July 2013

n°5 Climalife Contact

The European magazine for climate control system professionals

The world is changing

Change with it!

Regulations

Parliament and Commission discuss F-Gas





Opinions of the experts in the face of changes to regulations



Food industry: an effective environmental combination Process

page 8



Drop-in or conversion? Good practices to follow

M OF JE

Alain Lelièvre - Damit Europe Coordinator

The world is changing change with it!

F-Gas is currently at the heart of concerns for all stakeholders in the refrigeration and air conditioning sector. Every day, we are all bombarded with information on the future changes to this legislation. A ban on the use of HFCs as radical as that currently being considered would be dramatic. Climalife is actively defending the profession's interests and anticipating this change of direction and the use of new optimal solutions.

There is no ideal refrigerant for all applications. There are several technologies available, and their use depends on a certain number of parameters. These days, it seems unlikely that the notions of energy efficiency, performance coefficient and personal safety can be dropped from the discussions

So-called "natural" fluids are an option under certain conditions. However, they cannot replace "chemical" refrigerants because their toxicity, flammability and pressure mean certain operating precautions are required. For a number of years now, the chemical industry has been investing to reduce greenhouse gases and has developed new solutions that comply with the regulations.

Fourth generation refrigerants, known as HFOs, are now available and give everyone the choice of a very low GWP fluid that maintains or even improves the energy performance of climate control systems while ensuring safe use.

Happy reading!

Regulations

Parliament and Commission discuss F-Gas....

told you about the proposals made for the revision of F-Gas following the second version of the text under the Irish presidency. Since then, the discussions have made good progress.

On 19 June, the Environment Commission (ENVI) at the European Parliament voted in favour of reinforcing the ban on HFCs in refrigeration, air conditioning and heat pump systems.

The text issued during the Irish presidency has thus been rejected and the most restrictive amendments put forward have been retained, for example:

- A reinforced phase-down.
- Dates for the ban on placing on the market brought forward.
- Extended restrictions for placing on the reading. market
- modifications to the GWP thresholds, - types of equipment extended.
- Ban on pre-charged equipment
- A tax on CO, emissions before getting access to placing on market quotas.

Please note that this list is not exhaustive

our newsletter on 18 June 2013, we only one step in the European legislative process. Parliament has not passed anything so far.

> The working group bringing together permanent representatives of the member states will meet several times to debate the text up until 26 July.

> - If they come to an agreement, the trialogue between the Council and Parliament will begin on 1 September 2013. In the trialogue, each article is negotiated until a compromise is reach for the final text. This text will then be introduced for first reading at the end of 2013.

> - In the event of disagreement, the text introduced for first reading will be the original text put forward by the Commission, modified with the amendments validated by the ENVI Commission on 19 June 2013. In this latter case, it is highly likely it will be rejected at first

> At the same time, the professional associations (EPEE, EFCTC, ADC3R, AFCE, etc.) are working with the various institutions to advance each sector's interests. Climalife has a direct role in these discussions and promises to keep you up-to-date with any changes.

and validation by the ENVI Commission is Watch this space...



Whether in Northern or Southern Europe, the stakeholders in the refrigeration and air conditioning industry are wondering about the future of refrigerants and the solutions that will replace them to anticipate the legislative developments regarding F-Gas. Comments compiled from design offices.

Interview with Jean-Pierre BOHER, manager since 2002 of CETEFF, the technical design office for energy, refrigeration and fluids installed in south-west France (31). Expert at the Toulouse Court of Appeal.

Mr Boher, our customers are wondering about the current plans for changes to the regulations. As a technical design office specalising in How did you find out about Performax[™] LT? commercial refrigeration applications, what do you think about these changes?

happening about technical fluids and future solutions. Initially, I was in favour of a wait-andsee approach regarding CO₂. I waited for Bitzer to bring out its range. I then started to study it like everyone at the request of some of the supermarket and hypermarket chains who used this fluid for its below zero refrigeration output. However, I recommend moderation because it is a delicate fluid that has its own constraints and risks. "I do not look at a CO, installation in the same way as I look at a R-404 one. I am more fearful around CO, and in view of the very high pressure levels, how can safety be developed as these devices age?". I therefore use it at the customer's request or when it is part of a global logic that assures me that there is a refrigeration engineer who knows what to do near the point of sale.

