

COOLELF PLUS -37°C



COOLELF PLUS -37°C is a cooling liquid based on **GLACELF PLUS**.

GLACELF PLUS is a «**long life**» antifreeze based on monoethylene glycol and **mineral corrosion inhibitors** (silicates); a technology that has proven its reliability in cooling and heat transfer systems. It also contains an organic inhibitor, it is a semi organic technology.

COOLELF PLUS -37°C can be used in all cooling systems of combustion engines in cars, vans, trucks, buses, constructing machines and agricultural tractors.

COOLELF PLUS -37°C contains a **bittering agent** to make it undrinkable and so preserves the health of children and users.

COOLELF PLUS -37°C is the semi mineral product of our cooling liquid range with mineral inhibitors.

APPLICATIONS

Protection : -37°C

● **COOLELF PLUS -37°C** is a **permanent coolant fluid** that can be used throughout the year: it provides effective protection against engine freezing or overheating.

● **COOLELF PLUS -37°C** is ready to use and is already mixed with demineralised water, the quality of which:

- eliminates any risk of scaling that can cause engine overheating by degrading the heat transfer properties or by blocking circuits,
- ensures practically zero electrical conductivity, reducing the causes of electrolytic corrosion.

It is recommended that the coolant fluid should be replaced **every two years**.

Long life

● **COOLELF PLUS -37°C** protects:

- during at least **250 000 km** (3000 hours) in cooling systems of commercial vehicles,
- during at least **100.000 km** (800 hours) in cooling systems of passenger cars.

It is recommended to drain the cooling liquid after this mileage or every **3 years** (whatever occurs first).

SPECIFICATIONS

AFNOR NFR 15-601
ASTM D 3306
ASTM D4656

● The antifreeze used in **COOLELF PLUS -37°C**, **GLACELF PLUS**, meets the **MOST IMPORTANT international specifications** concerning antifreeze, and the tenders of the important engine manufacturers.



**ASTM D4985
BS 6580**

**GM 1825M
TL 774 B/C
MAN 324**

GLACELF PLUS has been approved by the following manufacturers:

**FORD
MAN
VOLKSWAGEN
PORSCHE
BMW**

● **COOLELF PLUS -37°C meets the requirements of the following manufacturers:**

**ROVER
CHRYSLER EUROP
JAGUAR
OPEL-GM
SEAT
SKODA
AUDI
SAAB**

CUSTOMER BENEFITS

The role of the cooling liquid

● *In a petrol or diesel engine, some 30 to 40% of the heat produced in combustion is not converted into notion power and has to be dissipated. An engine's cooling system must be capable of removing this excess heat together with that due to friction of the moving parts. The coolant fluid cools the different parts of the engine by heat transfer and then gives up heat in the radiator. Running an engine without coolant for only a few minutes is sufficient to cause piston seizing and cracks in the cylinder head owing to heat not being removed.*

Corrosion protection

● **COOLELF PLUS -37°C offers an adequate solution against corrosion problems of all the materials in the cooling system**

Laboratory test :
250 ml antifreeze*
500 ml corrosive water
336 hours
6 l/h air
88°C

Table 1 : ASTM D1384. Glassware corrosion test

	Weight change in mg/test specimen					
	Brass	Copper	Solder	Steel	Cast iron	Aluminium
GM 1825M (max)	10	10	20	10	10	20
ASTM D4985 (max)	10	10	30	10	10	30
ASTM D3306 (max)	10	10	30	10	10	30
GLACELF PLUS*	-2	-2	+3	+1	+1	0

Protection of the aluminium water pump against cavitation corrosion and erosion

Optimised physical-chemical characteristics

● These severe tests prove the excellent performance of **COOLELF PLUS -37°C**.

Air or gas penetration into the cooling system has a negative influence on cavitation problems. Furthermore, the presence of oxygen in the system affects the action of the corrosion inhibitors.

● **COOLELF PLUS -37°C** guarantees an adequate protection against cavitation, leading to cylinder wall penetration and water pump damage. In the very severe **ASTM D 2809** test on an aluminium water pump – a test of corrosion-erosion caused by cavitation – **GLACELF PLUS** obtained a **score of 8/10**, required by the ASTM D3306 and D4985 specifications.

● The additives in **COOLELF PLUS -37°C** grant to the cooling liquid

- **alkalinity reserve** (in order to neutralise the acids, originating from the combustion),
- good resistance against foaming (by breaking the eventual foam's stability) and
- good compatibility towards hard water (**max. 40° French hardness**).

● **COOLELF PLUS -37°C** is perfectly compatible with seals and paints.

Cooling liquids on basis of monoethylene glycol are chemical wastes that should be destroyed by specialised companies

CHARACTERISTICS

The typical characteristics mentioned represent mean values

COOLELF PLUS -37°C		
Colour		Blue green
Density at 15 °C	ASTM D1122	1.079
PH	ASTM D1287	8.3
Alkalinity reserve (pH 5.5)	ASTM D 1121	80ml HCl 0.1N
Temperature at which the first ice crystals occur	ASTM D1177	-37°C