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**climalife®**

Refrigeration | Air conditioning | Heating | Renewable Energy



## Dehon Group solutions to give you the lead

The Dehon Group, a key player in performance chemistry, is organised around three types of activity:

**climalife®**

**SMB AUTO**

**INVENTEC**  
PERFORMANCE CHEMICALS

**crealis**  
SOLUTIONS FOR THE FUTURE

• Refrigeration, air-conditioning and heating - **Climalife**,

• Automotive after-market - **SMB Auto**,

• High-tech - **Inventec**.

**With:**

Crealis, the industrial division for production and logistics for all Group activities.

*In a continuous drive for improvement, Climalife retains the right to modify at all times the list of referenced products and to make alterations to any information in this document without warning. Moreover, the information contained in this catalogue is the result of our studies and our experience. It is provided in good faith, but should not, under any circumstances, be taken to constitute a guarantee on our part or an assumption of our responsibility. This is particularly the case when third party rights are at stake or in situations where a user of one of our products fails to observe applicable regulations. Lastly, the list of products in the catalogue is not exhaustive and we cannot guarantee on-shelf availability of all the referenced products. Non-contractual photo.*

## Developing innovative, sustainable solutions for climate control systems

For more than a century, Climalife has been Europe's specialist in cooling fluids for refrigeration and air conditioning.

Its dynamism and commitment to quality and protecting the environment has also enabled it to gain cutting-edge expertise in the heating and renewable energy markets.

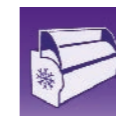
More than 250 employees are available to share their knowledge on diverse sectors such as: industrial markets, commercial markets (large outlets, local stores, etc.), housing and apartments, and the service sector (offices, hospitals, airports etc.).

They can meet your needs with a range of products and services suitable for any climate control system: refrigerants, secondary refrigerants/heat transfer fluids, lubricants, equipment, cleaning, brazing alloys, analysis and services.

Climalife benefits from the structure of the Dehon Group, a key player in performance chemistry, developing innovative solutions and building special partnerships with professionals, particularly producers, manufacturers, industrial firms and distributors.

Innovative services developed for safety and the environment, regular technical and regulatory information, and high-performance tools complete this comprehensive plan.

Climalife offer their products and services worldwide, thanks to a global distribution network made up of 15 subsidiaries (Germany, Belgium, Netherlands, France, United Kingdom, Spain, Hungary, Romania, Switzerland, Scandinavia, Italy, Russia, China and Panama), and local representatives (India, Singapore and Malaysia) and an export subsidiary, Galco-Climalife, for the rest of the world.



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# Refrigerants

For refrigeration and air conditioning applications

## REFRIGERANTS

### ANTICIPATE AND MOVE to low GWP refrigerants; it is the best strategy



Refrigeration systems containing greenhouse gases are subject to European regulation N° 517/2014, also known as F-Gas II.

It is essential to inform equipment owners of the requirements of the regulation and recommend sustainable solutions for new or existing installations, where there are bans. The HFO based refrigerants have the advantage of reducing the impact on the environment and improve energy efficiency.



### Advantages of working with Climalife:

- Access to all the refrigerants with low GWP (HFO, HC, CO<sub>2</sub>, NH<sub>3</sub>).
- Technical support and thermodynamic modeling.
- Usage of refrigerants in innovative and tailored packages.

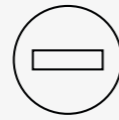


More info on: [climalife.dehon.com/refrigerants](http://climalife.dehon.com/refrigerants)

## Climalife: a global range of solutions with low GWP

Actual refrigerant	Replacement refrigerant	Systems	Applications / Recommendations
R-404A	R-407F (Performax® LT) GWP = 1825 / A1	Retrofit or new	Commercial & industrial refrigeration - Medium and low temperature.
	R-448A (Solstice® N40) GWP = 1387 / A1	Retrofit or new	Commercial & industrial refrigeration - Medium and low temperature.
	R-449A (Opteon™ XP40) GWP = 1397 / A1		
	R-455A (Solstice® L40X) GWP = 148 / A2L	New	Condensing unit Self contained: low temperature Hermetically sealed equipment, low temperature.
	R-290 (Propane) GWP = 3 / A3	New	Self contained (Charge size limited) and industrial refrigeration - Highly flammable.
	R-744 (CO <sub>2</sub> ) GWP = 1 / A1	New	Commercial & industrial refrigeration - High pressure.
R-134a	R-717 (Ammonia) GWP = 0 / B2L	New	Industrial Refrigeration - Mildly flammable and toxic.
	R-452A GWP = 2140 / A1	Retrofit or new	Transport Refrigeration
	R-450A (Solstice® N13) GWP = 605 / A1	Retrofit or new	Medium temperature industrial and commercial refrigeration.
R-513A (Opteon™ XP10) GWP = 631 / A1			
R-410A	R-1234ze (Solstice® ze) GWP = 7 / A2L	New	Medium temperature industrial and commercial refrigeration.
	R-1234yf (Solstice® yf) GWP = 4 / A2L	New	Auto A/C Vending machines.
R-410A	R-32 GWP = 675 / A2L	New	Air conditioning.
	R-455A (Solstice® L40X) GWP = 148 / A2L	New	Air conditioning - Heat Pump.
	R-1234ze (Solstice® ze) GWP = 7 / A2L	New	Heat Pump - Chiller.

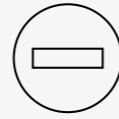
**Note:**  
 - Refrigerants with a GWP > 2500 will be banned from 01/01/2020 in new stationary refrigeration systems.  
 - In industrial refrigeration no limit to use a refrigerant with GWP below 2500 in new and existing systems.  
 - In commercial refrigeration no limit to use a refrigerant with GWP below 2500 in new and existing systems except for refrigerators and freezers that are hermetically sealed and multipack centralised refrigeration systems > 40 kW in new systems from 01/01/2022.



### SERVICE AND MAINTENANCE BAN

(Except for Military use)  
 • Ban for Stationary refrigeration equipment with virgin HFCs where GWP ≥ 2500 and charge is 40 tonnes CO<sub>2</sub> equivalent or more. Exemption for system where cooling below -50°C.

01/01/2020



### PLACING ON THE MARKET BANS OF PRODUCTS OR NEW EQUIPMENT

(Except military equipment and systems where cooling below -50°C)  
 • Domestic refrigerators & freezers if GWP > 150  
 • Refrigerators & freezers for commercial use if GWP > 2500  
 • Stationary refrigeration equipment (except ecodesign and systems < -50°C) if GWP > 2500  
 • Movable room air-conditioning equipment if GWP > 150 (hermetically sealed equipment which is movable between rooms by the end user)

01/01/2015

01/01/2020

01/01/2022

01/01/2025

• Refrigerators and freezers hermetically sealed for commercial use if GWP > 150  
 • Multipack centralised refrigeration systems for commercial use > 40 kW if GWP > 150 except in the primary refrigerant circuit of cascade systems if GWP > 1500

• Single split air-conditioning systems < 3 kg if GWP > 750

### PROGRESSIVE REDUCTION IN QUOTAS: impact on product availability

2015 = 182 Million CO<sub>2</sub> TEq

7% reduction in 2016

32% reduction at the end of 2017

2018 = 115 Million CO<sub>2</sub> TEq

LIMITING the availability of products with high GWP (eg R-404A) by 2018!



GWP = Global Warming Potential.

## F-Gas Solutions, The FREE mobile App for everyone!

- With F-Gas Solutions, identify:
- the GWP of refrigerant used,
  - the leak detection frequency,
  - the CO<sub>2</sub> T. Eq. charge,
  - the dates of bans per application & equipment,
  - the solutions with low GWP approved by F-Gas.

### F-Gas Solutions adds new functions!



+18 000 users



Gives direct access to the thermodynamic properties of refrigerants





# Refrigerants

For refrigeration and air conditioning applications

Products	Packaging	Charge (kg)	GWP	Comments
<b>HFCs (HydroFluoroCarbons)</b>				
R-134a	Cylinder 12 L	12		
R-134a	Friostar®	20	↑	
R-134a	Cylinder 60 L	60	1430	
R-134a	Drum 448 L	460	↓	Vertical container.
R-134a	Drum 900 L	935		
R-227ea	Cubikool™	14	↑	
R-227ea	Cylinder 27 L	31	3220	
R-227ea	Cylinder 60 L	62	↓	
R-236fa	Cylinder 12 L	10	9810	
R-236fa	Cylinder 60 L	72		
R-245fa	Cylinder 60 L	50	1030	
R-32	Cylinder 12 L	9	675	Mildly flammable refrigerant (A2L) with low GWP.
R-404A	Cylinder 12 L	9		
R-404A	Friostar®	15	↑	
R-404A	Frioplus®	18	3922	
R-404A	Cylinder 60 L	49	↓	
R-404A	Drum 448 L	350		Vertical container.
R-404A	Drum 900 L	725		
R-407A	Cylinder 12 L	11.5	2107	
R-407A	Cylinder 60 L	55		
R-407C	Cylinder 12 L	11.5		
R-407C	Frioplus®	18	↑	
R-407C	Cylinder 60 L	56	1774	
R-407C	Drum 448 L	400	↓	Vertical container.
R-407C	Drum 900 L	840		
R-407F (Performax® LT)	Cylinder 12 L	11		
R-407F (Performax® LT)	Frioplus®	20	↑	
R-407F (Performax® LT)	Cylinder 60 L	55	1825	
R-407F (Performax® LT)	Drum 448 L	410	↓	Vertical container.
R-407F (Performax® LT)	Drum 900 L	825		
R-410A	Cylinder 12 L	10		
R-410A	Frioplus®	17	↑	
R-410A	Cylinder 60 L	50	2088	
R-410A	Drum 900 L	738	↓	
R-417A (Freon™ MO59)	Cylinder 12 L	11.5	2346	
R-417A (Freon™ MO59)	Cylinder 60 L	56		
R-422A (Freon™ MO79)	Cylinder 12 L	10.5	3143	
R-422A (Freon™ MO79)	Cylinder 60 L	53		
R-422D (Freon™ MO29)	Cylinder 12 L	11	2729	
R-422D (Freon™ MO29)	Cylinder 60 L	54		
R-423A (Freon™ 39TC)	Cylinder 60 L	58	2280	
R-427A	Cubikool™	11	↑	
R-427A	Cylinder 52 L	48	2138	
R-427A	Drum 448 L	430	↓	Vertical container.
R-427A	Drum 930 L	850		
R-437A (Freon™ MO49 Plus)	Cylinder 12 L	12	1805	
R-437A (Freon™ MO49 Plus)	Cylinder 60 L	58		

Note: Freon is the trademark of Chemours to replace ISCEON.