Does the F-Gas proposal have a direct impact on your work?

JP. B: Yes. After7 or 8 years of hearing about the tax on R-404A, this is the first time that texts have actually been presented. We therefore which is similar to R-134a. Then the simplicity had to react immediately. In November 2012, when the F-Gas proposal came out, we were

in the middle of negotiations for two export agreements planned with R-404A. Following comparisons and thermodynamic studies, we made the decision to install Performax[™] LT to meet tomorrow's requirements today. I was surprised to see a 5 to 6% gain in overall energy compared to R-404A on booster.

JP. B: I got to know about Performax[™] LT through the first installation that was carried JP. B: I am currently very aware of what is out in France in 2010, at the Super U near Périgueux. I knew the refrigeration engineer who carried out the installation and I therefore found out about this fluid from this refrigeration engineer and then secondly from Climalife to obtain the thermodynamic characteristics.

You mention the energy saving from Performax[™] LT, more specifically, what are its advantages in your opinion?

JP. B: I am optimistic about this new fluid because Performax[™] LT does not require any change of equipment and yet meets the requirements of the forthcoming regulation. Furthermore, in the installations that I have delaying it being put into application... already been able to carry out, I have found improved performance in above zero refrigeration and a reduction of electrical power in below zero refrigeration.

clients?

JP. B: I would first of all mention its GWP, of its implementation compared to R-404A, without the need to increase the duty of the



What arguments would you put forward to your

compressors. In addition, I would emphasise how easy it is to use for refrigeration engineers. And finally, I would explain to my customers that with Performax[™] LT, the heat diffusors are reduced thanks to the higher temperature levels in heat recovery.

What will your recommendations be for the future?

JP. B: The purpose of our firm is to provide technical support for all stakeholders, users and project managers of refrigeration stations. In view of these developments, we will adapt "What we can do today is something that we couldn't do vesterday." We should recommend suitable solutions for controlling electricity consumption as we did in the past with the booster system (energy saving, increased output, doubling the life of a below zero refrigeration compressor,...) but always with the aim of simplicity.

Regarding HFO, have you any questions yet?

JP. B: I have already heard about HFO and I am very interested in this new generation. Nonetheless, I wonder about its flammability, which risks



Report

Case study



Interviewing Rob Jans, CEO of Coolsultancy, consultancy firm for refrigeration (Netherland).

Mr. Jans could vou present your company in a few words

R. J.: I created my company, Coolsultancy, in 2005 after working for a number of contractors. Today my core business is refrigeration, and 80% of my customers are supermarkets. My main clients are Plus, Deen and COOP I do the refrigeration part for all the Plus and Deen supermarkets that are built or rebuilt in the Netherlands

As a consultant, I have different system concepts, using CO_a, R-404A, R-407F, R-507, and I advise the best concept for each situation at hand as a number of factors influence the needs of a supermarket.

I am interested in innovation and protection of the environment, I tend to promote CO₂ in supermarkets. Booster systems are now more common techniques. With upcoming new regulations, refrigerants with high GWP will soon be more or less forbidden, we want to anticipate on that change.

The F-Gas regulation project aims to ban refrigerants with high GWP. What is your opinion on this project?

R. J.: The Dutch government does not have a clear strategy to promote specific refrigerants or encourage the use of better HFCs. They will follow the EU lead. This, in my opinion is wasting time that could be used to gain experience.

This project will change my everyday work. In the past, contractors made no effort to change fluids as the R-404A and R-507 are easy to use. But today, we are refusing their quotes for R-404A, so they must adapt. The F-gas regulation will help in convincing the contractors they need to offer replacement solutions for R-404A and R-507.

you see the future of your business? What are the solutions for tomorrow?

R. J.: The long-term solution is, I think, still CO₂, because it is a good solution associated with heat recovery in supermarkets. But in a market where you want to either re-use installations or cabinets in supermarkets, or where the budget is an issue, R-407F is also a good solution.

However opinions are different from one country to another. If you look at the fluids used in Holland, 70% users run on R-507 and only 30% use R-404A. In Germany for example, it is the opposite.

What is your opinion on the safety issue around the use of CO., a high pressure fluid?

