved the activities provided for in articles 3 and 4.

26. Q. Is there a requirement for training and certification within a manufacturing plant? And does Article 5.4 apply to manufacturers?
A: The training requirements in the political agreement text specify the activities carried out rather than the location/situation. If containment/recovery provisions are relevant to roles carried out by operators in a manufacturing plant then the training requirements are too.

Article 6: Reporting

27. Q. Do the reporting requirements refer to products containing F gases or the gases themselves?
A: The provisions apply only to producers, importers and exporters of the gases themselves, rather than the producers, importers and exporters of the products containing these gases. However, estimates are required of the main categories of applications in which the substance is expected to be used e.g. refrigeration.

28. Q. Why are fire protection systems not included?
A. Fire protection systems are included. The list of applications in the text is an indicative list, not a definitive one.

Article 7: Labelling

29. Q. What are the labelling requirements?
A. Products and equipment containing fluorinated greenhouse gases shall not be placed on the market unless the chemical name of the fluorinated greenhouse gases are identified using the accepted industry nomenclature, with a clear indication that the product contains fluorinated greenhouse gases, and this is 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. Hermetically sealed systems should be labelled as such. There is also the requirement for the manuals provided for the products, which contain F gases to state The Global Warming Potential (GWP) of the contained F gases (see page 6).

30. Q. Who are the labels targeted at?
A. The label will be required to be placed adjacent to the service points for the benefit of service personnel.

31. Q. Does this requirement apply to aerosols? And if so where should it be placed?
A. No. The requirement applies to the equipment listed in article 7. This includes “containers” (so the labelling requirement applies) but “containers” are separately defined in article 2(l) as a product designed primarily for transporting or storing F gases. “Containers” does not mean therefore all aerosols.

32. Q. Does this requirement relate to existing equipment as well?
A. No, it refers to equipment before it is placed on the market; the definition of “placing on the market” in Article 2(g) refers to the supply or making available of products and equipment by producers or importers for the first time in the EU.

33. Q. Hermetic system – is this defined as sealed at the point of manufacture or following commissioning? A system may be delivered as a split system and hermetically sealed after the system is installed and charged.
A. “hermetically sealed system” is defined in article 2(k). This definition does not distinguish between systems sealed at manufacture or following installation.

34. Q. Do all hermetically sealed systems need to be labelled or are systems with a charge below 6 kg exempt?
A. All hermetically sealed systems need to be labelled as containing F gases. There is no exemption.

35. Q. Will hermetically sealed systems need to state the charge?
A. It is for the Commission to establish the type of label that is to be used and this could include a reference to the refrigerant charge. The label will however have to state the type of F gas that is contained in the product or piece of equipment.

36. Q. Does labelling include the foams in a refrigeration system?
A. Bearing in mind the purpose of the Regulation, there is a good case for taking the view that the label should specify that foam in equipment has F gases in it as well as the circuits. However, this will not be resolved until the Commission act under Article 7.3 and propose the form of the label to be used.

Article 8: Control of Use

37. Q. What uses are prohibited under Article 8?
A. Two bans will be introduced by the Regulation. The use of sulphur hexafluoride or preparations thereof in magnesium die-casting, except where the quantity used is less than 850 kg per year, and the use of sulphur hexafluoride or preparations thereof for the filling of vehicle tyres.

Article 9: Placing on the Market & Annex II

38. Q. Does this Regulation cover the gases themselves or the products and equipment containing F gases?
A. The scope of the Regulation has been limited to products and equipment containing F gases, rather than the gases themselves.

39. Q. Why not ban all products with F gases in them?
A. Fluorinated gases are used in a wide variety of products and have many applications. In many cases there are no safe, cost-effective, technically feasible and more environmentally friendly alternatives available.

The control of use and placing on the market restrictions have been introduced where they are necessary either because it is difficult to reduce F gas emissions from these applications or because the use of F gases is considered inappropriate. In such circumstances the use and placing on the market controls are proposed because technically feasible and cost effective alternatives are available.

