

Department for Environment, Food and Rural Affairs

Guidance for Electronics Company

Guidance: F Gas and Ozone Regulations

Information Sheet E 1: Overview

April 2012

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This Information Sheet provides guidance on compliance with the EU F gas Regulation in relation to the use of HFCs, PFCs and SF₆ in the production of electronic components. Certain obligations apply to the use of F gases and Ozone Depleting Substances (ODS) in all facilities operated by electronics producers.

There are several applications which currently rely on the use of HFCs, PFCs and SF₆ in electronics production, such as:

- **PFCs**; for the cleaning of furnaces (chambers) used for chemical vapour deposition (CVD) processes.
- **PFCs**; for dry plasma etching, vapour phase soldering and vapour phase blanketing.
- **PFCs**; for leak testing of electrical components and as cooling liquids.
- **SF₆**; for etching of polysilicon and nitrite surfaces
- **NF₃**; is also sometimes used in electronics production. Whilst NF₃ is a powerful fluorinated greenhouse gas, it has not been included in the Kyoto Protocol as worldwide usage is very low and the global warming characteristics have yet to be fully evaluated. It is therefore not covered.

Please note that this Information Sheet only refers to use of F gases for electronics production, which is the main area of F gas use for electronics manufacturing companies. Most electronics producers will also have large scale usage of F gas for air-conditioning purposes. Refer to Information Sheet GEN 3 to check whether you have any other uses of F gases.

Summary of Key Obligations under the EU F Gas Regulation

If such fluorinated greenhouse gases (HFCs, PFCs and SF₆) are used, the company must ensure that it meets the requirements in the EU F gas Regulation 842/2006¹.

In Great Britain the Fluorinated Greenhouse Gases Regulations 2009 (Statutory Instrument No 261) applied from 9th March 2009. This Statutory Instrument prescribes offences and penalties applicable to infringements of the EU F gas Regulation.

The EU F gas Regulation and associated Statutory Instrument aim to reduce emissions of the HFCs, PFCs and SF₆. The obligations for electronics companies are listed in summary below.

¹ The full text of the Regulation can be found on a link in Information Sheet GEN 4.

The EU F gas Regulation requires:

Recovery	Fluid recovery during plant servicing and maintenance and at end of life of fluid containers.
Reporting	Reporting of imports of F gases from outside the EU if imports exceed 1 tonne per annum.
Training	Use of personnel with appropriate qualifications .
Taking delivery	You may be asked by suppliers of F gases to be certificated to take delivery. This obligation applies to those employing personnel to recover F gases. This means the organisation can only take delivery of containers of F gases if relevant personnel are appropriately qualified.

Some Critical Dates

4th July 2007	Fluid recovery from all systems where technically feasible and from fluid containers at end of life. Recovery should be undertaken by personnel with appropriate qualifications .
1st April 2008	Reporting of imports.

Other Relevant Information for Industrial Facilities

Defra has a series of Information Sheets that is intended to help producers understand their obligations under the F gas and Ozone Regulations.

The following information sheets may be of relevance:

Number	Content of Information Sheet
<i>Information Sheets Addressing Electronics Producers Issues</i>	
E 1	Short overview of issues for electronics producers
<i>Information Sheets Addressing Refrigeration and Air-conditioning Issues</i>	
RAC 1	Short overview of issues for users of RAC Systems.
RAC 2	Background to F gas and ODS use in RAC Systems. Sources of emissions. Emission reduction opportunities. Alternative refrigerants.
RAC 3	Detailed description of key obligations for companies
RAC 4	Getting started – advice on the steps to take to achieve compliance
RAC 5	Qualifications & certification – details about the training and certification requirements for RAC personnel and contracting companies.
RAC 6	Practical Guidance – dealing with numerous detailed RAC topics including: leak testing, record keeping, refrigerant recovery, labelling of equipment

RAC 7	Alternative Refrigerants – minimising emissions and options for refrigerant selection.
RAC 8	HCFC Phase-out.
<i>General F Gas and ODS Information Sheets</i>	
GEN 1	Glossary of Terms related to F gas and ODS Regulations
GEN 2	Background to F gas and ODS fluids
GEN 3	Overview of markets and equipment affected by the F gas and ODS Regulations
GEN 4	Links to full copies of all relevant Regulations and legislation
GEN 5	Guidance on estimating refrigerant charge.

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The information in this document is intended as guidance and must not be taken as formal legal advice or as a definitive statement of the law. Ultimately only the courts can decide on legal questions and matters of legal interpretation. If you have continuing concerns you should seek legal advice from your own lawyers.

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