R. J.: For northern countries like the Netherlands, CO, is a good refrigerant. Of course higher investment costs are related to the need to have proper equipment for transferring high pressure, although cheaper solutions are on the market.

We are very concerned about safety. All cold and the results are positive. and freezing rooms are equipped with CO detectors. And of course there is the PED (pressure Equipment Directive) a very efficient tool for installing these systems safely.

Do many contractors use and manipulate CO₂? Do you think the market dynamic will change?

R. J.: For now, only the major companies have enough experience to deal with these systems. In the future, NVKL, the branch organization for engineers and installers in the Netherlands. will have informational and training sessions so more contractors will offer services.

Now, on the subject of Performax[™] LT, could you remind us when you first heard of this fluid?

R. J.: I think the information originally came from Climalife. However, at the time, we only had figures from the flyers and a few measurements from Copeland. End-users were getting the same information and asking me for my advice. I look at specific parameters such as GWP.

There are different solutions available. How do And in my opinion, if Performax[™] LT has the same performance rate and a lower GWP then I am already happy.

What would you call advantages for Performax™ LT, compared to the rest of the market?

R. J.: All the major installations are booster systems. With boosters you want one refrigerant for the whole system, for both low and medium temperatures. No other refrigerants answer that need for the future. Unless you cascade, for example CO, and R-134a but I don't think this is a good solution because the R-134a on the cooling side requires larger tubing, bigger compressors and huge quantities of coolant.

Is Performax[™] LT a product for booster systems? Do you recommend Performax™ LT?

R. J.: Yes absolutely. 80% systems run on boosters so you want a refrigerant that you can build new systems with but also use as a drop-in. This is an argument for using Performax[™] LT, as well as the lower GWP. We realized some Plus supermarkets with R-407F

Are you getting any questions regarding the new molecule HFO?

R. J .: No, CBL *(Branch Organization for supermarkets) sometimes sends out some information to supermarkets that then contact me and ask about it, but globally they are just one bridge too far from the information. You need people able to explain between the European Committees and the end-user.

* Dutch Food retail association.



COMMERCIAL COOLING

PLUS opts for **Performax[™] LT** (R-407F)

Jos and Wilma Arts are among the first supermarket owners in the Netherlands to choose a thermal system that uses the refrigerant Performax[™] LT/R-407F from Climalife, developed by Honeywell. On 7 November 2012 they opened the doors of their attractive new Plus Supermarket on the Town Hall square in Landgraaf. The enterprise is flourishing and counts 102 employees today.

the Dutch market.

the person of Rob Jans.

over the past 15 years.

of -9°C.



Arts family belongs to the Dutch supermarket chain PLUS. The chain has decided to use Performax[™] LT where possible in any new refrigerator/freezer installations that are built in their supermarkets. One of the first examples is the Arts family's supermarket in Landgraaf.

Fir-Jado B.V. is the Arts family and PLUS supermarkets' partner in as far as in-store cooling is concerned. The company operates in the food-retail, foodservice and non-foodretail markets. As an all-round installation and

> Company: Fri-Jado Activity: Commercial refrigeration Location: Etten-Leur

Cool The pressure of the refrigerator compressor varies between Cool 🙀 19°C and 42°C, depending on the ambient temperature. The flow diagram for Performax LT/R-407F bo liquid transferred from the liquid the GWP of Performax[™] LT/R-407F is 1.824. container to the cooling and freezing objects is cooled down to approximately 8°C in the plate heat exchanger.

The great advantage of the booster configuration using Performax[™] LT/R-407F from Climalife is that the temperature of the pressurised gas never gets too high. This reduces the difference in pressure, resulting in less corrosion and therefore lower life-cycle costs for the Arts



service company. Fri-Jado is mostly active in

Fri-Jado has noted that durability is becoming a key strategic principle in the retail market, and that increasingly high performance is demanded from buildings and installations, both for new constructions and renovations. This is perfectly in line with the philosophy that Climalife promotes and follows. The two parties were brought together and advised by Coolconsultancy in

family. We shall only be able to assess the actual results once the system has been in operation for a certain time.

Besides the positive effect on energy costs, the new thermal system is also an excellent solution in view of the upcoming F-gas proposal. This proposal implies that cooling substances

with a GWP value of over 2,500 will be phased out.



