



# 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

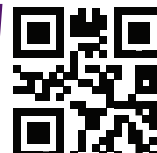
The typical characteristics mentioned represent mean values

### 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
<b>TOTAL GLACELF SI-OAT</b>	0.1	0.1	-0.4	-0.1	-0.1	-0.4
<b>VW TL 774-G LIMIT</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>

### DIN 51 360-2

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

### FOAMING CHARACTERISTICS (33% VOL DILUTION)

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

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