



Guidance on the future use of R404A and the new F Gas Regulations

The new F Gas Regulations which come into force on 1st January 2015 place restrictions on the use of certain HFC refrigerants in certain applications. R404A has a GWP of 3922 and is therefore in the group of refrigerants with a GWP >2500 which will be most affected by the new regulations. The key parts of the regulation that will have a major impact on the use of R404A are;

1/ From 2018 there will be a significant phase down in the amount of HFCs placed on the market. This reduces the supply of HFCs from the 100% level of 2015, to just 21% of that total in 2030, with a major cut of 37% in 2018.

2/ From 2020 there will be a ban on the use of refrigerants with a GWP of 2500 or more in new stationary refrigeration equipment, except that intended for application designed to cool products to temperatures below – 50 °C

3/ From 2020 there will be a ban on the use of refrigerants with a GWP of 2500 or more for service and maintenance of refrigeration equipment where the charge size is greater than 40 Tonnes CO₂ equivalent (approximately 10kg of R404A). There are exemptions for military applications and or systems intended to cool below -50°C product temperature.

4/ Until 2030 the use of reclaimed and recycled R404A for service and maintenance is allowed

5/ From 1st January 2015 Leak Detection requirements have changed from 3kg, 30kg and 300kg thresholds to 5T, 50T and 500T CO₂Eq. From 1st January 2015 a R404A system with a charge of 127kg or more will also need automatic fixed leak detection.

Future availability of R404A

The phase down of HFC refrigerant has been derived from a baseline of HFCs placed on the market in 2009- 2012 in CO₂ equivalent tonnes calculated from the GWP of the various refrigerants. In 2016 and 2018 the quantities allowed to be placed on the market are reduced by 7% and 37% from the baseline. Furthermore in 2017 pre-charged equipment from outside the EU must be included within the quota for the first time, which may account for as much as 10% of use. This part of the regulation does not ban any refrigerant but the total amount placed on the market in a year must remain within the maximum allowed. Those allocated quota to place on the market are limited to supply a total amount of CO₂ eq Tonnes, but are able to decide what product mix they wish to supply. In simplistic terms this means it is possible to supply larger quantities of lower GWP refrigerants than higher GWP refrigerants such as R404A.

It is not known precisely what effect the reductions in quota will have on the supply of R404A in 2016, 2017 and 2018, except that the overall use of high GWP refrigerants such as R404A will need to reduce significantly during that period and cannot continue at current levels. This can be achieved by a number of measures. Better leak prevention and detection, a move away from the use of R404A in new equipment to lower GWP refrigerants and conversion of existing systems. The speed at which this happens will determine the effect the phase down will have on those still needing to buy R404A in 2017 and 2018.

Should you be using R404A in New Equipment?

Anyone installing equipment with R404A now will probably have to retrofit to a lower GWP refrigerant in the next few years, this is likely to be before the end of the natural working life of the system. You should consider carefully therefore whether it makes economic sense to use R404A in new equipment and strongly consider equipment that uses lower GWP alternatives.

What other Refrigerants have a GWP over 2500

Whilst this guidance note relates to R404A, as it is the most prevalent gas used in refrigeration applications, most of the comments also apply to all refrigerants with a GWP>2500. These are R507, R422A, R422D, R434A and R428A.

What should end users or suppliers do now?

ACRIB advises that you seek the views of the equipment manufacturers, refrigerant producers and suppliers about the effect quotas may have on their ability to supply R404A in future and the suitability of lower GWP alternatives available for the application in question.

Some useful documents with more information:

- The full text of the new regulation including the ban details is available at http://ec.europa.eu/clima/policies/f-gas/legislation/documentation_en.htm
- Epee (European Partnership for Energy and the Environment) Guidance; http://www.epeeglobal.org/epeedocs/internet/docs/F-Gas_Factsheet_EPEE_04102014_FINAL_8612.pdf
http://www.epeeglobal.org/epeedocs/internet/docs/EPEE_FAQ_on_the_new_F-Gas_rules_-_EN-LR_8609.pdf
- AREA (European contractors association) guidance document for contractors; <http://www.area-eur.be/system/files/Documents/AREA%20guidelines%20Fgas%20-%20Master%201%20%28FINAL%29.pdf>
- The ACRIB website has news and updates www.acrib.org.uk - if you register we will send information when available. The GWP of refrigerants as defined by F-Gas 517/2014 can be found in this ACRIB document http://www.acrib.org.uk/web_images/documents/New%20FGAS%20Regulation%20&%20GWP%20Values%2030.5.14.pdf
- Government F GAS Support Website www.defra.gov.uk/fgas and helpline
- A useful Guide to F Gas From compressor manufacturer BITZER <http://www.bitzer.de/download/download.php?P=/doc/&N=a-510-1.pdf&cocode=DE>
- The 2014 European F Gas Regulation 517/2014 is directly applicable in UK law. The full text of the 2014 European F Gas Regulation is available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.150.01.0195.01.ENG

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