The GWP of conventional R-404A/R-507A cooling substances is above this limit, while

Climalife has been particularly satisfied with the cooperation between all parties involved in the project. In the next phase, the results of the project will be assessed and communicated to you via the newsletter.

Climalife Contact

www.climalife.dehon.com

INDUSTRIAL REFRIGERATION

Greenway[®] RTU -30°C/R-407F: an effective environmental **combination for the Giraudet plant**

Giraudet, the guenelle maker located at Bourg-en-Bresse in eastern France, has opted for a new indirect refrigerated production system to replace its R- 22 installation This choice is fully in line with the company's environmental policy.

ince 2004, Giraudet has applied a lygiene, Safety and Environment oolicy and a range of projects have thus been implemented in this food processing plant specialised in premium fresh produce. The PCB transformer was replaced. water consumption reduced by 30% and energy studies have been carried out with a view to reducing electricity and gas consumption. The company then realised how much power its cooling system required.

"Once we realised this, we decided to change the coolers. They had been in operation for around thirty years so we started to look for a replacement. We must stop using R-22 on 1st January 2015 so we had to find a solution," explains Patrick Battendier, deputy managing director

The company was founded in 1910 and now employs 45 people working on 2 8-hour shifts to produce 1,300 metric tons of quenelles, sauces and soups every year. 80% of the products are sold in supermarkets, 12% in their own stores in Paris, Lyon and Bourg-en-Bresse, and 8% via non-domestic catering channels, for a total sales revenue of €8 million.

The site covers a total surface area of 4.500m². Over half of the workshops - mainly the packaging, order preparation and dispatch areas - require controlled temperatures of between 2 and 4°C.

> **Company:** Etablissements Joseph **Business:** Commercial and industrial cooling/Professional kitchens/Air processing, air conditioning, heating Location: Bourg-en-Bresse (01) - France Date of creation: 1964 Employees: 25

The other half are production areas where the raw materials are mixed, and do not require controlled temperature.

Until now, cold air was produced by a direct expansion R-22 system, with an energy yield close to 30%. In 2011, Giraudet consulted 4 suppliers with regard to the replacement of this installation and two types of solution were put forward: direct expansion R-404A or an indirect chilled water system.

Ets Joseph, a family business located nearby, won the contract with its R-407F/Greenway® RTU -30°C solution, using products distributed by Climalife. "Our customer wanted to centralise and confine refrigerants. The "glycolated water" solution was thus an option, bringing greater added value to the installation and optimising ROI, " says Nicolas Joseph, Technical Manager. We looked for a supplier who could provide a custom-built modular facility, and decided to work with RSystem who designed the system."

Building began in 2013. First, the stainless steel pipe network was fitted in each workshop concerned then, in February, the module was fitted on the platform.

Each piece of RSystem modular equipment, designed to be upgradeable in terms of power, comprises a positive central unit with a floating LP & HP system comprising 4 semi-hermetic compressors with Bizter pistons (2 x 272 kw at -8]C/+42]C) an Alpha Laval multi-tube exchanger to produce chilled water, a Siemens electric regulator. 1 3.000-litre storage tank and 2 Wilo pumps (primary and secondary circuits). The two central units work in automatic mode, regulated by Siemens PLCs, An Artica supervisory control system from RSystem is also used. An electric meter has been fitted in the switch box. And - still from an environmental angle - a heat recovery system using plate exchangers with a calorie meter is

used to recover hot water (45°C/50°C) to clean production tools. The refrigeration system was connected in April, then the pumps were started up and 200 kilos of R-407F were loaded.

The system started up without any issues. In the beginning, the installation ran using closed loop tanks with no distribution, then the first R-22 evaporators were removed and replaced with Luve Contardo brand coolers fed with Greenway[®] through a loop at -8°C at the start and -5°C on the return side. The factory's production line could not be stopped.

The initial feedback based on temperature samples is highly positive. The cost of this project came to €700,000, although €20,000 is set to be paid back under the energysaving certification scheme. "This was a major investment but thanks to the new technologies used, we are guaranteeing our future. I would do it all over again if I had to, " enthuses Patrick Battendier.





