



Cleaning

## FACILISOLV®



Non-contractual photo.

### INTRODUCTION

**FACILISOLV®** is a cleaning solvent which has no effect on the ozone layer and is designed for the internal cleaning of refrigeration and air conditioning refrigerant circuits in industrial use.

Developed by the Climalife Dehon Group, it is an efficient solvent for all circuits using halogen fluids and standard refrigeration oils.

**FACILISOLV®** is quick and easy to use, just like R-11 or R-141b, using a circulation pump.

### PHYSICO-CHEMICAL PROPERTIES

|   |                         |
|---|-------------------------|
| Appearance.....                                     | colourless liquid       |
| Absolute initial boiling point under 1.013 bar..... | +43 °C                  |
| Density of liquid at +25°C.....                     | 1.26 kg/dm <sup>3</sup> |
| Absolute vapour pressure at +20°C.....              | 0.64 bar                |
| Liquid surface tension at +25°C.....                | 13.6 mNm                |
| Dynamic viscosity at +25°C.....                     | <0.04 m/Pa.s            |
| Kauri Butanol value.....                            | >100                    |
| ODP.....  | None                    |
| GWP.....  | 320                     |
| Flash point.....                                    | None                    |

### USE

The correct functioning of a refrigeration installation is connected to the perfect cleanliness of the circuit internally.

**FACILISOLV®** eliminates impurities from halogenated fluid circuits which have been polluted during assembly operations or following an incident. It can also be used for NH<sub>3</sub> circuits, after draining and neutralising the NH<sub>3</sub> (refer to the NH<sub>3</sub> circuit cleaning procedure)



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There are multiple possible causes of impurities within these circuits. The following are just some of the more common causes:

- Electrical engine "burn-out" within airtight units or accessible airtight units.
- The presence of humidity within the circuits.
- Lubricant deterioration.
- Acid formation.
- Oxide formation on soldering and welding points if not performed under inert gas.

Cleaning requirements:

- Cleaning is occasionally required before activating a new installation,
- Cleaning must be performed after pollution or a break which has contaminated the circuit of an installation in use

### FACILISOLV® COMPATIBILITY WITH MATERIALS AND ELASTOMERS

FACILISOLV® is highly compatible with a wide range of metals, plastic and elastomers.

Note: FACILISOLV® is absorbed by fluoroplastics and fluoroelastomers in the event of prolonged exposure.

| Metals              | Plastics     | Elastomers       |
|---------------------|--------------|------------------|
| Aluminium – Copper  | Epoxy resins | Butyl rubber *   |
| Carbon steel        | Polyethylene | Natural rubber * |
| 302 stainless steel | Polyester    | Polysulphide     |
| Brass               | Nylon        | EPDM             |
| Molybdenum          | PTFE         | Chlorosulphonate |
| Tantalum            | Polyester    | polyethylene     |
| Tungsten            |              | Buna-S*          |
| C172 Cu/Be alloy    |              |                  |
| AZ32B Mg alloy      |              |                  |

\*slight swelling

Compatibility tested after exposure at boiling temperature for one hour.

Butyl rubber is preferred for prolonged exposure > 1 month.

Exception: swelling in the cases of PTFE and siliconised rubber.

### FACILISOLV® IMPLEMENTATION

FACILISOLV® is packaged in 35 Kg drums (approx. 27.8 litres) and 249.5 Kg drums (approx. 198 litres) at 25°C. It must be stored in its packaging and remain closed in compliance with the specifications stipulated on the safety data sheet.

FACILISOLV® is provided with 30 or 220 litre recovery drums to be returned to us with the used product.

A full and reusable set of accessories can be provided for FACILISOLV® recovery, comprised of:

- 2 special stoppers: one with a Ø of ¾" and one with a Ø of 2" with a plunger tube to control the filling of the recovery drum,
- a crown measuring 25 m made out of flexible PVC hose, Ø 10X14 to be cut to the desired length for junctions,
- two tightening bands for the flexible PVC hose, Ø 10 X14.

This first, inseparable set can be ordered separately at a later date.

In the event of water in the circuit, the latter must be removed via a nitrogen purge prior to cleaning with FACILISOLV®.



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### CLEANING PROCEDURE FOR AN INSTALLATION (excluding NH<sub>3</sub>)

Before cleaning, check the correct assembly and fitting of the different stoppers and bands.

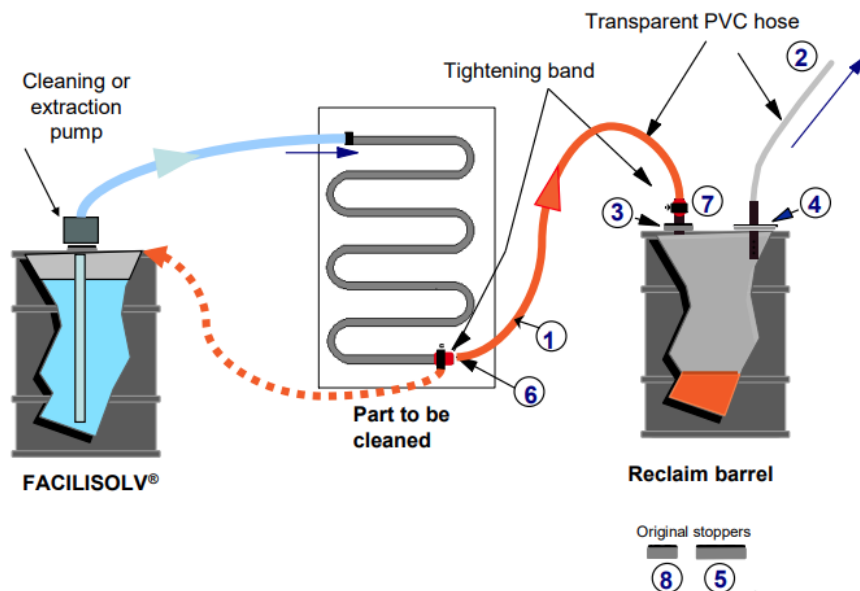
The circulation operation must be performed using a liquid solvent pump for improved impurity elimination.

