

## **The new Refrigerant Regulations (EC)517/2014, your environmental chamber & your responsibilities.**

The regulations are changing and will have an effect on most users / owners of environmental chambers.

The European Union's F-Gas Regulation No 842/2006 became law 4th July 2006. This imposed certain obligations, effective 4th July 2007, on "operators of equipment using refrigerants" that operators of environmental chambers should have been aware of.

However, there are significant changes coming into force at the end of 2016 due to the new F-Gas Regulation (EC) 517/2014 that came into effect on 1st January 2015. One of the major changes to impact operators of equipment with a refrigeration system as part of the unit relates to the way in which the thresholds for mandatory leak checks are arrived at. Using the GWP (Global Warming Potential) of the particular refrigerant in the system, the CO<sub>2</sub> equivalent tonnage is calculated and from this, the requirement / frequency to carry out leak checks is determined. Whereas previously they have been based on the weight of the refrigerant charge, this now means that the threshold levels for leak checking different refrigerants varies depending upon the GWP of the refrigerant that is used, and as a result these thresholds have reduced in most cases. These new limits come into effect from 1st January 2017.

F-Gases include HFCs which are the most common refrigerants, and your environmental chamber will contain at least one of these, most likely R404a, and R23 if it is capable of -70°C. The regulation aims to minimise emissions of these gases, which increase global warming if they should escape into the atmosphere.

### **User / Operator Responsibilities**

Under the F-Gas and EU Ozone Regulations "Operators" are defined as people or organisations that have actual control over the technical functioning of the equipment. The legal responsibility for compliance with the F-Gas and EU Ozone Regulation lies with the operator.

Owners / operators of equipment with refrigeration systems MUST:

- Take steps to prevent leaks, and repair any leaks as soon as possible, and repeat the test within a month to check the repair worked, using certified personnel
- Arrange proper refrigerant recovery by certified personnel during servicing and disposal of end of life equipment and plant
- Carry out leak checks to the schedule as shown below
- Ensure that only certified competent personnel carry out leakage checks
- Maintain records of refrigerants and servicing

### Leak checking schedule.

The checking (to be done in a way to be defined in detail by the EC) varies depending on the refrigerant type and the GWP specified in tonnes CO<sub>2</sub> equivalent, the current thresholds are by weight of refrigerant, 3Kg, 6Kg and 30Kg, as of 1<sup>st</sup> January 2017 they will be:

- At least annually for systems with 5 tonnes CO<sub>2</sub> equivalent or more
- At least once every 6 months for systems with 50 tonnes CO<sub>2</sub> equivalent or more
- At least every 3 months for system with 500 tonnes CO<sub>2</sub> equivalent or more
- Systems must be rechecked within one month after a leak has been repaired to ensure that the repair has been effective

The table below shows the leak detection threshold of 3 refrigerants commonly used in environmental chambers and the threshold equivalent is expressed in weight of the refrigerant as a comparison to the current regulations:

Refrigerant	Other names	GWP	Leak detection: 5 tonnes Co <sub>2</sub> e Threshold equiv. weight (Kg)	Leak detection: 50 tonnes Co <sub>2</sub> e Threshold equiv. weight (Kg)	Leak detection: 500 tonnes Co <sub>2</sub> e Threshold equiv. weight (Kg)
R404A	SUVA HP62 FX70	3933	1.3Kg	12.7Kg	120Kg
R23		14800	0.3Kg	3.4Kg	34Kg
R508B	SUVA 95	13396	0.4Kg	3.7Kg	37Kg

Equipment that did not require leak checks under the 2006 regulation may do so now if it contains an F gas with a high global warming potential, such as R23 & R404A. This is due to the significant drop in thresholds from 3Kg of weight of refrigerant, as can be seen above.

### Keep records

The operator of equipment, and the company that services it, must keep the following records about any equipment that has to be checked for leaks (i.e. any equipment that contains F gas equivalent to more than 5 tonnes of CO<sub>2</sub> equivalent):

- quantity and type of gas in the equipment when it's installed
- quantity and type of gas added / removed during any maintenance (e.g. leak repairs)
- details (name, address and certificate number if relevant) of any companies that install, service or decommission the equipment
- dates and results of all mandatory leak checks
- measures taken to recover and dispose of gases when the equipment is decommissioned prior to disposal (e.g. disposing of it through a registered waste carrier)



You must also record if the gas used in the equipment has been recycled or reclaimed and if so the:

- details of the recycling or reclamation facility (name, address & certificate number if it has one)
- quantity of any gases recovered

You must keep records for 5 years and make them available to government officials if they ask for them.

The following requirements were not in the previous regulation:

- recording measures taken to recover and dispose of gases
- recording if the gas is recycled or reclaimed and the facility that recycled or reclaimed it

### **In Summary**

As an owner, user or operator of equipment with a refrigeration system you have an obligation to ensure you meet these requirements. Previously most chambers up to 1000l in size would have had a refrigerant charge of less than the current 3Kg threshold, however as of 1<sup>st</sup> January 2017, many of these chambers will fall into these new leak check limits, particularly chambers able to reach -70°C, as they will contain either R23 or R508.

Customers who have a service contract with Alphatech will already meet the regulations, as the system is regularly leak checked by competent personnel; a record log sheet to be included in your service manual will be supplied during the next service visit if it is required.

If you have any doubt or require any clarification regarding these new regulations and the refrigerant in your chamber please do not hesitate to contact us, we will be happy to discuss your current position and requirements regarding these new regulations.

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