COMMERCIAL

Real energy saving benefits makes Performax[™] LT refrigerant of choice

Whilst the use of Performax[™] LT (R-407F), has been well documented as a R-404A replacement in supermarket applications over the last two years. It can work equally well in other R-404A applications such as food storage and food processing applications.

en Norfolk-based JD Cooling imited were tasked with replacing an old R-22 refrigeration system within a storage area at one of the UK's largest potato suppliers in 2011, they consulted with Climalife UK as to which refrigerant to use. Instead of R-404A. they chose Performax[™] LT (R-407F) to help reduce the carbon footprint of the system.

The storage room in guestion contained a floorstanding cooler with a conventional thermostatic expansion valve, fixed speed compressor and fixed speed condenser fans operating with pressure switches set for year-round operation. JD Cooling began the project by creating a new and bespoke design for the equipment within the store, still incorporating a floorstanding cooler but with push-through fans and varying fin spacing, designed with the

intention of reducing the dehumidifying effect caused by direct expansion (DX) refrigeration. In addition to the cooler, the new equipment also included electronic expansion valves to modulate the flow of refrigerant, and variable speed compressor and condenser fans to facilitate a more balanced and energy efficient system. The new system was designed to run using Performax[™] LT (R-407F) as opposed to R-404A which, until then had been the preferred refrigerant for many years for these applications. Although the system was designed to be leak tight The decision to use Performax™ LT was made easy as its GWP was more than half that of R-404A, 1.824 versus 3.922. Performax™ LT was also favoured because it could also offer better energy efficiency than R-404A. JD Cooling have identified the real energy-saving potential of Performax[™] LT in combination with their chosen design improvements the

Specifications of the indirect system with chilled water production

Refrigerating requirements: 320 KW Cold production: Cooling capacity (-8 / 42°C): 2 x 272 KW - Absorbed power: 227 KW Refrigerant: R-407F - Heat transfer fluid: Greenway® RTU -30°C 4 semi-hermetic compressors BITZER 6GE-34Y-40P



2 spiral type condensers Control: LP HP ECO 1 PCL. ABB variable speed drives- 1 per circuit

Double pump for primary and secondary circuit: (WILO) 4 x DL80/150 2 plate exchangers to recover heat (Alpha Laval) Total power recovered 160 kW (40/45°C)

1 general energy meter (SOCOMEC) - 1 calorie meter (heat recovery) - Workstation control and supervision: Artika Optima EG

Evaporators: 9 cubic and 10 ceiling-mounted DF - LUVE CONTARDO JOVENTA - OVENTROP control: V3V+ adjustment system



new plant is showing a reduction in running costs more than 25% lower than the previous equipment and delivering monthly savings in the region of 4,000Kw. As they actively work with suppliers to develop a range of refrigeration components to aid the smooth and efficient running of systems using this product, they hope to achieve better results in the future.

Whilst the outcome of the F Gas revision proposals are not known at the time of writing. the use of R-404A in new equipment with its GWP of 3922 is no longer a sensible choice. JD Cooling Limited have not only delivered a plant that runs more efficiently on Performax™ LT but they have helped their customer ensure their new plant meets the demands of the large retailers who are urging their suppliers to reduce their carbon footprint in an increasingly carbon conscious market.

Hydraulic module:

Measuring equipment - Control:

Selecting a drop-in or a conversion refrigerant? **Good practices to follow...**

Superheat

Refrigerant

choice

Oil

return

Capacity

istorically, the refrigeration market The TEWI takes into account the s not in its first incarnation. Since its creation in 1830, products have been used that are particularly dangerous, difficult to control or inefficient (NH_a, SO_o, CCl₄, H₂O, etc.) with the main objective being the conservation of foodstuffs. The arrival of CFCs, 100 years later, provided safety for the systems and for people. Then successive laws shook up the market and there was a need to find technical solutions that were viable and made up of several elements easily applicable to make systems that were still in perfect condition sustainable. We have therefore seen CFCs replaced by HCFCs, then HCFCs by HFCs and tomorrow it will be HFCs by HFOs.

The choice of converting a thermal system hermetic or open type. or not depends on several criteria. The main objective is to extend the life of the installation while conserving as many as possible or all of the elements that make it up to reduce the economic and environmental impact of the operation, limit investment and guarantee the paying-off of recent installations. The solution should make it possible to obtain thermodynamic performances compatible with requirements. A diagnosis and a feasibility study should therefore be carried out before undertaking a drop-in or a conversion through HFC-based mixtures.

