

Memo regarding the phasing out of HCFC gasses and the controlled use of HFC gasses

Prepared for: 360 quality association

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The Regulations

Presently there are two standing E.U regulations which affect the use of refrigerant gasses within the E.U. or on E.U. registered Installations. One is concerned with ozone depleting gasses, and the other greenhouse gasses.

- **EU 1005/2009** – This regulation replaced the original rule, 2037/2000, and deals with the phase out of ozone depleting substances (HCFCs), and is a result of the Montreal protocol.
- **EU 842/2006** – This rule deals with Greenhouse gasses (HFCs) and is in play now, however a replacement act is presently in process in the EU and may change the future use of HFC refrigerants, this is a result of the Kyoto protocol.

Authors note: Both regulations are applicable to EU flag ships only. However, some nations interpret this to also cover ships and installations that are owned- or operated by E.U based entities, regardless of the flag they fly. This specific interpretation is being challenged in national courts.

Effects

The regulation concerning ozone depleting gasses is forcing the phasing out of HCFC type refrigerants, and steer towards HFC type gasses, or 'natural' refrigerants. This is the regulation that is driving the phase out of R22.

This phase out is now at its penultimate stage and can be concluded to be a 'done deal'.

The use of all HCFC gasses will cease on EU flag ships and EU installations by 1st January 2020.

However, as of the 1st January 2015 it is forbidden to refill, top up or supply any form of HCFC; hence effectively all systems must be converted to use an HFC by this date.

As of 1st January 2015 it will be impossible to source, obtain handle or transfer any form of HCFC within the E.U. or on E.U. registered installations.

The handling and transferring ban will also affect vessels of non E.U. flags when in the E.U.

With the abandoning of HCFCs (IE: R22) most operators are adopting HFCs for existing equipment and 'natural' refrigerants for new equipment and around 90% of existing installations now use HFCs as the E.U. intended.

However there are very few HFCs that work as efficiently as HCFCs and the result is that more energy is expended to do the same work. I.E.; the vessels power consumption increases, thus increasing its carbon footprint.

With the onset of carbon credits and carbon trading not so far away we are sure that the E.U. will welcome the opportunity to raise more revenue from this self-created situation.

This then places operators in the sphere of regulations covering greenhouse gasses.

Turning towards the use of replacement HFC gasses. E.U. Regulation 842/2006 places responsibilities on the user in respect to maintenance of systems, certification of users and record keeping, however there is, at present, no limitation on the use of particular gasses or what application they are used for.

This might be subject to change.

Further effects of revision to legislation effecting HFCs

A revision to 842 is presently in process through the E.U., for which 2 drafts have been released to the public domain in order to gauge the industry reaction.

Several aspects of the planned revision are being contested by various industry bodies, not least by E.C.S.A. on behalf of the shipping industry via the national ship owners associations.

For those 360Q members that are not shipping based, and use HFC equipment, it is strongly recommended that they contact their appropriate industry associations in order that their opinions may be added to those presently being voiced to the E.U.

These revisions are expected to have far reaching impact on the industry as it appears to be the ultimate intent of the E.U. to phase out HFCs also, and to ultimately force the use of natural refrigerants only.

This makes sense for any new equipment as many natural refrigerants are very efficient and will use less energy to do the same job.

Principle amongst these expected measures is an anticipated cap of the GWP (Global Warming Potential) Index of HFC gasses that can be used.

E.U. drafts suggest that the E.U. intend a cap of around 2500, which will severely limit the choices of gasses that can be used on existing ships and installations where these systems were originally designed with a maximum working pressure for R22 and are required to operate at various temperatures (as opposed to systems working at one fixed temperature such as air conditioning or freezer plants).

The majority of gasses with a low GWP operate best at medium temperatures, whilst those good 'general purpose' gasses tend to have a higher GWP. Therefore the best technical choice of gasses for banana carriers may be excluded under new the new regulations.

For ships that freeze, finding a suitable replacement for R22, whilst remaining under the expected GWP limit remains problematic, with no 'like for like' replacements readily available.

The new regulations will most certainly further complicate what is already a very difficult choice for ship operators and shore installations as to what is the best gas for their specific use as it may severely limit the available options at their disposal.

Many operators may be forced to use a refrigerant that is not well suited to their purposes and with the effect that the refrigeration process will not be efficient and further increase their energy consumption.