



Tecumseh is A2L ready – are you?

Technical program director at Tecumseh, *Regis Leportier* talks about preparing for an efficient and sustainable refrigerant transition in the EU.

For some years Tecumseh has been preparing for the transition to the very low GWP refrigerants called A2L by testing and validating compressors and condensing units.

Compliance with safety requirements (related to people and goods), the highest efficiency and reliability are key considerations at design stage to make the solution cost effective for the contractor and the system owner. As a result, direct expansion commercial refrigeration equipment from 1 to 20Kw are now ready for sustainable cooling.

The use of very low GWP refrigerants will

make it possible to achieve of the objectives imposed by F-Gas by 2030, with no current vision of limited use. They are all F-Gas compliant and bring energy savings, which is the key to the future and the only true definition of the long term.

Proposing a new installation today in 2020, with equipment that complies with the use of an A2L fluid, will not only guarantee a 'future proof' solution for the customer but also the right quantities of refrigerants needed in Europe for long-term refrigeration.

Cost efficient and reliable alternatives could make the entire industry active in its

role, supporting food processing, storage and distribution, the comfort and safety of people, the reduction of food losses, the improvement of health, thanks to refrigeration components and products and essential links in the cold chain.

The recent focus on hygiene due to the Coronavirus situation will push us even more strongly to endorse sustainable solutions at reasonable cost of ownership.

It is necessary to remember that the main measure of the F-Gas Regulation has the potential to reduce emissions of fluorinated greenhouse gases through its article 3

and according to the conclusions of the Commission report of 26 September 2011 on the application, effects and adequacy of the existing containment measures, if fully implemented.

In best practice it means keeping the refrigerant inside the system with appropriate maintenance or by selecting hermetically sealed components and equipment contributing their best to efficient cooling as well as a strong environmental preservation.

The second main remarkable measure of the F-Gas 517/2014 is linked to the phase down mechanism which will drive us to use lower GWP refrigerants to sustain the availability of sufficient metric tons of refrigerant in the coming years.

By 2021 the coming big 'cut' of refrigerant placed into the market will be lowered by 45% of the reference period and even up to 60% if we consider the tonnage included by the pre-charged equipment.

In addition to this mechanism, new product bans have been in place since January 2020 such as the use of stationary refrigeration

equipment using a refrigerant with a GWP >2500 or portable air conditioners using refrigerant with a GWP >150.

The measures of this regulation require a reduction in GWP. A2L type refrigerants, which are mildly flammable, make it possible to respond favorably to the normative and regulatory framework imposed in Europe since 2015.

Why A2L are the solution in commercial refrigeration systems from 1 to 20 kW

From a user's perspective:

- F-Gas is the driver, the sooner the better to avoid cold chain maintenance issue.
- Sustainable refrigerant, industry choice from a technical and economical perspective
- Total cost of ownership (TCO) linked to the energy efficiency of A2Ls is 10 to 20% better vs other natural alternatives
- It's no more complicated than before:
- Selection, handling, maintenance is as easy as today with HFCs – beyond a few specific precautions taken in terms of safety, over the lifetime of an installation, working with

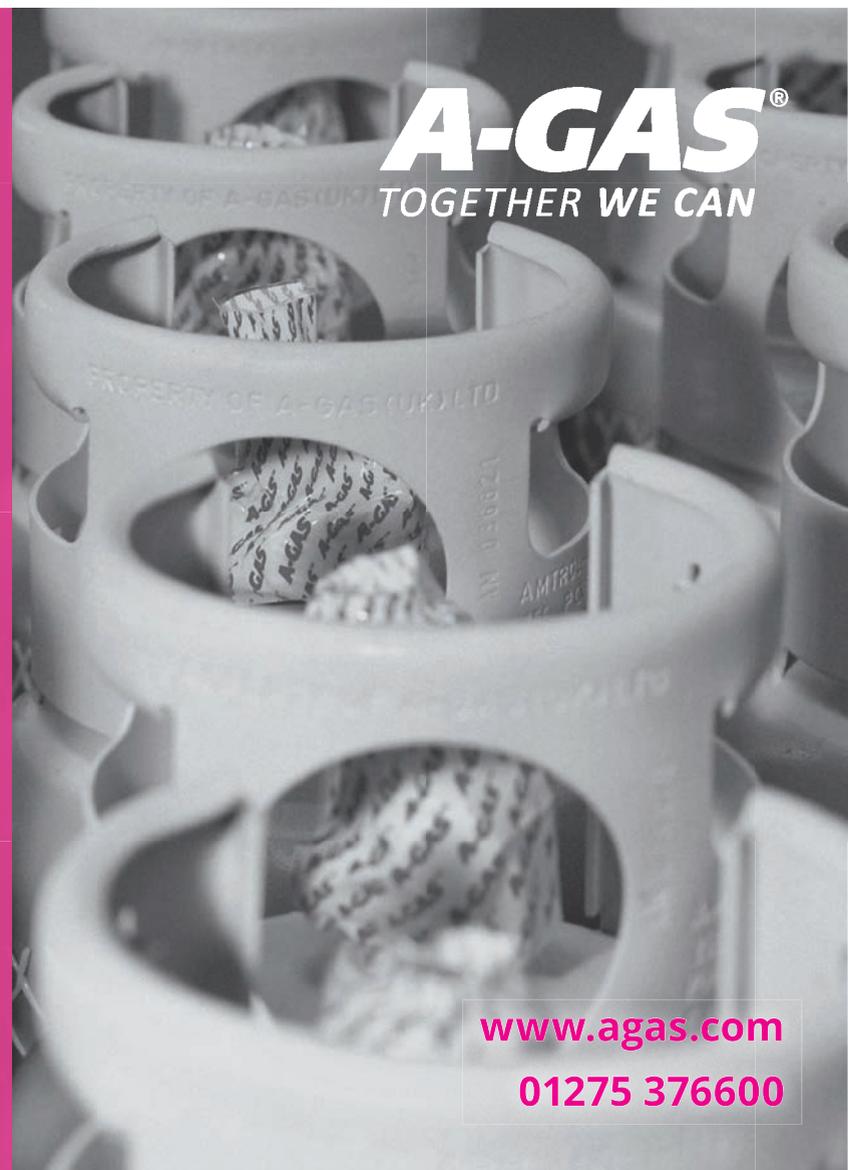
A2Ls is similar to HFCs. Very short potential learning curve. Thermodynamics very similar to HFCs.

- Main risk assessment (charge limit, ATEX..) is managed by product design, in our new generation of condensing Units SILENSYS Advanced. The remaining part for the contractor is ~20%: Choice of the right location for the condensing unit and follow good practices.
- No over-equipment required, Tecumseh condensing units are Eco-design compliant (MEPS) so with high efficiency compare to previous generation of condensing units,
- The design of this A2L new generation of condensing unit has been developed to ensure proper running at very high ambient temperature (remember 2019 heatwave).
- The guarantee of a simple solution
- The choice of a Tecumseh products 'Safe by Design' takes away the constraints
- Security of goods and people in term of risks (flammability, charge limit...) are managed by design.

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