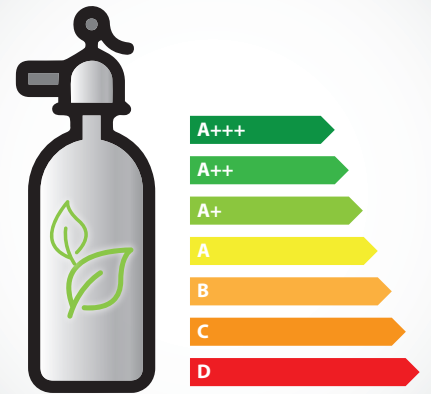


Refrigerants, F-Gas Regulation, what will change?



In recent decades, the impact of refrigerants on the environment has become a major issue. The dispersion of refrigerants into the atmosphere contributes to destroying the ozone layer and thus to increases in the greenhouse effect responsible for global warming.

Whether by design, renovation or even maintenance, **fluid leakage must be avoided**. Hengel is dedicated to reducing fluid leakage and aims to limit this by selecting its material whilst respecting the qualitative manufacturing procedures of its refrigerating equipment (for example: welds and connections or distribution pipes) and optimizing the refrigeration circuits. However, **it is the effort of all mankind that will help limit the damage to our ecosystem.**

In France, in 1997, a study showed that the rate of annual leakage could reach 30% of the total amount by weight (or mass) of refrigerants found in refrigeration systems for supermarkets. (1) Since regulations have been put in place to deal with these problems by forcing the gradual replacement of HFC (hydro-fluorocarbons / fluorinated gases) with high **GWP**. The abbreviation «**Global Warming Potential**» means the global warming potential of a gas emitted into the atmosphere. The final regulation date of 2014 (EC 517/2014) requires all member states to gradually reduce the use and availability of HFCs. The goal is a reduction of 79% by 2030.

OPERATORS' OBLIGATIONS

Operators must make sure that all equipment containing a refrigerant quantity ≥ 5 tons of CO₂ equivalent (≥ 1.27 kg of R404A) be audited by a certified person.

However, there are exemptions for equipment <3 kg or hermetic <6kg (until 31/12/2016)

The sealing checks must be performed every 3 to 12 months depending on the load (see Table opposite) and recorded in a mandatory register for 5 years for equipment ≥ 5 tons of CO₂ equivalent. During the evacuation of its used equipment, a certified person must proceed to the recovery of gas so that it makes the elimination (recycling, regeneration or destruction).

LEAK TEST FREQUENCY CONTROL (2)

CO2 equivalent ton>		5	50	500
Refrigerant	GWP	Refrigerant quantity in kg		
R134A	1430	3.50	34.97	349.65
R404A	3922	1.27	12.75	127.49
Obligatory control every		12 months*	6 months*	3 months*

** If equipped with a leak detection system, the duration is doubled*

R404A has a GWP= 3922, which means that 1 kg of R404 is equivalent to 3922kg of CO2 or R744.

PLACING ON THE MARKET AND INSTALLATION OF REFRIGERATION EQUIPMENT

Hengel currently offers alternative refrigerant gases for its equipment: R134A or CO2 (trans-critical and sub-critical) especially on retarder proving cabinet/chambers and tunnels. We are actively working to bring you future alternative gas with more eco-friendly facilities for freezing, blast chilling and storage. Indeed, from the 1st January 2020 hermetic refrigerators and freezers market containing HFCs with a GWP \geq 2500 will be prohibited for sale. From the 1st January 2022 the GWP will be \leq 150.

The transition to low fluid greenhouse (low GWP index) is not simple. These gases have inconveniences, either at the security level (toxicity, flammability), or thermodynamically level (working pressures, control of gas phase condensation, lubrication etc...).

In addition, for equipment containing HFCs, all installation, maintenance and repairs can only be carried out and administered by certified companies. Non-hermetic equipment may only be sold to the end user if the installation is performed by a certified company.

PRODUCT LABEL

From the 1st January 2017 the product label must clearly indicate the nature of the gas, quantity, weight and CO2 equivalent, or the quantity for which the equipment is designed and GWP gas. Indications will be added to user equipment manuals and commercial documents for GWP \geq 150.

RESTRICTIONS ON USE

It is forbidden to use HFCs with a GWP \geq 2500 for servicing or maintenance. However there is a reprieve on the prohibition until 1st January 2030 for regenerated HFCs with a GWP \geq 2500 (only if they are labelled) and recycled HFCs with a GWP \geq 2500 recovered from this type of equipment during maintenance or servicing.

Note: pre-loaded equipment must be registered and provided with a declaration of conformity, whereby the manufacturer or importer assumes responsibility. The pre-charged quantity is subject to a quota system.

Sources :

- (1) Réf.: Zéro fuite – Limitation des émissions de fluides frigorigènes, D. Clodic, Pyc Editions, 1997.
- (2) Source :<http://www.energieplus-lesite.be/index.php?id=11278#c20968253>