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Safety, properties & use of fluorocarbons

Created: April 2003
Updated: January 2016

End of life HFCs

When any piece of equipment reaches the end of its service life, it is good practice to attempt to recover all of the components for safe disposal or, better still, re-use. In the case of refrigeration equipment, the fluid in the system can be recovered and reprocessed to be used again. Recovery of the insulating gas in plastic foam insulation is much more difficult and destruction is typically undertaken at end of life.

These processes of recovery and recycling are sustainable and fluids that can be safely and conveniently removed and re-used represent sustainable options.

HFCs are intrinsically safe. They are, effectively, non-toxic. Most are not flammable and those that do burn have a narrow range of "combustion limits". This means that they can be made inert with non-combustible gases relatively easily. As a result, HFCs are routinely recovered from used equipment at end of life and also during servicing. In fact F-Gas Regulation 517/2014 requires recovery of HFCs from refrigeration and air-conditioning equipment for recycling, reclamation or destruction from stationary refrigeration, air-conditioning and heat pump equipment and from refrigeration units of refrigerated trucks and trailers¹.

Other chemical refrigerants, such as hydrocarbons (for example propane), are highly flammable and have much wider combustion limits and it is not practically possible to render them safe by "inerting" with non-combustible gas. This leaves destruction as the only viable end-of-life option.

¹ More information on the F-Gas Regulation can be found on the EFCTC website ([Figaroo II - insert LINK](#))