



TOTAL GLACELF SI-OAT

Concentrate to be diluted • SI-O.A.T.



DESCRIPTION

TOTAL GLACELF SI-OAT is a "very long life" antifreeze made of monoethylene glycol.

TOTAL GLACELF SI-OAT has fast, effective protective properties. It provides a high level of protection against damage caused by freezing, cavitation, corrosion and overheating.

TOTAL GLACELF SI-OAT antifreeze must be mixed with a suitable quantity and quality of water to be used as a coolant. This product is especially recommended for certain ICEs both for light vehicles (MB and VW group Euro 6 engines), heavy vehicles (MB, MAN, Scania and Cummins EURO 6 engines), public works machinery (Liebherr Euro 6 engines) and agricultural tractors (MTU Claas engines).

SPECIFICATIONS

TOTAL GLACELF SI-OAT meets the *international standards* for antifreezes products:

- AFNOR NF R 15-601
- ASTM D 3306
- ASTM D 4985
- BS 6580: 2010
- SAE J1034
- CUNA NC 956-16

TOTAL GLACELF SI-OAT is *stringently approved* by the following manufacturers:

- VW / AUDI / SEAT / SKODA
- LAMBORGHINI / BENTLEY / PORSCHE
- BUGATTI: VW TL 774-G
- DAIMLER / MERCEDES-BENZ
- MB-APPROVAL 325.5 and 325.6
- MAN 324 Type Si-OAT
- CUMMINS CES 14603

TOTAL GLACELF SI-OAT *meets the requirement level* of the following manufacturers:

- SCANIA TB 1451

CHARACTERISTICS

APPEARANCE	VISUAL		CLEAR LIQUID
COLOUR	VISUAL		PINK
DENSITY AT 20°C	ASTM D1122		1.125
PH VALUE AT 20°C	ASTM D1287		8.4
REFRACTIVE INDEX AT 20°C	ASTM D1218		1.4331
ALKALINITY RESERVE	ASTM D1121	mL HCl 0.1N	9.7

The typical characteristics mentioned represent mean values

TOTAL LUBRIFIANTS

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

TOTAL GLACELF SI-OAT

Sheet updated: 01/16



This coolant used in accordance with our recommendations and for the application for which it is intended does not represent a special hazard. A safety data file conforming to the requirements of current EC legislation is available from your local trade consultant.



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APPLICATIONS

MIXING

We strongly advise against mixing **TOTAL GLACELF SI-OAT** with any other antifreeze technologies. If the manufacturer permits SI-OAT technology, any changes in technology must take place further to rinsing the whole cooling system.

DILUTION WITH DEMINERALISED WATER

TOTAL GLACELF SI-OAT, when diluted in demineralised water, is a coolant that can be used year round. It is essential to mechanically mix the antifreeze product with the dilution water to guarantee a consistent mixture. Protection against freezing depends on the proportion of **TOTAL GLACELF SI-OAT** in the water.

33% MINIMUM

It is recommended that a 33% volume of **TOTAL GLACELF SI-OAT** be used in the final solution, and a maximum volume of 60%.

Concentration of GLACELF SI-OAT	Methods	33%	40%	50%
Freezing point	ASTM D1177	-20°C	-26°C	-37°C
Boiling temperature	ASTM D1120	105°C	107°C	110°C

LONGER SERVICE LIFE

Recommended oil change interval:

- **Professional: from 3 to 5 years**, depending on the manufacturer's recommendations (refer to the vehicle's maintenance manual)
- **Light vehicles: up to 250,000 km**, depending on the manufacturer's recommendations (refer to the vehicle's maintenance manual).

RETRO-APPLICABILITY

TOTAL GLACELF SI-OAT has been specifically designed to meet the most demanding mechanics of certain EURO 6 engines in various business areas, for both professionals and individuals.

Unless there are indications to the contrary from the manufacturer (see vehicle maintenance manual), the product is retro-applicable for generations prior to Euro 6, taking the necessary precautions, i.e. mandatory rinsing before the transition to Si-OAT technology.

TOTAL GLACELF SI-OAT is stringently MAN 324 approved (SI-OAT type) and can be used on vehicles requiring MAN 324 type NF and type SNF approvals.

TOTAL GLACELF SI-OAT is stringently VW TL 774-G approved, and can be used on vehicles requiring VW TL 774-C, 774-D, 774-F, and 774-J approvals

TOTAL GLACELF SI-OAT is stringently MB 325.5 and 325.6 approved and can be used on vehicles requiring MB 325.0 and MB 325.3 approvals.

TOTAL GLACELF SI-OAT is not recommended for OM 300 and 400 engines on MB Trucks (non-exhaustive list).

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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CUSTOMER BENEFITS

EXCELLENT PROTECTION AGAINST METAL CORROSION, CAVITATION AND THE FORMATION OF DEPOSITS

TOTAL GLACELF SI-OAT protects against all forms of corrosion, overheating and freezing. Protects aluminium water pumps against corrosion, erosion and cavitation, prevents the formation of deposits and leaves surfaces clean.

PERFORMANCES

VW TL 774-G

	WEIGHT LOSS (MG/COUPON)					
	Copper	Solder	Brass	Steel	Cast iron	Aluminium
TOTAL GLACELF SI-OAT	0.1	0.1	-0.4	-0.1	-0.1	-0.4
VW TL 774-G LIMIT	3	3	3	3	3	2

DIN 51 360-2

	CORROSION INDEX	
	20 vol% solution	40 vol% solution
VW TL 774-G LIMIT	4	2
TOTAL GLACELF SI-OAT	4	2

FOAMING CHARACTERISTICS (33% VOL DILUTION)

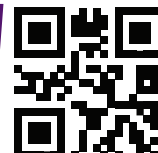
	Volume (ml)	Break time (s)
TOTAL GLACELF SI-OAT VALUES	5	3
VW TL 774-G LIMITS	20	5
ASTM D1881 (PART OF ASTM D3306)	Max 150 ml	Max 5 sec

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