## Info



### Regulation

■ **HFC (HydroFluoroCarbons)**  
Refrigerant fluids that are either placed on the market, used, recovered or destroyed are all controlled by the EU F-Gas Regulation N° 517/2014, also known as F-Gas II. These belong to the Greenhouse gas family. F-Gas will apply a phase-down of HFCs from now until 2030. Refrigerants with a GWP > 2500 will be banned from use in many applications by 2020.



More info on:  
[climalife.dehon.com/refrigerants](http://climalife.dehon.com/refrigerants)



## Info

### ■ HFC / HFO

HFC / HFO blends are next generation refrigerants with a low GWP to replace HFC or HCFC refrigerants in compliance with F-Gas regulation. These refrigerants have good advantages: easy to implement, less impact on the environment and better energy efficiency.

### ■ HFOs (HydroFluoro-Olefins)

Are 4<sup>th</sup> generation refrigerants. They are alternatives with low GWP values that reduce environmental impact while offering energy efficiency.

### ■ Ammonia

NH<sub>3</sub> is a B2L (toxic and mildly flammable) refrigerant fluid. Its transport and use in installations are governed by regulations and security standards. The product supplied is a high quality one: qualifying HP 100. Purity: ≥ 99.99% weight, water content: ≤ 100 ppm weight.

### ■ CO<sub>2</sub>

R-744 (carbon dioxide) Requires the use of high pressure cylinders and specific equipment.



More info on:  
[climalife.dehon.com/refrigerants](http://climalife.dehon.com/refrigerants)



Products	Packaging	Charge (kg)	GWP	Comments
R-438A (Freon™ MO99)	Cylinder 12 L	11.5	↑	
R-438A (Freon™ MO99)	Frioplus®	20	2265	
R-438A (Freon™ MO99)	Cylinder 60 L	57	↓	
R-507A	Cylinder 12 L	9.5	↑	
R-507A	Cylinder 60 L	49	3985	
R-507A	Drum 900 L	720	↓	
• <b>Low temperature application</b>				
R-508B	Cylinder 1.34 L	1	13396	
R-508B	Cylinder 13.4 L	12		
R-23	Cylinder 13.4 L	12	14800	
R-23	Cylinder 50 L	47		
• <b>Standard refrigerant cylinder</b>				
Standard refrigerant cylinder				Combination of calibrated refrigerants. Compliance certificate.
<b>HFC / HFO blends</b>				
R-448A (Solstice® N40)	Cylinder 12 L	10	↑	
R-448A (Solstice® N40)	Cylinder 60 L	53	1387	Non flammable refrigerant (A1) - To replace R-404A / R-507 / R-22.
R-448A (Solstice® N40)	Drum 900 L	825	↓	
R-449A (Opteon™ XP40)	Cylinder 12 L	10	↑	
R-449A (Opteon™ XP40)	Frioplus®	19	1397	Non flammable refrigerant (A1) - To replace R-404A / R-507A / R-22.
R-449A (Opteon™ XP40)	Cylinder 60 L	53	↓	
R-449A (Opteon™ XP40)	Drum 900 L	815		
R-450A (Solstice® N13)	Cylinder 12 L	12	↑	
R-450A (Solstice® N13)	Cylinder 60 L	60	605	Non flammable refrigerant (A1) - To replace R-134a.
R-450A (Solstice® N13)	Drum 930 L	945	↓	
R-452A (Opteon™ XP44)	Cylinder 12 L	10	↑	
R-452A (Opteon™ XP44)	Cylinder 60 L	53	2140	Non flammable refrigerant (A1) -To replace R-404A in transport refrigeration.
R-452A (Opteon™ XP44)	Drum 900 L	790	↓	
R-455A (Solstice® L40X)	Cylinder 12 L	9	↑	
R-455A (Solstice® L40X)	Cylinder 60 L	49	148	Mildly flammable (A2L) - Alternative R-404A - Consult us.
R-513A (Opteon™ XP10)	Cylinder 12 L	12	↑	
R-513A (Opteon™ XP10)	Frioplus®	21	631	Non flammable refrigerant (A1) - To replace R-134a.
R-513A (Opteon™ XP10)	Cylinder 60 L	57	↓	
R-513A (Opteon™ XP10)	Drum 900 L	840		
<b>HFOs (HydroFluoro-Olefins)</b>				
R-1233zd (Solstice® zd)	Cubikool™	13	↑	
R-1233zd (Solstice® zd)	Cylinder 60 L	59	4.5	Non flammable refrigerant (A1) - To replace R-245fa / R-123.
R-1233zd (Solstice® zd)	Drum 930 L	1000	↓	
R-1234ze (Solstice® ze)	Cylinder 12 L	12	↑	
R-1234ze (Solstice® ze)	Friostar®	19	7	Mildly flammable (A2L) - Alternative to R-134a.
R-1234ze (Solstice® ze)	Cylinder 60 L	58	↓	
R-1234ze (Solstice® ze)	Drum 930 L	890		
R-1234yf (Solstice® yf)	Cylinder 12.5 L	5 or 11	4	Mildly flammable (A2L) - Automotive A/C specific.
<b>Ammonia</b>				
Ammonia	Cylinder	56	0	With dip tube.
Ammonia	Drum 900 L	530		
<b>CO<sub>2</sub></b>				
R-744	Mooviz®	10	↑	
R-744	Cylinder B50	38	1	
R-744	Racks of 9 cylinders B50	342	↓	



# Refrigerants

For refrigeration and air conditioning applications

Products	Packaging	Charge (kg)	GWP	Comments
<b>Hydrocarbons</b>				
Propane and iso-butane are hydrocarbons with very high purity for refrigeration applications and are extremely flammable (A3 group for refrigeration applications). Refer to current regulations for using them. Note that the cylinders have valves with left hand thread.				
Propane R-290	1 Litre bottle	390 g	3	Valve 1/4 SAE.
Propane R-290	Cylinder 27 L	10 kg		
Isobutane R-600a	Aerosol*	420 g	3	
Isobutane R-600a	Cylinder 27 L	12 kg		

\*To be used with prestovalve.

Packaging	Packaging material	Test pressure (bar)	Cpt (L)	Tare (kg)	Diam (mm)	Height (mm)	Valve outlet	Valve material	Num per pallet
<b>Packaging characteristics</b>									
Cubikool™	Lightened steel + Polypropylene	42	12.5	6	310 x 310	400	Male 21.8 x 1.814 on right	Brass	24
Frioplus®	Lightened steel + Polypropylene	42	22	8.5	305	543	Male 21.8 x 1.814 on right	Brass	16
Friostar®	Aluminium	36	20	7	300	530	Male 21.8 x 1.814 on right	Brass	16
Friostar®	Aluminium	48	20	7.3	300	530	Male 21.8 x 1.814 on right	Brass	16
Cylinder 12 L	Steel	36	12.3	8	220	510	Male 21.8 x 1.814 on right	Brass	20 or 40
Cylinder 12 L	Steel	42	12.3	7.6	229	505	Male 21.8 x 1.814 on right or left*	Brass	20 or 40
Xlite 26 L	Steel	42	26.2	9.3	303	600	Male 21.8 x 1.814 on right	Brass	11, 12 or 16
Cylinder 27 L	Steel	33	27	14.5	300	625	Male 21.8 x 1.814 on right	Brass	11, 12 or 16
Cylinder 27 L	Steel	45	27	16	300	631	Male 21.8 x 1.814 on right	Brass	
Cylinder 27 L	Steel	46.5	27	16	300	606	Male 21.8 x 1.814 on right	Brass	
Cylinder 60 L	Steel	36	60	28	320	990	Male 21.8 x 1.814 on right	Brass	9
Cylinder 60 L	Steel	42	60	29	300	1140	Male 21.8 x 1.814 on right	Brass	9
Cylinder 88 L	Steel	33	88	38	300	1525	Male 21.8 x 1.814 on right	Brass	12
Cylinder 88 L	Steel	46.5	88	40	300	1525	Male 21.8 x 1.814 on right	Brass	
Cylinder NH <sub>3</sub>	Steel	46.5	88	40	300	1525	Male 21.7 x 1.814 on right	Steel	12
Drum 448 L	Steel	42	448	450	800	1565	Male 26.1 x 1.814 on right	Brass	
Drum 900 L	Steel	36	900	440	780	2180	Male 5/8" x 1.814 on right	Brass	
Drum 930 L	Steel	42	930	470	800	2330	Male 26.1 x 1.814 on right	Brass	
Drum 930 L	Steel	48	930	590	800	2330	Male 26.1 x 1.814 on right	Brass	

Non-contractual information.  
\*Flammable refrigerant.



## Info



### Regulation

**Non-flammable refrigerant fluid recovery CFC / HCFC / HFC / HFO**  
In Europe, it is compulsory to recover CFCs, HCFCs, HFCs and HFOs from installations of any weight under European regulation 517-2014 or 1005-2009. These must be returned with appropriate waste documentation as required in each country.

**Packaging designed for ammonia recovery**  
The French decree of 16 July 1997 concerning refrigeration plants using ammonia as a refrigerant, banned venting to the atmosphere.



More info on:  
[climalife.dehon.com/refrigerants](http://climalife.dehon.com/refrigerants)



Products	Packaging	Pressure	Comments
<b>Packaging designed for NON FLAMMABLE halogenated refrigerants</b>			
Recovery cylinder	12 L	42 bars	For all low or middle pressure halogenated refrigerants.
Recovery cylinder	12 L	33 bars	For R-22.
Recovery cylinder	60 L	42 bars	For all low or middle pressure halogenated refrigerants.
Recovery cylinder	60 L	36 bars	For R-22.
Recovery cylinder	13.4 L	200 bars	For high pressure refrigerants: R-13, R-23, R-503.
Recovery drum	900 L	36 bars	

### Packaging designed for NON FLAMMABLE temporary storage.

Temporary storage cylinder for refrigerants. Our temporary storage (Receiver) cylinders are cleaned and vacuumed to avoid refrigerant contamination. Thus, the refrigerant will be recharged into the installation without any contamination problems.

Temporary storage cylinder	12 L	42 bars	
Temporary storage cylinder Xlite	26 L	42 bars	For temporarily evacuating a system before reintroducing fluids.
Temporary storage cylinder	60 L	42 bars	
Temporary storage drum	900 L	36 bars	

### Packaging designed for ammonia recovery

Ammonia recovery / transfer cylinder	88 L		Without dip tube.
Ammonia recovery / transfer container	930 L		

### Flammable refrigerant fluid recovery Hydrocarbons / HFC / HFO

Recovery cylinder	12 L	42 bars	
Recovery cylinder	27 L	42 bars	For hydrocarbons R-290, R-600a and HFO Solstice™ yf.
Recovery cylinder	88 L	42 bars	
Recovery cylinder R-32	12 L	48 bars	For R-32.