Basic rule: only convert installations that are in good condition and whose operation and performance are satisfactory.

How do I select a replacement halogenated fluid (HFC / HFO)?

Several points will be used to determine the most suitable fluid:

· Environmental aspect: fluorinated greenhouse gas effect fluids with low GWP should be favoured (in case of direct emission to the atmosphere during a leak) and on the other hand, fluids that will produce the lowest global TEWI.

quantity of the CO₂ greenhouse effect gas emitted by the machine during operation throughout its life to produce the energy necessary for application.

• Technical aspects:

compression chillers are selected according to the fluid for the requirements of the application. They are made up of one or more compressors (reciprocating, screw, centrifugal, spiral) of the hermetic, accessible

- The compressor is the most sensitive element of the installation. Depending on the fluid used, it will have different constraints (pressure, volume) and performances (compression, output).

This is why it is essential, on replacing the fluid in an existing installation, to choose a fluid with a volumetric cooling capacity and pressures as similar as possible to the fluid replaced in order to be compatible with the machine in operation.

- The heat exchangers (evaporators, condensers, intermediate heat exchangers) allow energy transfer according to their size.

The replacement fluid should have thermal conductivity, dynamic viscosity, calorific capacity and density as similar as possible to the initial fluid

Efficiency

- Accumulating or separating bottles, , low or medium pressure, will make it necessary for the replacement fluid to have similar pressures (as low as possible), comparable density and not to present any temperature glide higher than 1°K at atmospheric pressure in the case of a partial or total injection installation.



- The regulator, taps and valves: the ideal thing is to be able to keep them. Their compatibility with polyolester oil and HFC should be ensured. Otherwise, they will have to be changed.

- The dehumidifier: useful for removing any humidity and impurities that may be present in the circuit, it should be compatible for use with the selected fluid and oil.

- The liquid and steam pipes: the volume flow (R-407F). rates necessary to obtain the required cooling capacity should be as close as possible to the original one. Otherwise, load losses will vary and

- The refrigeration oil is an essential element In the case where this oil is in contact with the in any proportion.

To guarantee good lubrication, the fluid should have low heat compression (adiabatic compression coefficient close to 1) and should not vary the viscosity of the oil outside the areas that ensure correct lubrication.

Finally, it is essential to choose non-flammable, non-explosive and non-toxic fluids for overall safety reasons.

• Thermodynamic aspect:

The fluid should have: - Volumetric cooling capacity, pressure, viscosity and thermal conductivity as similar as possible to the fluid to be replaced

- Overheating on the lowest possible compression to guarantee correct lubrication. Its critical temperature should be as high as possible.

Once these fundamental rules have been respected, Drop-in or conversion?

What is a drop-in? A Drop-in consists of recovering and replacing the refrigerant in service with another refrigerant selected and adapted to operate in the existing machine with the original oil. No other modification of the installation will be necessary.

Examples of possible drop-ins:

- CFC R-12 replaced by R-409A - CFC R-502 replaced by R-408A

the pipes may need to be changed.

of the mechanical operation of the compressor. refrigerant, it should be compatible and miscible

What is a conversion? types of conversion.

Simple conversion: fluid and oil change only. All the existing equipment is conserved. Example: HCF R-22 replaced by HFC R-427A, or by Performax[™] LT.





- HFC R-134a that could be replaced by HFO 1234yf in automobile air conditioning systems. - HFC R-404A replaced by Performax[™] LT



Conversion or Retrofit: these are two different names for the same operation. There are 2 size.

Complex conversion: change of fluid, oil, circuit sealing elements and possibly part of the equipment.



In any case, it is essential, after changing the refrigerant, to operate at the settings, verification of operation, inspection for leaks and labelling required by the regulations. An installation that has suffered material damage such as mechanical or pyrogenic breakage of the compressor may only be converted after cleaning of the system with a solvent such as Nettogaz GC1 or Facilisolv depending on its

In the face of these successive changes, solutions exist and allow you to maintain your installations in good condition despite the prohibitions against the fluid that they had been using. These new solutions reconcile both environmental and economic restrictions and also guarantee food safety (conservation of foodstuffs, medical applications, etc.) and strategic safety (aerospace, electronics, defence, etc.).

