



TB03: Refrigerant use restrictions and bans

1 OLDER REFRIGERANTS: CFCs AND HCFCs

Ozone depleting (ODS) refrigerants such as CFCs and HCFCs have been banned from use in the UK for some time for use in new systems or for using recycled refrigerant in existing systems, but there remains a great number of systems either in use or mothballed and left in situ containing these refrigerants and we frequently receive queries on how contractors need to deal with this scenario when they come across it.

CFCs such as R12 have been prohibited from use since 1995 in the UK and regulatory text covering these substances has been completely removed from publicly accessible Government libraries now.

HCFCs such as R22 and R502 have been prohibited for use in new equipment since 2001; and since 1st January 2015 the use of reclaimed or recycled HCFC refrigerant has also been prohibited.

It is still permissible to use equipment containing these refrigerants, and those systems must be leak checked at least annually in line with the F-Gas Regulations, but there are restrictions on what work can be performed on the systems:

- It is against the law for anybody to connect a manifold gauge set to a system containing one of these refrigerants unless it is for the purpose of carrying out a decant of the charge to allow for the refrigerant to be sent for destruction. If gauges are connected to a system and CFC/HCFCs are found to be in that system, then the charge must be recovered and sent for destruction. An alternative replacement refrigerant can then be charged into the system, after pressure testing and evacuation, to put the system back into operation.
- If a system containing CFC/HCFC refrigerant requires a component change within the refrigerant circuit which requires a decanting of the charge, then the refrigerant charge must be recovered and sent for destruction. An alternative replacement refrigerant can then be charged into the system after pressure testing and evacuating to put the system back into operation after the faulty component has been replaced.

It is absolutely prohibited to put the recovered refrigerant back into the system after any repair work which required decanting of the charge.

2 PRODUCT PLACING ON THE MARKET BANS

EC517/2014, Annex III sets out the timetable for various different sectors and uses of refrigerants where the sale of these systems/applications becomes illegal after certain dates. At the time of publication the UK is still working to the EC 517/2014 criteria and this technical bulletin will be updated once the UK has updated the F-Gas Regulations currently under review, but a number of recent queries regarding the use of R404A in particular has prompted this technical bulletin.

ANNEX III

PLACING ON THE MARKET PROHIBITIONS REFERRED TO IN ARTICLE 11(1)

Products and equipment Where relevant, the GWP of mixtures containing fluorinated greenhouse gases shall be calculated in accordance with Annex IV, as provided for in point 6 of Article 2		Date of prohibition
11. Refrigerators and freezers for commercial use (hermetically sealed equipment)	that contain HFCs with GWP of 2 500 or more	1 January 2020
	that contain HFCs with GWP of 150 or more	1 January 2022
13. Multipack centralised refrigeration systems for commercial use with a rated capacity of 40 kW or more that contain, or whose functioning relies upon, fluorinated greenhouse gases with GWP of 150 or more, except in the primary refrigerant circuit of cascade systems where fluorinated greenhouse gases with a GWP of less than 1 500 may be used		1 January 2022

What this means in practice:

“Commercial use” is defined as meaning:

“used for the storage, display or dispensing of products, for sale to end users, in retail and food services.”

In effect this includes every fridge, freezer, bottle display cooler, ice cream / sundae machine, ice machines, and more in every food outlet or store which is accessible to the public.

The F-Gas Register are aware of many public and private premises which can come into this scope where the use of flammable substances is strictly prohibited, and the GWP limits being applied in the above will almost always necessitate the use of refrigerants which have at least a degree of flammability. Airports, railway stations, and military bases are just as example of where these restrictions apply.

DEFRA have previously stated that a system supplied with no refrigerant in it, but a holding charge of OFN (oxygen free nitrogen), with the intention of subsequently charging with a refrigerant with a GWP above 150 would not “technically” be in breach of the regulations, but would be considered by the authorities to be *not in the spirit of the regulation* and would therefore be in breach enforceable by law.

“Multipack centralised systems” is defined as meaning:

“systems with two or more compressors operated in parallel, which are connected to one or more common condensers and to a number of cooling devices such as display cases, freezers or to chilled store rooms”

The scope for these prohibitions are far reaching, right across the retail sector – but it is important to note that these prohibitions are on products being “placed on the market”¹ and are not applied retrospectively.

¹ “Placing on the market” essentially means selling or supplying to another entity.

Single Split air conditioning systems containing less than 3kg of fluorinated refrigerant must use a refrigerant with a GWP of less than 750 by 1st January 2025.

In reality there are very few systems meeting this criterion still on the market using refrigerant of 750 or higher GWP due to the quota restrictions that are limiting how much R410A, for example, is available.

Most small to medium duty split type systems are now already being supplied either with R32 (with a GWP level of 675) or R290 (with a GWP of 3 and being a hydrocarbon (HC) are not currently in-scope of these regulations in any case).

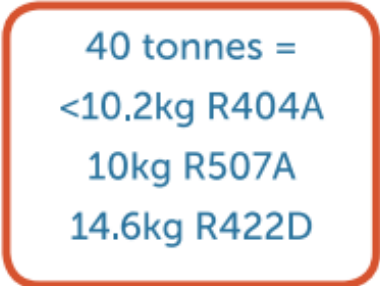
3 SERVICE BANS

The use of virgin fluorinated greenhouse gases (HFCs) with a GWP² of 2500 or above to service or maintain refrigeration equipment with a charge of 40 tonnes CO₂ equivalent or more has been prohibited since 1st January 2020.

The figure on the right shows what this means for some refrigerants as an example of how many kgs can be used for a 40 tonnes limit.

There are no restrictions on the servicing or long-term use of the systems, only that virgin refrigerants with a GWP of 2500 or more cannot be used any longer.

Exemptions to this service ban apply to military applications or where the equipment is used for applications cooling products to below -50°C.



40 tonnes =
<10.2kg R404A
10kg R507A
14.6kg R422D

An extension of the use of fluorinated refrigerants with a GWP of 2500 or more applies until 1 January 2030 for:

- **Reclaimed refrigerant** used for the service and maintenance of existing refrigeration equipment, provided the refrigerants have been labelled in accordance with Article 12(6).
Note: these reclaimed refrigerants must not be used in new equipment being installed. This exemption only applies to maintaining or servicing existing systems.
- **Recycled refrigerant** used for the service or maintenance of existing refrigeration equipment provided they have been recovered from such equipment. These recycled gases may only be used by the undertaking which carried out the recovery as part of service or maintenance or the undertaking for which the recovery was carried out. In essence this means that the service company who carried out the physical recovery can recycle and re-use the refrigerant, or the end user can retain the recycled refrigerant to re-use on their systems on that site.

² GWP = global warming potential, based on the Intercontinental Panel on Climate Change (IPCC) 4th Assessment Report figures.