Contact us for containers.

### Regeneration of HFCs

Reclamation of recovered refrigerants: We deal with recovered fluids on request (for quantities over 300 kg) so as to offer performance characteristics equivalent to those of a pure substance. After recovery, the fluid is reconditioned and made available for the customer or stored on our industrial sites (storage contract). Offer subject to conditions. Reclaiming recovered HFCs is possible based on the results of the composition analysis carried out when the client's sample is received. (Sampling cylinders see p.26).



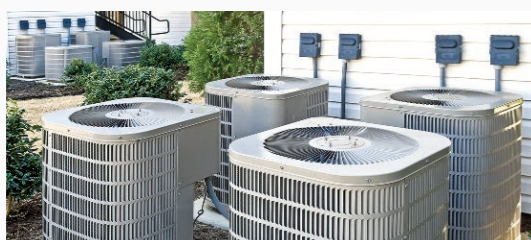


# Heat transfer fluids

Fluids for energy transfer

## HEAT TRANSFER FLUIDS

### SELECTING THE BEST HEAT TRANSFER FLUID FOR YOUR system to achieve optimum performance



Several criteria dictate the choice of a heat transfer fluid: thermophysical properties (e.g. freezing point, viscosity, thermal conductivity and density), technical characteristics (e.g. chemical stability, corrosion resistance, performance at high temperatures, and compatibility with other materials used in your system), safety (e.g. flammability and toxicity), environmental impact (e.g. biodegradability, emissions, and whether or not the fluid is of plant origin), cost.

### Advantages of Climalife products:

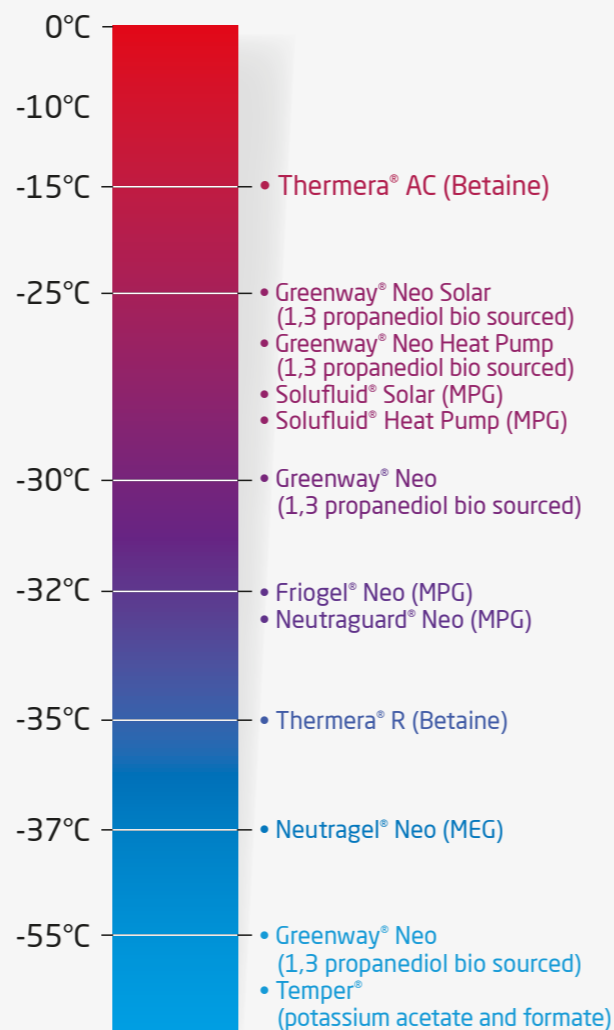
- Technical assistance, drawing on our expertise as producers of heat transfer fluids.
- Extensive choice of fluids, formulated with MEG, MPG, potassium acetate, potassium formate, betaine, or 1,3-propanediol of organic origin.
- Wide range of operating temperatures: from -55°C to 200 °C.
- Heat transfer fluids for each application, including refrigeration, AC, heating and heat pumps.



More info on:

[climalife.dehon.com/heat-transfer-fluids](http://climalife.dehon.com/heat-transfer-fluids)

### CLIMALIFE HEAT TRANSFER FLUIDS



#### Freezing point\*

\*The freezing points are given for a 50% dilution where the coolant is sold for dilution.

MEG = Monoethylene glycol  
MPG = Monopropylene glycol

## Follow the Greenway® Neo



#### Greenway® Neo heat transfer fluids are:

- in line with your environmental commitments.
- made primarily of organically sourced, biodegradable<sup>(1)</sup> 1,3-propanediol, a renewable of plant origin.
- recognised by the French Health Directorate and Belgaqua as safe for use<sup>(2)</sup>
- registered with the NSF (HT2)
- free of borax, which is classified as toxic by REACH regulations
- bacteriostatic, preventing the growth of bacteria in your system<sup>(3)</sup>.



More info on:

[climalife.dehon.com/secondary-refrigerant-fluids](http://climalife.dehon.com/secondary-refrigerant-fluids)



#### Refrigeration and air conditioning applications

##### ⊕ More durable systems

- Greenway® Neo has a very low viscosity in comparison with MPG, especially at very low temperatures. This allows the design of a system with smaller pumps and thinner pipework, cutting costs.

##### ⊕ Operational savings

- Greenway® Neo reduces pressure loss by up to 30 % in comparison with MPG, especially at low temperatures, and this saves you money during the life of your system.

##### ⊕ Optimal performance

- For the same amount of energy transferred, the volumetric flow rate of Greenway® Neo is lower than MEG or MPG-based heat transfer fluids. This may allow for thinner pipework and lower pumping speeds.



#### Heating and hot water applications

##### ⊕ More durable systems

- Greenway® Neo Solar is stable at high temperatures, protecting your system from the effects of overheating:
  - Ideal fluid for evacuated solar tube collectors.
  - Less deposits in filled systems not yet in use.
  - Smart choice for very large systems subject to high temperature spikes.

##### ⊕ Less damage from residues

- Greenway® Neo Solar lasts longer, limiting residues that stick to solar panels and clog pumps.

##### ⊕ Lower impact on soil in case of leakage

- The biodegradability of Greenway® Neo Heat Pump makes it perfect for geothermal systems<sup>(4)</sup>.

<sup>(1)</sup> OECD 302B - primary inherent biodegradability, from 90 % to 100 % in 28 days, tested and approved by SGS.

<sup>(2)</sup> Authorised by French Health Directorate for use in single-exchange heat treatment of water for human consumption, and recognised by Belgaqua, the Belgian water sector federation, as a NBN-EN 1717 Category 3 fluid.

<sup>(3)</sup> As defined by ISO 11930.

<sup>(4)</sup> Do not release waste heat transfer fluids into the environment. Local regulations apply for their disposal.



# Heat transfer fluids

Fluids for energy transfer

HTF for refrigeration and Air Conditioning



Products	Freezing point	% Concentration vol.	Packaging
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## Friogel® Neo (MPG)

Monopropylene glycol based product which contains long life organic corrosion inhibitors. Formulation approved by the French General Health Department as a heat transfer fluid for single exchange sanitary water production systems. Working temperature range: -28°C to +150°C.

### • Concentrated MPG

Friogel® Neo	To be diluted.		Can 20 l, drum 210 l, container 1000 kg, bulk 10 t and 20 t.
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### • Ready-to-use MPG

Friogel® Neo -20	-20°C	38%	Drum 210 l, container 1000 kg, bulk 10 t and 20 t.
Friogel® Neo -13	-13°C	30%	
Friogel® Neo -18	-18°C	36%	
Friogel® Neo -23	-23°C	42%	
Friogel® Neo -29	-29°C	47%	
Friogel® Neo -34	-34°C	52%	

## Neutragel® Neo (MEG)

Monoethylene glycol based product with long life organic corrosion inhibitors for low temperature industrial refrigeration installations (with embittering agent). Working temperature range: -33°C to +180°C.

### • Concentrated MEG

Neutragel® Neo	To be diluted.		Can 20 l, drum 210 l, container 1000 kg, bulk 10 t and 20 t.
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### • Ready-to-use MEG

Neutragel® Neo -20	-20°C	35%	Drum 210 l, container 1000 kg, bulk 10 t and 20 t.
Neutragel® Neo -13	-13°C	26%	
Neutragel® Neo -16	-16°C	30%	
Neutragel® Neo -27	-27°C	42%	
Neutragel® Neo -32	-32°C	47%	
Neutragel® Neo -39	-39°C	52%	

## Greenway® Neo (1,3 propane-diol biosourced)

1,3 propanediol based bio sourced for refrigeration circuits. Greenway® Neo has a much lower viscosity compared to an MPG. Formulation approved by the French General Health Department as a heat transfer fluid for single exchange sanitary water production systems. It contains long life organic corrosion inhibitors. Working temperature range: -50°C to +200°C.

### • Concentrated Greenway® Neo

Greenway® Neo	To be diluted.		Can 10 l, can 20 l, drum 210 l, container 1000 kg, bulk;
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### • Ready-to-use Greenway® Neo

Greenway® Neo -30	-30°C		Can 20 l, drum 210 l, container 1000 kg, bulk.
Greenway® Neo -55	-55°C		Can 20 l, drum 210 l, container 1000 kg, bulk.

Ask us for other dilutions.

## Thermera® (Betaine)

Betaine based product for refrigeration installations. Non-toxic and environmentally friendly. Suitable for a wide range of applications, especially in those sectors where health and environmental considerations are of particular importance. Working temperature range: -20°C to +65°C.

Thermera® R -35	-35°C		Can 20 l, drum 210 l, container 1000 l.
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## Temper® (Potassium Acetate and Formate)

Potassium Acetate and Formate based product. Its viscosity at low temperatures makes it the perfect product for low temperature industrial processes. It is non-flammable with low toxicity, and compatible with a wide range of materials. Working temperature range: -50°C to +70°C.

Temper®	-55°C		Can 25 l, drum 208 l, container 1000 l, bulk.
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Ask us for other dilutions: -10, -20, -30, -40°C.



Heat transfer fluids for heating and hot water systems. Suitable for new renewable technologies, including solar thermal and geothermal systems

Products	Freezing point	Packaging
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## Greenway® Neo (1,3 propane-diol biosourced)

1,3 propane-diol biosourced based product. Greenway® Neo has a much lower viscosity compared to an MPG. It contains long life organic corrosion inhibitors. Formulation approved by the French General Health Department as a heat transfer fluid for single exchange sanitary water production systems. Working temperature range: -50°C to +200°C.

