



GLACELF PLUS

Coolant to dilute • Hybrid



DESCRIPTION

GLACELF PLUS is a “long life” coolant based upon monoethylene glycol and inorganic corrosion inhibitors (silicates), It contains also an organic inhibitor.

When **GLACELF PLUS** antifreeze is mixed with an appropriate quantity of water, it becomes a coolant recommended for all cooling systems of combustion engines in cars, vans, trucks, buses, constructing machines and agricultural tractors.

GLACELF PLUS is a semi-organic product in our antifreeze range.



SPECIFICATIONS

GLACELF PLUS meets the *international specifications* for antifreezes:

- AFNOR NFR 15-601
- ASTM D3306
- ASTM D4656
- ASTM D4985
- BS 6580

GLACELF PLUS is *officially approved* by the following manufacturers:

- VW TL-774 C (G 11)
- AUDI TL-774 C (G 11)
- SEAT TL-774 C (G 11)
- SKODA TL-774 C (G 11)
- BMW GS 94000
- PORSCHE TL-774 C (G 11)
- FIAT CHRYSLER MS-7170
- GM-OPEL GME L1301

GLACELF PLUS *meets the requirements* of:

- FORD
- MB 325.0
- FIAT-LANCIA 9.55523
- LADA TTM VAZ 1.97.717-97
- CUMMINS 85T8-2
- IVECO standard 18-1830
- MAN 324 Type NF
- MTU MTL 5048
- PERKINS
- VOLVO 128 6083 /002

CHARACTERISTICS

COLOUR	-	BLUE GREEN
SPECIFIC GRAVITY AT 15 °C	ASTM D1122	1.125
PH, 50% DILUTION BY VOLUME	ASTM D1287	8.4
ALCALINITY RESERVE (PH 5.5)	GFC PR L-110-03	16 ML HCl 0.1N
TEMPERATURE AT WHICH CRYSTAL APPEAR, 50% DILUTION BY VOLUME	ASTM D1177	-38°C
BOILING TEMPERATURE (UNDILUTED)	ASTM D1120	174°C

The typical characteristics mentioned represent mean values.

TOTAL LUBRIFIANTS

Immeuble Spazio
562, avenue du Parc de l'île
92029 Nanterre cedex
France

GLACELF PLUS
Sheet updated: 11/15



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APPLICATIONS

DILUTION IN DEMINERALISED OR SOFTENED WATER (MINIMUM 33%)

GLACELF PLUS is diluted in demineralised water to form a permanent coolant that can be used throughout the year.

To obtain a coolant perfectly mixed, it is necessary to mix mechanically the antifreeze with the water.

Protection against freezing depends upon the proportions of **GLACELF PLUS** in the water.

% volume of GLACELF PLUS	33	40	50
Freezing Point, °C (temperature at which first crystals appear)	-20	-26	-37
Boiling Point, °C	105	107	110

These are mean values provided for indicative purposes only

It is recommended that at least 33% of the final solution should be **GLACELF PLUS**. Do not use in proportions above 70%.

EXTENDED LIFETIME

Recommended oil change interval:

- at least **250 000 km** (3000 hours) in cooling systems of commercial vehicles
- 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).

CUSTOMER BENEFITS

LONG-TERM PROTECTION AGAINST CORROSION OF METALS AND ALL MATERIALS

GLACELF PLUS provides an effective solution to the problems of corrosion affecting all materials used in cooling circuits.

The additives in **GLACELF PLUS** give the coolant:

- + A reserve of alkalinity (to neutralise the acids resulting from the combustion gases)
- + Resistance to foaming
- + Compatibility with hard water (maximum 40°F).

The coolant fluids obtained by diluting **GLACELF PLUS** are also inert to elastomeric seals and paints.

EXCELLENT QUALITY RATIO

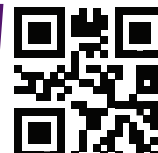
HSE

All antifreezes and coolants based upon monoethylene glycol are regarded as special industrial wastes and must be disposed of in approved centres for environmental reasons.

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PERFORMANCES

■ ASTM D1384 : GLASSWARE CORROSION TEST (336H / 88°C / 33%VOL)

	WEIGHT LOSS (MG/COUPON)					
	copper	solder	brass	steel	cast iron	aluminium
ASTM D3306 LIMITS	10	30	10	10	10	30
GLACELF PLUS	2	-3	2	1	1	0.0

■ ASTM D4340: ALUMINIUM HEAT REJECTION TEST (1 WEEK/ 135°C)

	WEIGHT LOSS (MG/CM ² /WEEK)	
ASTM D3306 LIMITS	1.0	
GLACELF PLUS	< 0.2	

■ ASTM D2570: SIMULATED SERVICE TEST (48H / 25%VOL)

	WEIGHT LOSS (MG/COUPON)					
	copper	solder	brass	steel	cast iron	aluminium
ASTM D3306 LIMITS	20	60	20	20	20	60
GLACELF PLUS	7	-1	6	-1	-3	1.0

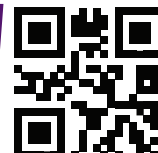
■ GM-OPEL: HOT FINGER TEST

	WEIGHT LOSS (MG/COUPON)					
	copper	solder	brass	steel	cast iron	aluminium
44% solution						
GM LIMITS	10	30	10	10	10	30
GLACELF PLUS	10	20	10	10	10	20
25% solution						
GM LIMITS	10	20	10	10	10	20
GLACELF PLUS	2	-3	2	-1	-1	0

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