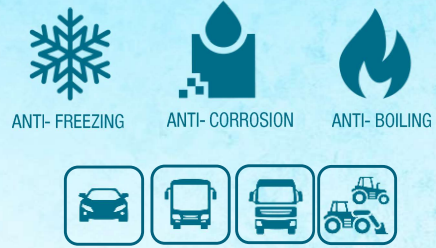


Glacelf Plus Evo

Coolant Concentrate • SI-P-OAT



DESCRIPTION

Glacelf Plus Evo is a “very-long-life” next generation premium engine antifreeze based on monoethylene glycol and containing cutting-edge silicate inhibitor technology with phosphate supported by a robust organic backbone (OAT - Organic Additive Technology).

Glacelf Plus Evo is a versatile and multifunctional coolant designed to cope with the most extreme engine conditions for Internal Combustion Engines and Battery Electric Vehicles by providing hard water and oxidation stability.

Glacelf Plus Evo is free from nitrites, borates, amines and 2-ethylhexanoic acid (2-EHA).

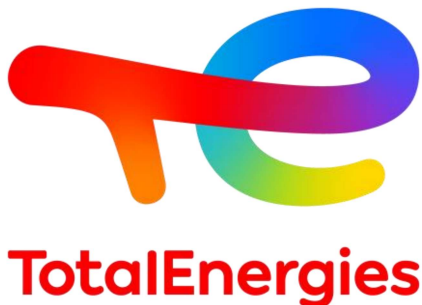
SPECIFICATIONS

Glacelf Plus Evo meets the international standards on coolants:

- | | |
|------------------|-------------------|
| • ASTM D3306-20 | • BS 6580.2010 |
| • JIS K2234-2018 | • GB 29743-2013 |
| • FVV R 530:2005 | • Önorm V5123 |
| • NF R15-601-20 | • UNE 26-361-88/1 |

Glacelf Plus Evo meets the requirements of:

- | | | |
|---------------------------------------|-----------------------------|---------------------|
| • BMW LC 87, LC 97, LC 18 | • Opel / Vauxhall GME L1301 | • MWM |
| • VW TL 774-C, D, F, G, J, L | • Toyota | • Jenbacher |
| (G11, G12, G12+, G12++, G13, G12 evo) | • MB 325.5 | • MTU MTL 5048 |
| • Tesla | • Deutz DQC CA-14 | • Case JIC-501 |
| • Alfa Romeo / Fiat / Lancia 9,55523 | • MAN 324NF / 324 SI-OAT | • Ford ESD-M97B49-A |
| • Chrysler MS 7170 | • Iveco 18-1830 | |
| • Volvo Cars 128 6083/002 | • Cummins 85T8-2 | |



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92029 Nanterre cedex France

Glacelf Plus Evo | Sheet updated: 02/23

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CHARACTERISTICS

COLOUR	-	LIGHT RED
Density at 20°C	ASTMD5931	1.120
PH	ASTMD1287	8.5
Alkalinity reserve (to inflection point)	ASTMD1121	33.75 ml HCl 0.1N
Temperature at which the first ice crystals occur (50% vol.)	ASTMD1177	<-36°C
Boiling Temperature	ASTMD1120	163°C

The typical characteristics mentioned represent mean values

APPLICATION

PROTECTION ALL YEAR ROUND

Glacelf Plus Evo ensures year-round frost and corrosion protection.

The coolant can be used in a wide range of drivetrains. It is especially designed for use in modern Internal Combustion Engines (ICE), Hybrids and indirect cooling systems of Battery Electric Vehicles (BEV).

CONCENTRATED PRODUCT

Glacelf Plus Evo antifreeze is recommended to be diluted with deionised or distilled water to prepare the ready-to-use dilutions for optimal performance and controlled quality. It is recommended to use at least 35vol% of Glacelf Plus Evo in the coolant solution. This provides an initial freezing point of -20°C. Mixtures with more than 70 vol% Glacelf Plus Evo in water are not recommended.