### • Concentrated Greenway® Neo

Greenway® Neo	To be diluted.	Can 10 l, Can 20 l, drum 210 l, container 1000 kg, bulk.
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### • Ready-to-use Greenway® Neo

Greenway® Neo -18	-18°C	Can 20 l, drum 210 l, container 1000 kg.
Greenway® Neo -25	-25°C	Can 20 l, drum 210 l, container 1000 kg, bulk.
Greenway® Neo -30	-30°C	Can 20 l, drum 210 l, container 1000 kg, bulk.
Greenway® Neo -55	-55°C	Can 20 l, drum 210 l, container 1000 kg.

## Greenway® Neo Solar (1,3 propane-diol biosourced)

Gives stability and is a proven fluid at high temperatures for withstanding summertime stagnation periods.

### • Concentrated Greenway® Neo Solar

Greenway® Neo Solar	To be diluted.	Can 20 l, drum 210 l, container 1000 kg.
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### • Ready-to-use Greenway® Neo Solar

Greenway® Neo Solar -25	-25°C	Can 20 l, drum 210 l, container 1000 kg, bulk.
Greenway® Neo Solar -30	-30°C	Can 20 l, drum 210 l, container 1000 kg, bulk.

## Greenway® Neo Heat Pump (1,3 propane-diol biosourced)

### • Concentrated Greenway® Neo Heat Pump

Greenway® Neo Heat Pump	To be diluted.	Can 20 l, drum 210 l, container 1000 kg.
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### • Ready-to-use Greenway® Neo Heat Pump

Greenway® Neo Heat Pump -25	-25°C	Can 20 l, container 1000 kg.
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Contact us for other dilutions.

## Neutraguard® Neo (MPG)

Monopropylene glycol based product with long life organic corrosion inhibitors. Formulation approved by the French General Health Department as a heat transfer fluid for single exchange sanitary water production systems. Working temperature range: -28°C to +180°C.

Neutraguard® Neo	To be diluted.	Can 20 l, drum 210 l, container 1000 kg.
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## Solufliud® (MPG)

Monopropylene glycol based product with long life organic corrosion inhibitors. Formulation approved by the French General Health Department as a heat transfer fluid for single exchange sanitary water production systems. Working temperature range: -20°C to +200°C.

Solufliud® -25	-25°C	Can 20 l, drum 210 l, container 1000 kg.
Solufliud® Solar -25	-25°C	Can 20 l, drum 210 l, container 1000 kg.
Solufliud® Heat Pump -25	-25°C	Can 20 l, drum 210 l, container 1000 kg.

## Thermera® (Betaine)

Betaine based product for air-conditioning installations. Non-toxic and environmentally friendly. Suitable for a wide range of applications, especially in those sectors where health and environmental considerations are of particular importance. Working temperature range: -10°C to +65°C.

Thermera® AC -15	-15°C	Can 20 l, drum 210 l, container 1000 kg.
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## Info

### ■ Borax Free

Climalife heat transfer fluids do not contain borax, in line with ECHA decision ED/30/2010 of 18/06/2010, which lists borax as a Substance of Very High Concern because of its toxic effects on reproduction.



## Analysis

■ To check frost protection, measure system deterioration, and evaluate the health of your system and its heat transfer fluid, see our list of Axilis analyses on page 27.

**axilis**  
by climalife



More info on:

[climalife.dehon.com/heat-transfer-fluids](http://climalife.dehon.com/heat-transfer-fluids)





# Lubricants

Products intended for the lubrication of refrigeration compressors

Family of oils	Refrigerant type	ISO GRADE *							
		ISO 20	ISO 32	ISO 46	ISO 55	ISO 68 to 80	ISO 100	ISO 150 to 220	ISO > 300
Mineral (MN)	HCFC HC NH <sub>3</sub>		Mobil Arctic 155 Suniso 3 GS	Mobil Arctic C Heavy Total Lunaria FR 46		CPI CP 1009-68 Mobil Arctic 300 Suniso 4 GS Total Lunaria FR 68 Total Lunaria NH 68	CPI CP 1009-100		
Semi-synthetic	HCFC		Bitzer B 5.2 (AB+MN)						
Synthetic Alkyl benzene (AB)	HCFC		Mobil Zerice S 32 Zerol 150	Mobil Zerice S 46		Mobil Zerice S 68	Mobil Zerice S 100		
Synthetic Poly alpha olefin (PAO)	HCFC HC NH <sub>3</sub> CO <sub>2</sub>			CPI CP 4600-46 Total Lunaria SH 46		CPI CP 4600-68 CPI CP 4614-68-F CPI CP 4624-68-F CPI CP 4647-68 (PAO+AB) CPI CP-6006-68 Mobil Arctic SHC 226 E Mobil SHC NH 68 (PAO+AB)	CPI CP 4600-100 CPI CP 4601-100 CPI CP-6006-100 Mobil Arctic SHC 228	CPI CP 4600-150 Mobil Arctic SHC 230	Mobil Arctic SHC 234
Synthetic Polyolesters (POE)	HFC (incl. R-32) HFO CO <sub>2</sub>	CPI Solest 22 HQ POE 22  Mobil EAL Arctic 22 Mobil EAL Arctic 22 CC	Bitzer BSE 32 CPI Solest 31HE  CPI Solest LT 32 HQ POE 32 Mobil EAL Arctic 32 Total Planetelf ACD 32	CPI Solest 46 Mobil EAL Arctic 46  Total Planetelf ACD 46 HQ POE 46	Bitzer BSE 60K	Bitzer BSE 85K CPI Solest 68 HQ POE 68 Mobil EAL Arctic 68 Mobil Gargoyle SHC 80 POE Total Planetelf ACD 68	CPI Solest 120 Mobil EAL Arctic 100  Total Planetelf ACD 100 FY	Bitzer BSE 170 Bitzer B 150 SH  CPI Solest 170 CPI Solest 180 CPI CP 4214-150	CPI Solest 370 Bitzer B 320 SH CPI CP 4214-320
Synthetic Polyvinylethers (PVE)	HFC (incl. R-32)		Bitzer BVC 32					Mobil EAL Arctic 220 Total Planetelf ACD 150 FY Total Planetelf ACD 220 FY HQ POE 170 HQ POE 220	
Synthetic Polyalkyleneglycol (PAG)	HC NH <sub>3</sub>					CPI CP 1507-68	CPI CP 1528-100		
Phenolpropoxylate	NH <sub>3</sub>						CPI CP-412-100 DX		

\*The viscosity of an oil is its resistance to the uniform and turbulence-free flow of a fluid. The ISO grade is a measure of the viscosity of an oil in cSt at 40°C, as provided by a drawn sample.

## LUBRICANTS

### CHOOSING THE RIGHT OIL is essential for the performance and longevity of the refrigeration installation.

Lubrication is one of the most important factors in whether or not a refrigeration installation works correctly.

The choice of lubricant is specific to the installation and applications in question. It is important to follow the recommendations of the compressor manufacturer. The oil ensures that the different moving parts of the compressor are lubricated by forming a lubricating, homogenous "film". In rotary screw compressors, it also ensures tightness and therefore effective refrigeration.

#### Advantages of working with Climalife:

- A global offer suitable for all refrigerants.
- International availability.
- Quality product range.

More info on: [climalife.dehon.com/oils](http://climalife.dehon.com/oils)





# Lubricants

Products intended for the lubrication of refrigeration compressors

Products	Oil type	Packaging	Comments
<b>Mineral oils</b>			
CP-1009-68	HT/MN	Can 18.92 L / Drum 208 L	Hydrotreated oil for ammonia, very refined, chemically inert.
CP-1009-100	HT/MN	Drum 208 L	
Mobil Arctic 155	MN	Can 20 L / Drum 208 L	
Mobil Arctic 300	MN	Can 20 L / Drum 208 L	
Mobil Arctic C Heavy	MN	Can 20 L / Drum 208 L	
Suniso 3 GS	MN	Can 4 L / Can 20 L	
Suniso 4 GS	MN	Can 4 L / Can 20 L	
Total Lunaria FR 46	MN	Can 20 L	
Total Lunaria FR 68	MN	Can 20 L / Drum 208 L	
Total Lunaria NH 68	MN	Can 20 L / Drum 208 L	
<b>Semi-synthetic oils</b>			
Bitzer B 5.2	AB/MN	Can 5 L	
<b>Synthetic oils</b>			
• <b>AB: alkyl benzene oils</b> These are recommended for R-22 type fluids and HCFC mixtures. They are compatible with traditional mineral oils. Where the original oil is proved to be incompatible with mineral oils, alkyl benzene oils offer an excellent replacement.			
Mobil Zerice S 32	AB	Can 20 L	
Mobil Zerice S 46	AB	Can 20 L / Drum 208 L	
Mobil Zerice S 68	AB	Can 20 L / Drum 208 L	
Mobil Zerice S 100	AB	Can 20 L / Drum 208 L	
Mobil Arctic SHC NH 68	AB/PAO	Can 20 L	Synthetic oil for NH <sub>3</sub> .
Zerol 150	AB	Can 5 L	
• <b>PAO: poly alpha olefin oils</b> These have very low melting points and excellent thermic stability, which make them suitable for use in systems using R-22 or ammonia in extreme conditions.			
CPI CP 4600-46	PAO	Can 18.92 L / Drum 208 L	
CPI CP 4600-68	PAO	Can 18.92 L / Drum 208 L	
CPI CP 4600-100	PAO	Can 18.92 L / Drum 208 L	
CPI CP 4600-150	PAO	Can 18.92 L / Drum 208 L	
CPI CP 4601-100	PAO	Can 18.92 L / Drum 208 L	
CPI CP-4614-68F	PAO	Can 18.92 L / Drum 208 L	Oil for refrigeration compressors using NH <sub>3</sub> .
CPI CP-4624-68-F	PAO	Can 18.92 L / Drum 208 L	Synthetic oil with additives to protect circuits using CO <sub>2</sub> .
CPI CP 4647-68	PAO/AB	Can 18.92 L / Drum 208 L	
CPI CP 6006-68	PAO	Can 18.92 L / Drum 208 L	
CPI CP 6006-100	PAO	Can 19 L	
Mobil Arctic SHC 226 E	PAO	Can 20 L / Drum 208 L	
Mobil Arctic SHC 228	PAO	Can 20 L	
Mobil Arctic SHC 230	PAO	Can 20 L	
Mobil Arctic SHC 234	PAO	Drum 208 L	Upon request.
Total Lunaria SH 46	PAO	Can 20 L / Drum 208 L	Oil for refrigeration compressors using NH <sub>3</sub> .
Total Lunaria SH 68	PAO	Can 20 L / Drum 208 L	
• <b>POE: polyol ester oils</b> These are for use with HFCs in all refrigeration and air conditioning applications (except for car A/C).			
Bitzer BSE 32	POE	Can 5 L / Can 10 L	
Bitzer BSE 170	POE	Can 10 L / Drum 200 L	
Bitzer B 150 SH	POE	Can 20 L	
Bitzer B 320 SH	POE	Can 5 L / Can 20 L	