To help you choose a refrigerant, the Climalife team and our technical department will support you in the search for solutions suited to your projects (design of thermodynamic tools, modelling, organisation of technical meetings, etc.).

CLIMALIFE INNOVATES AND LAUNCHES ITS RANGE OF **REFRIGERATION LUBRICANTS:** HQ POE

With our experience in refirigerants since 1874, Climalife has also acquired expertise in oils for refrigeration compressors. Convinced about the importance of quality in the choice of lubricant for a refrigeration system, Climalife has launched its range of lubricants, HQ POE, to meet the everyday needs of its customers.

HQ-POE

Quality

The High Quality HQ POE range is made up of synthetic polyolester lubricants formulated for refrigeration compressors operating with hydrofluorocarbon refrigerants (HFC, HFO) used in refrigeration and air conditioning. The properties of HQ POE provide effective protection against wear and tear of moving parts and allow them to be used in a wide range of operating temperatures.

To choose the appropriate ISO grade for the system, the recommendations of the compressor manufacturer must be followed.

HQ-POE

at

Availability

HQ-POE22

The availability and quality of a lubricant are essential. HQ POE oils are available in 3 packaging sizes: 1 L. 5 L and 20 L and will be distributed by Climalife subsidiaries and representatives worldwide.

Climalife also offers you solutions and services to support you in your maintenance operations. DPH analyses performed in a laboratory give an accurate diagnosis of the state of the oil in the installation, the Unipro Acitest allows you to instantly check in situ the acidity of the oil in use irrespective of its nature (POE, PAO, MIN, AB).

Nettogaz GC1: the ideal solvent for removing impurities from a refrigeration system

Nettogaz GC1 is a mixture that does not affect the ozone layer, intended for internal cleaning of small volume refrigeration and air conditioning systems (for industrial volumes use Facilisoly).

Developed by Climalife, it provides the solution for removing the impurities present in the system, whether it is a case of water, debris of mechanical origin, welds or solid calamine or oxide type dirt that could lead to incorrect operation of the installation.

Many types of dirt can be found. Among the most common are: • «Pyrogenic process» of the motor in the accessible thermal or

- hermetic units
- Presence of water in the circuit
- Deterioration of the lubricant
- Formation of acids
- · Formation of oxides from welds and solder.

Nettogaz GC1 will be most often used:

- Before re-using an element of a refrigeration system in another system
- After a breakdown that led to contamination of the circuit
- Before start-up of an new installation if the circuit has been polluted

- Before a retrofit

- Nettogaz GC1 has very good solvent power. Its Kauri Butanol index is higher than 60. Its boiling point of 20°C makes it easy to extract from the circuit by using for anhydrous nitrogen and vacuum pumping.

Its properties, which are similar to those of HCFC R-141b which was used before the prohibi-

tion of ODP products, allow an implementation that is similar, simple and effective



HI

Dates for your diary!

Energies Froid Trade Fair



A new cycle of regional **Energies Froid** trade fairs dedicated to thermodynamics will begin in autumn 2013. Your Climalife sales representative will meet vou in

- Lyon, on 2 & 3 October 2013 - Bordeaux, on 27 & 28 November 2013.

Pre-register and obtain your free badge at:

AFCE Conference

Each year, the Alliance Froid Climatisation Environnement informs you about the latest regulatory and technological developments associated with refrigerants. Make a date for 3 October 2013 in your diary.

on the political, regulatory, economic, technical and environmental issues related to REFRIGE-RATION will welcome you this year on 23 and 24 October 2013 at the Grande Halle de la Villette, Paris



Cold Chain Forum is an information and discussion platform which gives an overall view of the market with its 50 conferences and its Espace Expert.

Climalife will be involved in these discussions and will present its technological innovations and its solutions for energy efficiency, safety, performance and cost control through stand A08.