40. Q. What are the placing on the market prohibitions?
A. The placing on the market of products and equipment, containing, or whose functioning relies upon, fluorinated greenhouse gases, as listed in Annex II of the Regulation shall be prohibited as specified in that Annex.

41. Q. Is an aerosol classed as a container?
A. Containers are restricted to those defined in article 2(l). Non-refillable containers as defined in article 2(m) will be banned from 7 July 2007. Otherwise, there is not a general ban on aerosols

Article 10: Review

42. Q. When will the Commission complete its Review of the Regulation?
A. There are two dates in this Article to be aware of: By 31 December 2007 the Commission will review the Regulation and, if appropriate, present legislative proposals with respect to applying the provisions of Article 3 (containment) to air conditioning systems, other than those fitted to motor vehicles, and refrigeration systems contained in modes of transport.

By 4 July 2011, the Commission will produce its report based on experience of the application of the Regulation. This will include assessment of possible additions to the products listed in Annex II. Any proposed additions would follow from a study into technical feasibility and cost-effectiveness.
43. Q. Does the open scope of the Review mean the Commission can cover anything it likes?
A. In practice yes, but it is likely to focus its efforts on the issues listed in article 10. The Commission will need to provide a solid base for any proposal and this would involve prior consultation.

Article 12: Committee

44. Q. What is the F Gas Regulation Committee?
A. It is referred to in article 10 of the Regulation and assists the Commission. The Committee was set up under EC Regulation 2037/2000 on substances that deplete the ozone layer.

This avoids creating a completely separate and new Committee to deal with F gases and provides the opportunity for one committee to a have a mixed agenda dealing with a range of refrigerants/fire protection substances (ozone depleting substances and F gases).

45. Q. Who will be on the "committee"?
A. It is chaired by the Commission and each of the 25 Member States is entitled to send representatives. The Committee enables the Commission to adopt measures, provided the Committee is in favour of them. Such measures would then have binding effect on the Member States affected by the measures.

46. Q. What measures can the Commission propose to the Committee?
A. The F gas regulation tasks the Commission with proposing measures on:

- Standard leakage checking requirements (art3 (7)).
- Minimum requirements and mutual recognition for training programmes and certification for relevant personnel and for companies and personnel involved with containment and recovery (art 5(1)).
- Format for notifying to the Commission Member State training and certification programmes (art 5(5)).
- Format for reporting information to the Commission (art 6(2)).
- Form of label to be used for certain products and equipment containing F gases (art 7.3).

47. Q. Can stakeholders contribute to the Commission's preparatory work for the Committee?
A. Yes. It is important that stakeholders are ready to assist the Commission while proposals are being drafted, for example in drawing up minimum qualification requirements. The first EU stakeholder meeting will be held on 8 October 2006 in Brussels.

48. Q. How will the Committee decide whether to support Commission proposals?
A. By a qualified majority of Member States voting in favour.

49. Q. And if there is no qualified majority in favour?
A. If there is a qualified majority against the draft measure, or no opinion is delivered, the Commission must submit the proposal to the Council of Ministers. The Council then has three months to either adopt or block the Commission's proposal by QM, or amend it by unanimity. If there is a qualified majority against the proposal then the Commission must reconsider it. If the Council does not act, the measures are adopted by the Commission.

50. Q. Are these the same arrangements as in the EC regulation on substances that deplete the ozone layer?

A. No. Unless there is a qualified majority against a Commission proposal, the Commission adopts the proposal.

Article 13

51. Q. Who will establish the sanctions for breaching the Regulation?
A. It is for each Member State to define its own sanctions for offences. Defra is currently in the process of drafting sanctions and penalties regulations for key obligations in the F gas Regulations. We plan to consult on these regulations by January 2007, and they will come into force by July 2007, to co-inside with the key obligations in the regulations.

UK Government, Scottish Executive, National Assembly for Wales 2006