Products	Oil type	Packaging	Comments
<b>Synthetic oils (continued)</b>			
Bitzer BSE 60K	POE	Can 1 L / Can 5 L	Oil for compressors running on R-744.
Bitzer BSE 85K	POE	Can 1 L / Can 5 L	Oil for compressors running on R-744 (available only on request).
CPI Solest 31HE	POE	Can 0.95 L / Can 3.78 L / Can 18.92 L / Drum 208 L	
CPI Solest 32	POE	Can 0.95 L / Can 3.78 L	
CPI Solest LT 32	POE	Can 3.78 L / Can 18.92 L / Drum 208 L	Specifically for low temperature.
CPI Solest 46	POE	Can 3.78 L / Can 18.92 L / Drum 208 L	
CPI Solest 68	POE	Can 3.78 L / Can 18.92 L / Drum 208 L	
CPI Solest 120	POE	Can 3.78 L / Can 18.92 L / Drum 208 L	
CPI Solest 170	POE	Can 0.95 L / Can 3.78 L / Can 18.92 L / Drum 208 L	
CPI Solest 180	POE	Can 18.92 L	
CPI Solest 370	POE	Can 18.92 L / Drum 208 L	
CPI CP 4214-150	POE	Can 18.92 L / Drum 208 L	
CPI CP 4214-320	POE	Can 18.92 L / Drum 208 L	
HQ POE 22	POE	Can 1 L / Can 5 L / Can 20 L	
HQ POE 32	POE	Can 1 L / Can 5 L / Can 20 L	
HQ POE 46	POE	Can 1 L / Can 5 L / Can 20 L	
HQ POE 68	POE	Can 1 L / Can 5 L / Can 20 L	
HQ POE 170	POE	Can 5 L / Can 20 L	
HQ POE 220	POE	Can 20 L	
Mobil EAL Arctic 22	POE	Can 5 L	
Mobil EAL Arctic 22 CC	POE	Can 5 L / Can 20 L	
Mobil EAL Arctic 32	POE	Can 5 L / Can 20 L	
Mobil EAL Arctic 46	POE	Can 5 L / Can 20 L	
Mobil EAL Arctic 68	POE	Can 5 L / Can 20 L	
Mobil EAL Arctic 100	POE	Can 20 L / Drum 208 L	
Mobil EAL Arctic 220	POE	Drum 208 L	
Mobil SHC Gargoyle 80 POE	POE	Can 5 L / Can 20 L	Oil developed for CO <sub>2</sub> / HFO compressors.
Total Planetelf ACD 32	POE	Can 5 L / Can 20 L	
Total Planetelf ACD 46	POE	Can 5 L / Can 20 L	
Total Planetelf ACD 68	POE	Can 5 L / Can 20 L	
Total Planetelf ACD 100 FY	POE	Can 1 L	
Total Planetelf ACD 150 FY	POE	Can 20 L	
Total Planetelf ACD 220 FY	POE	Can 20 L / Drum 208 L	
• <b>Phenolpropoxyate</b>			
CPI CP-412-100 DX		Can 18.92 L / Drum 208 L	Specific oil for ammonia - miscible with NH <sub>3</sub> .
• <b>PAG: polyalkylene glycol oils</b>			
CPI 1507-68	PAG	Drum 208 L	
CPI 1528-100	PAG	Drum 208 L	
Total Planetelf PAG 244F	PAG	250 ml	
• <b>PVE: polyvinylether oil</b>			
Bitzer BVC 32	PVE	Can 1 L / Can 5 L	

Contact us about any oil not mentioned here.

## Info

### Mineral oils

Wax-free hydrocarbon mixtures specifically chosen for their excellent fluidity at low temperatures. Oils adapted for use with CFC, HCFC and ammonia-based secondary refrigerant fluids.

### Semi-synthetic oils

Mixtures of mineral and synthetic oils designed for refrigeration installations which work at low temperatures and use limited miscibility secondary refrigerant fluids with mineral oils such as R-22 fluid.

### Synthetic oils

Polymers made up of specific chemical monomers such as esters. The first synthetic oils were developed for HCFCs (AB and PAO). With the arrival of HFCs came a new kind of oil (POE), since mineral oils are not miscible with HFCs.



## Analysis

In order to insure good lubrication of your compressor or in the case of maintenance, please refer to our Axilis range, for on site-acid test or laboratory analysis (p.27).

**axilis**  
by dimalife



### More info on:

[climalife.dehon.com/oils](http://climalife.dehon.com/oils)



Products	Comments
<b>Leak detection</b>	
<b>• Portable electronic detectors</b>	
Leak detector DDH2 UV	Suitable for all fluids CFCs, HCFCs, HFCs and HFOs. Heated diode sensor. Leaks signalled by audio alarm & LED, battery or mains powered. Numeric indicator allows rate of leak to be estimated in gm/year. Automatic calibration. Equipped with a UV lamp.
Leak detector XP 1	Suitable for HCFCs, HFCs. By ionisation. Highly sensitive (3 gm/yr). 7 sensitivity levels. Battery powered. Supplied with replacement sensor.
Detector D-Tek Select	Suitable for HCFC's, HFCs (R-32 incl.) and HFOs. Infrared Sensor. 2 sensitivity levels, (2gm/yr), loud-alarm, LED light, battery powered.
Leak detector D-Tek CO <sub>2</sub>	Infrared sensor for R-744. Sensitivity 6 gm/yr.
Leak detector Gas-Mate	NIMH Battery powered, Low battery gauge. Supplied with case and adapter 12 and 220V.
<b>• Sensitivity control</b>	
5 gm/year sensitivity level checker	Sets sensitivity to 5 gm/yr for portable detectors + checking report.
Mini-Check	Creates mini leak of 5 gm/yr of R-134a so that the user can conduct on-site checks of portable leak detectors before searching for any leak.
<b>• Detection using bubbles</b>	
Prestobul Max	Box of 12 cans. Use in the vicinity of the suspected leak. Bubbles will form at the location of the leak.
<b>• Detection using fluorescence</b>	
5 LED UV torch (69782)	5 Blue UV Bulbs. Robust aluminium body.
Universal tracer injector kit (69702)	Rapid injection kit for all refrigeration installations. 1/4" female connectors. One syringe contains 4 doses of 7.5 ml.
Pack of 6 tracer injectors (69700)	Refill pack containing 6 syringes for tracer kit.
<b>• Fixed leak detector</b>	
MURCO MGD	For HFO / HFC / HCFC / HC / NH <sub>3</sub> / CO <sub>2</sub> . Semi-conductor or infra-red sensors. Controller with 1 to 6 sensors and 1 or 2 alarm levels. Audio and visual internal alarm and switch for external alarm. Free contacts for telesurveillance and security piloting. 12V output (upon model) for centralised management system. Classified Exe et Exds (areas at risk).
MURCO MGS 150	For HFO / HFC / HCFC / HC / NH <sub>3</sub> / CO <sub>2</sub> . Sensors can be used on a stand-alone basis or connected to an MGS controller or integrated to a building management system. Semi-conductor or infra-red sensor with 1 alarm level. Audio and visual internal alarm and switch for external alarm. Free contacts for telesurveillance and security piloting. 12V output (upon model) for centralised management system. Classified Exe et Exds (areas at risk).
MURCO MGS 550	For HFO / HFC / HCFC / HC / NH <sub>3</sub> / CO <sub>2</sub> . Flexible 1 or 2 sensors capability: 1 sensor intergrated in the housing, 2nd sensor optional. 5 digit numeric LED display and 3 status indicators. Magnetic wand enables easy and non-intrusive adjustment directly on the housing. Analog or numeric output. 3 user assignable relays. Powered 24V.
Calibration kit	Sensitivity control kit for yearly check of the fixed leak detectors. Includes: a 110 L cylinder of calibration gas, a flow regulator, a calibrating venting hood, and flexible non absorbent tubing.

Contact us for MURCO spare parts.



Products	Dimensions (mm)	Weight	Comments
<b>Transfer and recovery equipment, vacuum pump</b>			
Recovery unit Recover XLT2-AP	490 x 315 x 317	14.5 kg	Oil-less twin cylinder compressor with low pressure switch. Safe venting of case interior prior to start up. Ambient pressure switch. Auto-purge for quick change from one refrigerant to another. Capacity (ARI 740-98) in vapor for refrigerant cat. 3*: 10; liquid: 186; push-pull: 250. All refrigerants, silent and easy to use with its 4 position switch.
Recovery unit YJ-LTE	228.6 x 292.1 x 342.9	11.3 kg	Oil-less twin cylinder compressor with low pressure switch. Built-in circuit breaker. Capacity (ARI 740-98) in vapor cat. 3*: 10; liquid: 186; push-pull: 249.6. Easy to use with 2 positions: recovery / purge. Lightweight, all refrigerants.
Recovery unit Appion G1	289 x 239 x 262	10 kg	Dry piston compressor protected by HP switch. All refrigerants, no valves to handle, automatic switch from liquid to gas recovery. Compact design protects gauges, valves and switch. Capacity (ARI-740-98) in vapor cat.3*: 12.2; liquid: 122.4; push pull: 594.
<i>*cat.3 : refrigerant of the 3rd category type R-22, R-134a, etc.</i>			
Vacuum pump 2VP42 EV		7.2 kg	2 levels 42L/Min. All fluids, evacuates to < 25 microns (0.034 mbar). Flare 1/4"M. Rib cooling, easily accessible for filling and emptying. With vacuum gauge.
Super Evac pump 95 L/Min (93543)	381 x 169 x 300	13.4 kg	2 levels 95 L/Min, M Flare inlet connector: 1/4"-1/2", inbuilt vacuum gauge, empties to: 15 microns (0.02 mbar). One way valve, gas ballast.
Super Evac pump 142 L/min (93563)	406 x 169 x 300	14.3 kg	2 levels 142 L/Min, M Flare inlet connector: 1/4"-1/2", inbuilt vacuum gauge, empties to: 15 microns (0.02 mbar). One way valve, gas ballast.
Oil for vacuum pump			<b>Contact us.</b>
<b>Scales</b>			
Electronic scale 50 kg (68827)	394 x 311 x 83	4.1 kg	Electronic scales. Maximum load 50 kg, precise readings to within 0.1%.
Charging kit for scale (68829)			Kit can be adapted to ref. 6639. Allows the charge in a fluid to be programmed automatically (includes solenoid valve, mains adaptor, case).
Electronic scale DRM 15010 - 150 kg	380 x 320 x 64	2.7 kg	Electronic scales. Maximum load 150 kg, precision 10 g. Steel plate. Professional usage.
<b>Measuring and checking devices</b>			
LCD digital vacuum gauge gauge (69080)			To control evacuation. From 1 bar to 0.025 mbar. Automatic temperature compensation without calibration. Low battery indicator. Connection 1/4" FI, female.
Contact thermometer DT 1630			Ergonomic pocket thermometer from -55°C to +149°C. Audio alarm can be programmed to high or low temperature. Flexible cable with stainless steel probe.
Pressure regulator D 30 - 30 bar			Neutral gas detector. Service pressure 30 bar to put systems under nitrogen pressure.
Pressure regulator D 60 - 60 bar			Controls the pressure of the installation. Two-way pressure gauge. Type C entry connector. Brazing outlet connector for 6 mm tube and double ring outlet connector.