According to the level of pollution, one or several cycles of **FACILISOLV®** can be performed within the element being cleaned.

The volume to be implemented is equal to the largest volume capacity of the installation being cleaned.

The **FACILISOLV®** product recovered in the drums designed for this purpose **must be returned to the Climalife Dehon Group**.

### HOW TO USE FACILISOLV®



- Circulate the **FACILISOLV®** product originating from the new product drum in the element being cleaned via a suitable pump.
- In order to perform several successive cycles of **FACILISOLV®**, attach a suitable length of flexible PVC hose from the outlet of the element being cleaned to the **FACILISOLV®** drum.
- After one or several cycles have been performed, recover the **FACILISOLV®** product. Connect the outlet of the cleaned element to the end of the special stopper<sup>③</sup> using a flexible PVC hose<sup>①</sup>. Tighten the two ends of the PVC hose with the tightening bands<sup>⑥</sup> and <sup>⑦</sup>.
- Place and screw the special stopper, Ø 2" <sup>④</sup> in the place of the original stopper <sup>⑤</sup>.



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- Connect a length of flexible PVC hose ② to this special stopper ④ so as to remove any possible **FACILISOLV®** vapours to the outside of the premises and into the outside air.
- Stop the circulation when the **FACILISOLV®** product leaving the element being cleaned is translucent.
- Purge the system using anhydrous nitrogen without exceeding 10 bars to recover the liquid **FACILISOLV®** present in the circuit.
- At the end of the liquid draining operation, limit the nitrogen pressure so as not to deform the recovery drum and so as to empty the circuit and to ensure having removed all of the **FACILISOLV®** product.
- After having checked that the drums have not been overfilled, close them using the original stoppers.

**THE RECOVERY DRUM MUST NEVER BE COMPLETELY FILLED.**

The level of liquid must not exceed the end of the plunger tube of the special stopper,  $\varnothing$  2" ④.

**CLEANING PROCEDURE FOR AN NH<sub>3</sub> INSTALLATION**

Before the cleaning operation, neutralise the ammonia contained in the circuit.

- Recover the ammonia by emptying the installation according to good practices.
- Rinse the refrigeration circuit with clear water until until the pH of the water is close to 7.
- Clean and degrease the circuit using **FACILISOLV®** (see diagram and procedure, page 3).
- Perform the modifications required for the correct functioning of the installation before reloading.

Note: for a circuit with a high level of dirt or corrosion, clean the circuit using Desoxyclean after neutralising the ammonia, then neutralise with Dispersant D in compliance with their implementation recommendations before cleaning with **FACILISOLV®**.

**FACILISOLV® RECOVERY IS OBLIGATORY**

The company returning **FACILISOLV®** must provide a waste tracking slip. The waste code for **FACILISOLV®** is 140602.

The recovery drums must be identified with the appropriate labelling and **returned to the Climalife Dehon group**. Contact your local Climalife subsidiary or dealer.



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**QUANTITY OF FACILISOLV® TO BE IMPLEMENTED**

Please find below the approximate quantities of **FACILISOLV®** contained at 25°C in 1 linear metre of:

- 1/4" tube ..... approximately 20 g
- 3/8" tube ..... approximately 60 g
- 1/2" tube ..... approximately 115 g
- 5/8" tube ..... approximately 190 g
- 3/4" tube ..... approximately 290 g
- 1"1/8 tube ..... approximately 700 g
- 1"3/8 tube ..... approximately 1125 g
- 2"1/8 tube ..... approximately 2514 g
- 2"5/8 tube ..... approximately 3880 g
- 3"1/8 tube ..... approximately 5540 g
- 3"5/8 tube ..... approximately 7500 g
- 4"1/8 tube ..... approximately 9730 g

**PRECAUTIONS FOR USE**

**The product must be fully drained before the installation is emptied.**

Never clean the inside of a compressor with **FACILISOLV®**. The control components must always be cleaned separately and apart from the circulation of **FACILISOLV®** within the circuit. Each element of the refrigeration circuit should be cleaned separately.

Please read the **FACILISOLV®** safety data sheet carefully before use. All appropriate safety measures should be taken. For any kind of handling of or exposure to the product, individual protection should be taken as recommended by the safety data sheet.

In liquid state, **FACILISOLV®** is considered as non-flammable without any flash point. Vapours from the **FACILISOLV®** mixture have a range of flammability when mixed with the air, however in an open space, these vapours, although combustible, do not sustain or spread combustion. This fluid must not be pressurised with compressed air or oxygen.

Usual implementation precautions must be complied with and it is entirely forbidden to weld, solder, cut, grind or search for a possible leak using a naked flame for a circuit containing **FACILISOLV®**. The use of electric arcs or any other source of power inflammation is strictly forbidden.

Because **FACILISOLV®** vapours are heavier than air, workplaces must be ventilated and evacuations provided for in low lying parts of the premises. This fluid must not be used in premises below ground level without taking the necessary provisions.

Do not use ventilation ducts to evacuate **FACILISOLV®** vapours

*The information contained in this product sheet is the result of our studies and experience. It is provided in good faith, but should not, under any circumstance, 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.*



For more information, visit our website : [climalife.com/contact\\_us](http://climalife.com/contact_us)



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