MULTI-MATERIAL COMPATIBILITY

Glacelf Plus Evo can be used for cooling systems made of iron, steel, aluminium as well as copper alloy. It is compatible with rubbers and engineering (thermo)plastics.

LIFETIME

Recommended coolant change interval*:

- 500 000 km/4 years when used in trucks
- 250 000 km/5 years when used in cars.

RETRO-APPLICABILITY

Glacelf Plus Evo is compatible with most other coolants based on ethylene glycol such as (former) Si-OAT coolant generations. Exclusive use of product is however recommended for optimum performance.

% Volume of Glacelf Plus Evo	35%	40%	50%
Freezing Protection	-20°C	-25°C	-36.4°C
Boiling Point	106°C min.	107°C min.	109°C min.

*It is recommended to refer to the vehicle's maintenance manual.



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CUSTOMER BENEFITS

VERY LONG-TERM PROTECTION AGAINST METALS CORROSION

Organic technology ensures a long-term action to offer maximum protection against any type of corrosion, erosion and cavitation, even at high temperatures.

ADVANCED PERFORMANCE FEATURES

- Thermal oxidative stability
- Controlled Atmosphere Brazing (CAB) flux compatibility
- State-of-the-art silicate stabilisation
- Outstanding aluminium passivation
- Excellent hard water stability

WIDE COMPATIBILITY AND REDUCED COMPLEXITY

ENVIRONMENT

Prevents the formation of gels or deposits in the cooling system.

Replaces/compatible with former Si-OAT and hybrid Si-OAT generation coolants.

Carefully selected additives to reduce environmental impact

HSE

Any antifreeze made with monoethylene glycol is considered to be special industrial waste, and, to respect the environment, must be disposed of in certified centres.



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PERFORMANCES

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

	WEIGHT LOSS(MG/COUPON) ¹					
	Brass	Copper	Solder	Steel	Cast Iron	Aluminium
ASTM D3306 LIMITS	10	10	10	10	10	10
Glacelf Plus Evo	0	0	1	0	0	0

¹ Weight loss AFTER chemical cleaning according to ASTM procedure. Weight gain is indicated by a (-) sign.

ASTM D4340: ALUMINIUM HEAT REJECTION TEST (25%VOL)

	WEIGHT LOSS(MG/CM²/WEEK) ¹
ASTM D3306 LIMITS	1.0
Glacelf Plus Evo	-0.1

¹ Weight loss AFTER chemical cleaning according to ASTM procedure. Weight gain is indicated by a (-) sign.

ASTM D2570: SIMULATED SERVICE CORROSION TEST

	WEIGHT LOSS(MG/COUPON) ¹					
	Brass	Copper	Solder	Steel	Cast Iron	Aluminium
ASTM D3306 LIMITS	20	20	60	20	20	60
Glacelf Plus Evo	2	3	20	0	0	-2

¹ Weight loss AFTER chemical cleaning according to ASTM procedure. Weight gain is indicated by a (-) sign.

ASTM D2809: WATER PUMP CAVITATION TEST

	PUMP RATING*
ASTM D3306 Requirement	> / = 8
Glacelf Plus Evo	8

*ASTM D3306 requires a pump rating of 8 or higher on a scale of 10.

pH	Glacelf Plus Evo
Before test	8.01
After test	7.60

Glacelf Plus Evo trade name on tables represent either concentrated antifreeze or different dilutions of the concentrated product as per official test parameters.



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PERFORMANCES

JIS K2234-2018 Circulating Corrosion Properties (88°C/1000 Hrs)

	WEIGHT CHANGE in MG/COUPON ¹					
	Brass	Copper	Solder	Steel	Cast Iron	Aluminium
JIS K2234-2018	0.30	0.30	0.60	0.30	0.30	0.60
Glacelf Plus Evo (30% vol.)	0.03	0.03	-0.07	0.00	0.22	0.04

¹ Weight loss AFTER chemical cleaning according to ASTM procedure. Weight gain is indicated by a (-) sign.

pH	JIS K2234-2018	Glacelf Plus Evo
After test	6.55 to 11	8.06
Change	+/- 1.0	-0.01

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