## Regulation

■ **The frequency of leak checking** with a portable leak detector (sensitivity < 5gr/yr) is determined by the charge size and the GWP of the refrigerant.

■ **Leak detector check** Leak detector sensitivity must be checked at least once a year.

■ **Certifications:** All of our detectors are in compliance with Certificate EN 14624 for halogenated refrigerants.

## Advantages of working with Climalife:

- Equipment compliant with F-Gas specifications,
- Tools dedicated for each refrigerant.



More info on:

[climalife.dehon.com/equipment](http://climalife.dehon.com/equipment)





# Equipment

Tools for professionals

Products	Comments
<b>Manifolds / hoses</b>	
MANTOOTH manometer P/T num.	More than 100 refrigerants. Schrader connections. Available in single, double and duo models.
Manifold Titan HFC R-134A/404A/407C (49936)	
Manifold Titan R-134A/404A/407F	By pass, HP/LP (bar) manometer. Aluminium body, lightweight and robust, piston valves. Liquid indicator (except for Titan R-134A/404A/407F). Precise to 1%.
Manifold Titan R-32/410A	
Empty manifold case	Transport case for manifold. Black, double foam interior. Dim.: 475 x 390 x 130 mm.
Transcritical CO <sub>2</sub> manifold	2 valves. Aluminium body. Liquid filled gauges (80-160 bars). 1/4" connections. With carrying case.
Pack of 3 hoses 90 cm (29983) valves	Reinforced hoses with stop valves, to prevent moisture ingress. Colours: blue, red, yellow. For all refrigerants (except R-410A). Connection 1/4".
Pack of 3 hoses 150 cm (29985) valves	
Pack of 3 hoses 90 cm R-410A (29483) valves	R-410A special. Reinforced hoses with stop valves, to prevent moisture ingress.
Pack of 3 hoses 150 cm R-410A (29485) valves	Connection 1/4" - 5/16" for blue and red and 1/4" - 1/4" for yellow.
Pack of DH Clim hoses 150 valves	Pack of 3 hoses 150cm for all refrigerant (except R-410A) with stop valves. Colours: blue, red and yellow. Connection 1/4".
Pack of R-410A DH Clim hoses 150 valves	Pack of 3 hoses 150 cm special R-410A with stop valves. Colours: blue, red and yellow. Connection: 1/4" - 5/16".
NH <sub>3</sub> hose 5 m	Specific hose for NH <sub>3</sub> with a 1/4 of a turn valve. Submitted to retesting. Connection: type C 21,7 x 1,814 on right.
CO <sub>2</sub> hose transcritic	Available in 3 and 5 m. Flexible 1/4"-1/4" braided stainless steel with anti-whip cable. Operating pressure 200 bars.

## Application of heat transfer and secondary refrigerant fluids

Refractometer	Precise on-site measurement of the freezing point of a glycol-based heat transfer fluid.
Universal pump	For 217 L or 30 L barrels. Includes: one FP430 PP-1000 or FP430 PP-700 plunger body, 1 metre long or 0.7 metre long, an F417 electric motor, a screw for G2 plunger body.

*This pump can be used to introduce heat transfer fluids, lubricants and our cleaning products.*

## Focus



■ With ManTooth™ you'll never need a manifold or hoses again. That's because your phone can do all the work. ManTooth™ is a wireless digital pressure gauge that simplifies pressure and temperature checks. It can instantly calculate the system's superheat and subcooling, and displays the results in an easy-to-read colour format on your smartphone iOS or Android. The app is free to download and allows you to save these readings and organise them by location and equipment, to share them by email, making it simpler to track your maintenance work. Equipped with Schrader ports, it can also be used to easily adjust refrigerant charge if required.

More info on:

[climalife.dehon.com/mantooth](http://climalife.dehon.com/mantooth)



## Regulation

### ■ Safety

Our hoses for f-gases are equipped with stop valves - air valves, according to regulation n°2007-737.



More info on:

[climalife.dehon.com/equipment](http://climalife.dehon.com/equipment)



# Brazing alloys

A range of brazing products for all metals

Products	% Ag	Diameter	Packaging
<b>Bare brazing alloys</b>			
Brazing alloy DP 155	15	2 mm / 3 mm	Package of 1 kg / 5 kg
Brazing alloy DP 56	5	2 mm / 3 mm	Package of 1 kg / 5 kg
Brazing alloy DP 26	2	2 mm / 3 mm	Package of 1 kg / 5 kg
Brazing alloy DP 07	0	2 mm	Package of 1 kg



Products	% Ag	Diameter	Packaging	Comments
<b>Bare brazing alloys</b>				
Brazing alloy D 40 A	40	2 mm	Package of 1 kg	Bare Rod.
Brazing alloy D 56 A	56	2 mm	Package of 1 kg	Bare Rod.
<b>Brazing alloy with a flexible coating</b>				
Brazing alloy D 55 AEF	55	2 mm	Package of 0.5 kg	Very thin coating: 2.8 mm exterior diameter.
Brazing alloy D 40 AEF	40	2 mm	Package of 0.5 kg / 2.5 kg	Very thin coating: 2.8 mm exterior diameter.
Brazing alloy D 40 AE	40	2 mm	Package of 0.5 kg / 2.5 kg	
Brazing alloy D 34 AEF	34	2 mm	Package of 0.2 kg / 0.5 kg / 2.5 kg	Very thin coating: 2.8 mm exterior diameter.
Brazing alloy D 34 AE	34	2 mm	Package of 0.5 kg / 2.5 kg	
Brazing alloy D 30 AEF	30	2 mm	Package of 0.2 kg / 0.5 kg / 2.5 kg	Boric acid free.
Brazing alloy D 25 AEF	25	2 mm	Package of 0.5 kg	



Products	Packaging
<b>Flux for brazing alloys with a high silver content</b>	
Flux DX Powder	Jar of 130 g

*Climalife offers a selection of pressure regulators. Please consult the materials range for brazing applications.*



## Info

### ■ Bronze / silver / phosphorous brazing alloys without cadmium

The advantages of this type of brazing alloy include: a lower fusion temperature than binary brazing alloys, increased fluidity, improved alloy conductivity and better joint resistance.

### ■ Brazing alloys with a high silver content without cadmium

They provide high mechanical strength with good elongation and allow assembly of metals with different expansion characteristics.



## Regulation

### ■ Cadmium

On 21st May 2011, the regulation (EU) n°494/2011 was published to modify the annex XVII (point 23 paragraph 8) of regulation (CE) n°1907/2006 (REACH). This modification refers to cadmium and its compounds and their use in brazing alloys. This new regulation prohibits the use and sale of brazing alloys containing more than 0.01% weight of cadmium for high temperature brazing from the 10th December 2011. By high temperature brazing, we mean an assembly process, realised by the means of brazing alloys at temperatures above 450°C. There is derogation to brazing fillers used in Defence and Aerospace applications and to brazing fillers used for safety reasons.



More info on:

[climalife.dehon.com/brazing-alloys](http://climalife.dehon.com/brazing-alloys)





# Cleaning

Products for the cleaning and protection of refrigeration and air conditioning equipment



## External cleaning of thermal installations

Frionett® POWER ULTRA Universal cleaner		Frionett® ACTIV' Cleaner disinfectant				Frionett® CONTACT Cleaner disinfectant indirect food Contact*	
RTU Spray 750 ml	Concentrated Can 5 l	One Shot 150 ml	Foam 500 ml	RTU Spray 750 ml	Concentrated Can 5 l	RTU Spray 750 ml	RTU Can 5 l

### REFRIGERATION

Condensers:							
• small unit	■						
• other		■					
Evaporators:							
• small unit			■	■		■	■
• other					■		■
External parts of the unit	■						
Refrigerated showcases						■	■
<b>AIR CONDITIONING</b>							
Internal units:							
• walls units			■	■			
• ceiling units			■				
• ducts			■				
External units	■	■					
Evaporators external lagging			■	■			
Internal lagging	■	■		■			
Batteries Air Handling units					■		
<b>HEATING - VENTILATION SYSTEMS</b>							
Ventilation systems			■				
Ventilation convectors				■			
Ventilation ducts			■				
Heating systems	■						
<b>KITCHEN</b>							
Work surfaces						■	■
Hoods						■	■
Cooking equipment						■	■
Refrigerators / Freezers						■	■
<b>OTHER APPLICATIONS</b>							
Flat surfaces (eg. floor...)	■						

\*Indirect food contact:  
Mandatory rinsing with water  
after use.