Interclima

From 4 to 8 November 2013, the 3 leading construction trade fairs, BATIMAT, INTERCLIMA+ELEC and IDEO BAIN are to be

Climalife Contact is published by Climalife, a Dehon • The subsidiaries: • France: dehon service SA (Managroup company 26, av. du Petit Parc - F-94683 Vincennes Cedex

Tel: + 33 1 43 98 75 00 - Fax: + 33 1 43 98 21 51

• Publishing supervisor: Pierre-Etienne Dehon • Editor: Delphine Martin / E-mail :climalife.fr@climalife.dehon.com • Associate Editors: Laura Haim, Laurent Guégan, Pierre-Emmanuel Danet, Martiin Minderhoud, Héloïse Lesage, Louise Belfiore

· Design, production: www.alternactif.com

held at Paris Nord Villepinte. Climalife will be exhibiting in Hall 2 Stand L 109 in the dedicated air conditioning / ventilation / refrigeration space. This is a unique opportunity to discover our offer of products and services which allow optimisation of the thermal system processes for commercial and industrial refrigeration, as well as for the residential and tertiary sectors.

interclima +elec

DKF is organising an informative meeting in Meerbusch on 11 tember 2013. On the programme are the main areas of the planned revision of F- Gas, solutions for replacing R-404A, 4th generation refrigerants (HFO), the new secondary refrigerants / heat transfer fluids for refrigeration, heating and EnR installations and Cooltool Diagnostics.

Register at climalife.de@climalife.dehon.com

Suisse Frio

SUISSE FRIO

forum will take place on 21 trade fair at the BERNEXPO site in Berne in halls 3.0/2.0.

24 Y-Symposium on refrigeration

On Tuesdav 3 D the Symposium on refrigeration will be held in Yverdon-les-Bains, organised by the ASF (Swiss Refrigeration Association, French-speaking section). This event will allow the main players in the refrigeration market in French-speaking Switzerland to meet, exchange ideas and discover the latest technological developments



mement and Services) - climalife.fr@climalife.dehon.com Belgium/Luxembourg: dehon service belgium climalife.be@climalife.dehon.com • Netherlands: dehon

- Hungary: Climalife kft climalife.hu@climalife.dehon.com

- ch@climalife.dehon.com Italy: climalife climalife.it@



To find out more visit: http://www.afce.asso.fr

Cold Chain Forum

The first interdisciplinary conference and trade fair



The two-day Swiss refrigeration exhibition and as part of the Maison Bois Energie 2013

From 13 the Hungarian refrigeration and air conditioning association will organise its annual conference at the Thermal Hotel in Harkany. Climalife will again be attending with a stand and will take part in the technical presentations.

Climatechno

Climatechno is the professional biannual trade fair in the HVAC & R industry and it will take place on 1 in Leuven - Haasrode. The entire Climalife team will welcome you at Stand 77 B. Come and discover Performax[™] LT, the solution for replacing R-404A and R-22 and also the 4th generation refrigerants: HFOs.

Climalife technical meeting

Come and visit us at the technical meeting that we are organising on 4 r at the DUBO Business Centre in Zaltbommel. We will present the latest developments in the market and will try to prepare you for the forthcoming changes. For further information, please contact your Climalife representative. Welcome.

Installatie Vakbeurs Hardenberg

The 14th edition of Installatie Vakbeurs Hardenberg will be held on . A trade fair dedicated to refrigeration, air conditioning and ventilation, it takes place in an interactive atmosphere, conducive to business and collection of information, where you will make new contacts and find the inspiration for new ideas. See you soon in Hardenberg



The Climalife Galco will welcome you at the I'AHR EXPO in New York from N° 2042 at the Javits Convention Centre

service nederland - climalife.nl@climalife.dehon.com Germany: dkf - climalife.de@climalife.dehon.com Spain: friogas - climalife.es@climalife.dehon.com • United Kingdom: IDS Refrigeration Ltd - climalife.uk@ climalife.dehon.com • Switzerland: prochimac - climalife.

climalife.dehon.com • Scandinavia: dehon nordic service climalife.se@climalife.dehon.com • Russia: Teknalvs climalife.ru@climalife.dehon.com • Export: galco - climalife galco@climalife.dehon.com

• Photos: Climalife, Shutterstock nº 119148163, n° 77325445, n° 119148163, n° 62869486, iStock n° 11500240

Any partial or total reproduction of an article must bear the wording: "source: Climalife Contact" ISSN 1263-5545.

HFO: the fourth generation of refrigerants



Invest today, improve tomorrow

- 1 Reduced environmental impact: (low GWP)
- 2 Safety of environment and people
- 3 Excellent energy efficiency of systems
- 4 Approuved by equipment manufacturers

Honeywell climalife