Products	Packaging	Comments
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### External cleaning of thermal installations

#### • Universal cleaner of all smooth surfaces

Frionett® Power RTU Ultra	Trigger spray bottle 750 ml Ready to use	Alkaline and non-corrosive cleaning product used to eliminate grease and other contaminants, intended for professional cleaning of refrigeration and air-conditioning facilities (evaporators, condensers, fans and other surfaces).
Frionett® Power Ultra	Concentrated can 5 L	



#### • Cleaner, degreaser, disinfectant, deodorant

Frionett® Activ' One shot	Aerosol 150 ml	Disinfecting and deodorising product for the treatment of ventilation and air-conditioning systems (ducts, etc.) and for the purification of enclosed spaces. Eliminates bacterias, fungi and offensive odours.
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Frionett® Activ' Foam	Foam aerosol 500 ml	Powered active foam for cleaning small and medium sized refrigeration and air-conditioning installations (evaporators, internal units, etc.). Frionett Activ' Foam cleans deeply, deodorises and prevents the development of micro-organisms.
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Frionett® Activ' RTU	Trigger spray bottle 750 ml	Ready to use cleaning and disinfecting product for maintaining refrigeration and air-conditioning installations (for evaporators and internal units of small and medium capacities). Formulated to fight bacteria and fungi, Frionett Activ' RTU cleans deeply and eliminates offensive odours.
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Frionett® Activ'	Concentrated can 5 L	Concentrated cleaning and disinfecting product, designed to maintain refrigeration and air-conditioning installations (for large surface evaporators and internal units). Formulated to fight bacteria and fungi, Frionett Activ' cleans deeply and eliminates offensive odours.
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#### • Cleaner degreaser and disinfectant dedicated for indirect food contact

Frionett® Contact RTU	Trigger spray bottle 750 ml or 5 litre can Ready to use	Ultra-powerful alkaline product for cleaning and disinfecting refrigeration systems (cold rooms, etc.), and surfaces in food preparation areas (professional kitchens etc.).
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Frionett® Activ' and the Frionett® Contact range are not sold in the Netherlands, Belgium and Italy, because of biocide legislation which controls the placing on the market of biocide products country by country. Contact Climalife local representative to find alternative choice Frionett® BioActiv'.

## CLEANING

**REGULAR CLEANING OF AN INSTALLATION** improves its performance, prevents contamination, avoids offensive odours and increases longevity.

### Frionett® range advantages

With only 3 products, Frionett® Power Ultra, Frionett® Activ', Frionett® Contact:

- The majority of your needs for cleaning, degreasing, disinfecting, preventing and deodorising are covered.
- They help you face every situation (air-conditioning, commercial refrigeration, industrial refrigeration, hospitals, professional kitchens, etc).
- These products are in compliance with the current biocide regulation.



### Regulation

(EU) regulation n° 528/2012 - Article 72 "Use biocides safely. Always read the label and product information before use."



More info on:  
[climalife.dehon.com/  
external-cleaning-of-thermal-installations](http://climalife.dehon.com/external-cleaning-of-thermal-installations)





# Cleaning

Products for the cleaning and protection of refrigeration and air conditioning equipment



Products	Packaging	Charge	Comments
<b>Internal cleaning of refrigeration installations</b>			
Nettogaz GC+	Friocatch®	14 kg	Internal cleaning solvent for industrial refrigeration circuits with small volumes. Works effectively with all the usual refrigeration oils.
Nettogaz GC+	Cylinder 27 L	26 kg	
Connection kit Nettogaz GC+	Piece		Crown fitting 25 m PVC tube + 2 special stoppers + 2 clamp collars.
Small recovery drum Nettogaz GC+	Cask 30 L		For recovery of used GC+.
Facilisolv	Cask 30 L	35 kg	Internal cleaning solvent for industrial refrigeration circuits. Facilisolv works effectively in circuits using halogen fluids or NH <sub>3</sub> and those using the usual refrigeration oils.
Facilisolv	Drum 210 L	249.5 kg	
Connection kit Facilisolv	Piece		Crown fitting 25 m PVC tube + 2 special stoppers + 2 clamp collars.
Small recovery drum Facilisolv	Cask 30 L		For recovery of used Facilisolv.
Large recovery drum Facilisolv	Drum 217 L		For recovery of used Facilisolv.

Products	Packaging	Comments
<b>Internal cleaning of heat transfer fluid circuits</b>		
<b>• Descalers</b>		
Duonett® D7	Can 5 L, 20 L and drum 225 L	Safely removes limescale from boilers, heat exchangers and water systems. Neither toxic nor corrosive. Entirely biodegradable. Does not carry any risks for users or materials. Available on demand.
Desoxydant P	Can 20 kg	For removing limescale and deoxidising metallic surfaces in heat transfer fluid circuits. Use between 20 gm and 200 gm per litre of water. Rinse with Dispersant D followed by water.
Dispersant D	Can 20 kg	For removing metal oxides and sludges that have been detached by cleaning. Use between 20 gm and 50 gm per litre of water. Always rinse off with water.
Nettoyant N	Drum 200 L	For cleaning secondary refrigerant fluid (removes traces of refrigerant and oil) circuits before introduction of a heat transfer fluid. Always rinse with water. Ready to use. Made to order.
<b>• Solar Tar remover</b>		
SolRnett	Can 20 L and drum 210 L	Ready to use solution for the internal cleaning of solar thermal systems. An alkaline aqueous formula with good wetting characteristics to remove tar and deposits in solar circuits that have restricted flow due to the "caramelisation" of the degraded heat transfer fluid. Restores circulation and avoids replacement of the solar collectors. Efficient at room temperature.



## Focus



■ **Nettogaz GC+**  
Cleaning solvent which is easy to use thanks to the Climalife formulation and a specific nitrogen pressurised cylinder that gives it physical and chemical properties that make it perfectly suitable for this application. GC+ is instantly effective: its cleaning power is linear and its Kauri Butanol index greater than 80 allows us to confirm its high performance in eliminating impurities from circuits. It is completely safe and reliable: the product is non-flammable, non-toxic and does not contain fluorinated greenhouse gases or dangerous products.



■ **Duonett® D7**  
Scale removal treatment for heat exchangers and domestic hot water tanks that is both effective and safe for the operator. Unlike traditional descalers, Duonett® D7 selectively dissolves scales without damaging metals and synthetic materials:

- Easier to use than conventional acid products.
- Not corrosive or classified as hazardous.
- Does not produce toxic vapour.\*
- Requires no special protection equipment.\*
- Biodegradable when pure. Effectiveness helps maintain thermal efficiency: Duonett® D7 is also highly effective. It dissolves 280 g of scale per litre of product at 20°C. Using a circulation pump, it acts quickly and continuously without halting the operation of the installation and without damaging the piping system's components.

## Info



### Water treatment

Especially designed for social housing and tertiary market, the Theronett® range uses a unique combination of chemical and physical devices for sludge problems and scaling in water heating and cooling networks.

- To implement a solution that is both curative and preventive.
- To permanently maintain energy efficiency of water circuits.

The range is especially designed for power networks located between 300 and 800 kW.

### Why it is necessary to treat water for heating and cooling closed loops:

Quality water treatment guarantees clean and efficient climate networks:

- an energy efficiency pledge,
- regulatory compliance,
- a reduction of the ecological footprint.

### 4 steps:

Step 1 : Clean with Theronett® Sludge.  
Step 2 : Recover and capture with the sludge separator range.  
Step 3 : Protect with Theronett® Protector.  
Step 4 : Check with the Concentration Test.



### Regulation

■ **Theronett® Sludge remover and Protector** are approved by the DGS (French Health Ministry).



More info on:  
[climalife.dehon.com/cleaning](http://climalife.dehon.com/cleaning)

Products	Packaging	Comments
<b>Water treatment for heating and cooling closed loops</b>		
<b>Unique combination of chemical and physical solutions for water treatment of heating and cooling networks in tertiary, commercial and residential markets.</b>		
<b>• Chemical treatment</b>		
Theronett® Protector	Can 20 L	Designed to protect air conditioning systems and direct central heating installations, including those containing aluminium components. It prolongs the lifespan of the system, leaving a passivated film on the metal surfaces of the installation which prevents the appearance of scale and corrosion. Proportion to a level of 1% of the volume of water in circulation. Approved by the DGS (French Health Ministry).
Theronett® Sludge remover	Can 20 L	Non-acidic product with neutral pH, it restores a system heat balance by eliminating the buildup of sludge (magnetite) and ensures the quick and easy removal of cold spots. Thus real savings on primary energy can be achieved. Dose of 1% of the system volume. Approved by the DGS (French Health Ministry).
Test concentration	Kit of 10 tests	Checks the level of protection of Theronett® Protector to anticipate future maintenance treatments. A simple colour test shows if the installation is still protected against limescale or corrosion. The concentration test is a warranty for safety and prevention.

### • Physical treatment

**Sludge separator Theronett®**  
The sludge pot efficiently captures the debris in suspension. Located on the return line and at the lowest point to reach 100% of the flow. It causes no pressure drop (0.02 bar) and does not interfere with the flow when full. Equipped with a magnetic bar to optimise the collection of metallic oxides.



Tip: Select the separator with the same diameter as your return line.

Products	Major diameter	Comments
Separator ZUM 25 / 32	25 / 32	Fitted with a magnetic bar.
Separator ZIO 50F / 65F / 80F	50 / 65 / 80	Can be used as an air separator by installing upside down at the generator's output. To be fitted with a magnetic unit.
Separator ZIO 100F / 125F / 150 F	100 / 125 / 150	
Magnetic bar ZIMA 125-200 / 50-100	For ZIO 125F and 150F / For ZIO 50F to 100F	Magnetic bar in a brass thimble for easy maintenance, recommended to optimise the efficiency of capture.

**THERMONETT**





# Analysis

Preventative follow up solutions for installations



Products	Comments
<b>Refrigerant analysis</b>	
Liquid analysis package	Includes: identification, water content, oil content, acidity, appearance. For low pressure refrigerants: R-11, R-113, R-123, R-141b and Facilisolv.
Liquefied gas analysis package	Includes: identification, water content, oil content, acidity, appearance. For CFCs, HCFCs, HFCs, HFOs except low pressure refrigerants.
Liquefied gas analysis package with composition	Includes: composition, water content, oil content, acidity, appearance. For CFCs, HCFCs, HFCs, HFOs except low pressure refrigerants.
Identification/purity (GPC)*	Determines the purity of the fluid, using chromatography, in the gaseous phase.
Composition (GPC)*	Determines the composition by weight of the liquid phase of the refrigerant. Analysis for a composition (more than one molecule) eg.: R-404A, R-507, R-407F, etc.
Water content of liquefied gas	Measures the water content of the liquid phase of the refrigerant.
Oil residue or content	Measures the residue content of the liquid phase of a refrigerant.
Acid rate for liquefied gas	Measures the acidity of the liquid phase of the refrigerant.
Non-condensable gases by GPC (in the gaseous phase)*	Measures non-condensable gases in the gaseous phase (mandatory) of the refrigerant fluid.
Water/oil content of ammonia	Measures the water and oil content of NH <sub>3</sub> .
Sampling cylinder	Cylinder made available: ammonia / medium - high pressures.

\*GPC: Gas Phase Chromatography.



## ANALYSIS

**axilis**  
by **climalife**

## SELECTING AXILIS FOR YOUR ANALYSIS is the guarantee of know how and recognised expertise.

### Axilis analysis allows:

- Improved maintenance of thermal installations,
- Sustainability of systems,
- Identification and resolution of technical problems,
- Performance and efficiency optimisation,
- Achievement of energy savings.

## Advantages of working with Climalife:

- ⊙ A global offer for all technical fluids in a thermodynamic system.
- ⊙ A record to track your systems.
- ⊙ Preventive and curative solutions in situ or tailored.
- ⊙ Certified laboratories.



More info on:  
[climalife.dehon.com/analysis](http://climalife.dehon.com/analysis)

## Info

### Acitest Unipro

On site acidity control test for an instantaneous result. Allows diagnosis during maintenance, increases the installation's security and productivity and reduces the prospect of failure. Researched and developed by Climalife to determine the acidity level of an oil. Gives an indication of its state: good, limit, or acid.



### DPH

Periodic diagnostic test for preventative maintenance of installations. Can be performed on lubricants in use with halogenated refrigerants, CO<sub>2</sub> and NH<sub>3</sub>. Oil values are compared with standards and recommendations are made by Climalife experts. Climalife will advise you about the sample data based on the chosen frequency.



### KIT APC

Control analysis for preventive maintenance of climatic circuits. The APC kit is made up of an identification form, a 500 ml flask for sampling on-site.



Products	Comments
<b>Oil Analysis</b>	
Acitest Unipro	Acidity test for all kinds of oils, with or without additives (formulation without toluene). Box of 6.
DPH: Periodic diagnostic test on the refrigerant oil in a circuit. The values obtained are compared with both standard values and Climalife recommendations.	
DPH A	Appearance, viscosity, acid index, water content, elements indicating wear, additives, contaminants. 1 x 60 ml bottle.
DPH B	Same as DPH A + dielectric constant. 1 x 500 ml bottle.
DPH E	Used to determine the percentage of oil remaining after a retrofit. 3 x 60 ml bottles (1 for the oil contained in the installation before retrofit, 1 for the new oil before introduction in the system and 1 for the oil in the installation after retrofit and running).
Kit for specific analysis	4 tests to analyse viscosity, water content, acidity and the presence of the 5 elements that indicate wear (Fe, Zn, Cu, Al, Si).

### On demand oils analysis:

Viscosity / Acidity rate / Water content / Dielectric constant / Ferrography / and more.  
*Ask us.*

### Heat transfer fluid analysis

Alkaline reserve	Evaluates protection against corrosion.
pH	Measures the potential of hydrogen (pH). i.e Alkalinity / Acidity.
Freezing point	Checks the antifreeze protection of the heat transfer fluid.
Viscosity	Viscosity ≤ 20°C / > 20°C and ≤ 50°C / > 50°C and ≤ 100°C. Determines charge loss and allows the correct pump size to be selected.
Ferrography heat transfer fluids	Identifies and quantifies the particles present in the heat transfer fluid.
Alcali analysis	Density / Composition / Freezing point.

### On demand HTF analysis:

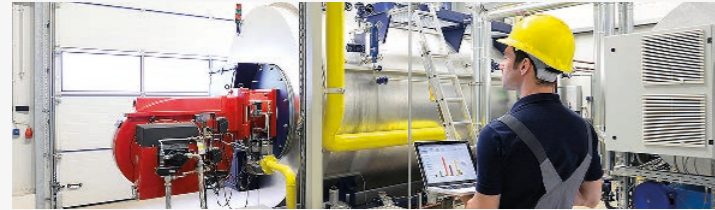
Refractive Index / Particle counting / Element contents / and more.  
*Ask us.*

### Analysis of the heat transfer fluid and interpretation of the results by the Climalife laboratory.

APC A	Appearance + freezing point for glycol or 1,3-propanediol (Greenway® Neo) based products.
APC B	APC A + density at 20°C + reserve alkalinity (deterioration evaluation) + pH for glycol or 1,3-propanediol (Greenway® Neo) based products.
APC D	APC B + GPC* quantiglycol test for glycol based products only.

\* GPC: Gas Phase Chromatography.





**Turnkey Services**

Our Industrial Services team can be your subcontractor for conducting special operations on cooling, heating, and air conditioning installations, including: recovery, decanting, charging, cleaning, etc, as well as regulatory maintenance operations.

Products	Comments
Removing refrigerants from installations	Recovering refrigerants, heat transfer fluids or secondary refrigerants, treating fluids according to current regulations, recovering unclean containers.
Removing heat transfer fluids from installations	
Miscellaneous installation transfer	
Refrigerant refilling	Charging refrigerants or heat transfer fluids into installations: bulk supplies, loading under special conditions, installation concentration (dosing).
Heat transfer fluid refilling	
Glycol - water system cleaning	<b>For heating, cooling, or air conditioning installations:</b> - Removing sludge from climate systems with our Thermonett® range of products. - Removing contaminants from refrigerant circuits with special products like Facilisolv. or Nettogaz GC+. - Cleaning secondary refrigerant/heat transfer fluid circuits with Desoxydant P and Dispersant D, descaling with Duonett® D7.
Cleaning refrigerant installation	
Miscellaneous installation cleaning	
Air conditioning water system cleaning	
Heating water system cleaning	
Periodical inspection of EUP*	<b>Regulatory maintenance of pressure equipment:</b> Climalife handles the periodic inspection of your installations for you (tanks, pipes, applicable instruments, etc.) and issues a certificate. Preventative maintenance of refrigerant storage and distribution equipment.
Periodical requalification of EUP*	<b>Regulatory maintenance of pressure equipment:</b> - Climalife handles the periodical requalification of your installations for you (tanks, pipes, applicable instruments, etc.) and issues a certificate. - Periodic requalification of transportable pressure equipment (container retesting).

\* EUP: Equipment Under Pressure.

**SERVICES**


**COMPLETE SOLUTIONS for services and engineering**

Through our experience on our production sites, Crealis, a wholly owned subsidiary of the Dehon group, specialises in services and engineering and can provide turnkey services for Climalife's clients. Crealis has the certificate of capability, reference number 183545-R1, for activities classified in category A.

Our structured team of experts can be a day-to-day partner for installers and thermal application professionals.

**Advantages of working with Climalife:**

- Turnkey solution for services.
- Planning interventions across your country.
- Expertise with the physical properties of the liquids.
- Our experts can share their knowledge with your team
- Managing waste traceability and take control of operational and administrative requirements.

 **More info on:**  
[climalife.dehon.com/services](http://climalife.dehon.com/services)

**Engineering Solutions**

**Conception, achievement and project management**

Climalife has developed a number of procedures, to study, and create solutions for using refrigerants, adapted to your needs.

Engineering	Comments
<b>The GRV Range</b>	
- GRV-L (P): Empty Recovery Group with dry pneumatic compressors	For refrigerant recovery operations. These machines, installed on request, are adapted to your budget, and can perform recovery operations on climatic units or tanks with a capacity to more than 30m³ in the liquid phase.
- GRV-L (Ed): Empty Recovery Group with dry electric compressors	Recovery Groups are suited to most refrigerants (R-22, R-134a, R-404A, R-407C, R-410A, etc).
- GRV-L (Eo): Empty Recovery Group with lubricated electric compressors	
	GRV-L is designed for advanced recovery on equipment containing refrigerants. These systems are particularly well suited to transfer operations, the recovered fluid being free of any traces of lubricant.
<b>The inversion systems</b>	
- Skid I (w) P: weighing by inversion system liquid sensor and / or pressure sensor comprising a pneumatic pumping system.	Reversed pumping systems allow a continuous distribution of refrigerants from containers and/or bottles. Reversed pumping skids allow an optimal drainage of the containers and / or bottles. They are suited to most refrigerants (eg R-22, R-134a, R-404A, R-407C, R-410A).
- Skid IP: Inversion System by liquid detector and pressure comprising a pneumatic pumping system.	
Fluid loading system (eg R-134a / R-410A / R-407C - R-404A.)	Automatic via a programmed system, these installations are designed based on technical specifications. They can deal with various modulations: charges controlled by mass balance, N2 pressurisation, and vacuum procedures.
Storage and pumping installation bundle (R-134a / R-410A / R-407C / R-404A / Solstice® yf)	Design / installation of storage tanks and distribution systems for cooling refrigerants.

**Our teams provide:**

- co-ordination and project tracking all the way to installation on site,
- the commissioning of an installation.

**When we deliver the installation, we provide you with a complete technical file including:**

- the description of the appliance,
- the operating manual,
- the test certificates or reports,
- the documents about safety accessories and the adjustment reports,
- the preventive and regulatory maintenance schedule.

**Info**

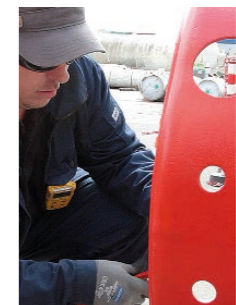
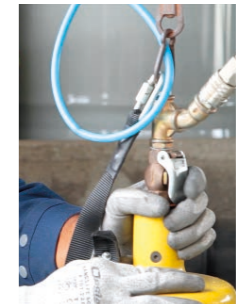
■ **Crealis industrial sites** are recognised as Installations Classified for the Protection of the Environment, as referred to in law no. 76-664 of 19<sup>th</sup> July 1976 and according to the decree 2010-369 that modified the category for Installations Classified for the Protection of the Environment in the field of waste for transit, regrouping, sorting and treatment operations.

Our industrial sites employ personnel qualified and certified for all activities: regular training is given to our teams for wearing the SCBA (Self-Contained Breathing Apparatus), handling fire extinction equipment, working at heights, driving forklifts, cranes, mobile bridges, or platforms (CACES). The production operators are trained to deal with chemical risks. Our installers all have the capability certificate for handling fluorinated greenhouse gas (F-Gas regulation). On a day-to-day basis, Safe Transport consultants assist our logistics team to manage the transport of dangerous products.

**Depending on the industrial site, CREALIS takes charge of the following:**

- holding and sorting of collected waste,
- conditioning, regenerating and holding of HCFC, HFC, halons.
- formulating and storage of anti-freeze and heat transfer fluids based on MEG, MPG, 1,3-propanediol biosourced.

Crealis is certified. ISO 9001: 2008. Certificate number: FR013322-1.



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## Web / App / Magazine

The support and complimentary Climalife tools to make your life easier

Product references, packaging, fill weights, etc.

News, Climalife Contact Magazine

The collage displays various digital resources: a website navigation page with 'Case studies' and 'Technical references' sections; a PDF document titled 'Safety Data Sheet Solstice® ze (101123400-en)'; a 'Technical data sheet Solstice ze (79 K)'; and the cover of 'Climalife Contact #10' magazine, which features the headline 'A warm reception for heat transfer fluids!' and lists various articles and products.

Case studies, technical data sheets

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The website provides access to a wealth of additional information, take a look, it's all free!

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- descriptive technical data sheets
- material safety data sheets
- case studies
- etc.

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