
GLACELF MDX

GLACELF MDX is a “**long life**” antifreeze based upon monoethylene glycol and contains no amines, nitrites or phosphates.

When GLACELF MDX antifreeze is mixed with an appropriate quantity of water it becomes a coolant fluid recommended for all cooling circuits in internal combustion engines, especially **MTU** (all engines), **MB** (all engines, without limitation) and **MAN** systems.

In accordance with French Decree No. 95-326 of 20th March 1995 concerning the distribution of certain substances containing monoethylene glycol, GLACELF MDX contains **an additive to give it a bitter taste** as a guarantee against accidental ingestion by children or users.

GLACELF MDX figures as a “**speciality**” in our antifreeze range.

APPLICATIONS

Dilution in demineralised or softened water

GLACELF MDX is used diluted in demineralised water (< 8F) and forms a **permanent coolant fluid** that can be used throughout the year, providing effective protection against engine freezing or overheating.

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

Protection against freezing depends on the proportion of GLACELF MDX in the water.

Minimum 33%
Maximum 70%

| % volume of GLACELF MDX | 33 | 40 | 50 | 68 |
|---|-----|-----|-----|-----|
| Temperature at which crystals first appear, °C (NFT 78 102) | -20 | -26 | -37 | -69 |

These are mean values provided for indicative purposes only

It is recommended that the final solution should contain at least 33% by volume of GLACELF MDX.

Maximum protection against freezing is obtained at 68%.

Do not use concentrations above 70%

Lifetime

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



SPECIFICATIONS

**AFNOR NFR 15-601
BS 6580**

**MTL 5048
MAN 324
DC : MB page 325.0**

GLACELF MDX meets the principal international specifications for antifreezes, as well as those of major manufacturers.

GLACELF MDX is officially approved by the following manufacturers:

- **MTU, all engines**
- **MAN**
- **Daimler Chrysler, all engines**

GLACELF MDX is based upon an antifreeze the technology of which is recognised by the following manufacturers:

- **GM-OPEL**
- **VAN HOOL**
- **VOLVO**
- **BMW**
- **VW / AUDI / SEAT / SKODA**

BENEFITS TO THE CLIENT

**The function of a coolant
fluid**

In a petrol or diesel engine, some 30 to 40% of the heat produced in combustion are not converted into motive power and have 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.

**Protection against the
corrosion of metals,
especially aluminium**

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

GLACELF MDX performs well in the corrosion tests required by the specifications: hot plate and *in vitro* corrosion.

Protection of aluminium water pumps against corrosion and erosion due to cavitation

Air or gas can enter a circuit in various ways, and then exacerbates the phenomenon of cavitation; also the presence of oxygen in the circuit can affect the performance of corrosion inhibitors.

GLACELF MDX gives excellent protection against cavitation that can perforate liners and cause water pump faults.

In the very severe **ASTM D 2809** test on an aluminium water pump – a test of corrosion-erosion caused by cavitation – GLACELF MDX obtained a **score of 9/10**.

Optimised physical-chemical properties

The additives in GLACELF MDX give the coolant fluid a **reserve of alkalinity** (to neutralise the acids resulting from the combustion gases), **resistance to foaming** (mainly instability of the foam that might form) and **compatibility with hard water (maximum 40°F)**.

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

We remind you that antifreezes and coolant fluids containing monoethylene glycol should not be poured into the drains.

They are regarded as special industrial wastes (potentially hazardous to man and the environment) and should be destroyed by approved disposal centres.

CHARACTERISTICS

| TYPICAL CHARACTERISTICS | | GLACELF MDX | |
|--|------------|-------------|-------------|
| Colour | | Green | |
| Specific gravity at °C | ASTM D1122 | 1.124 | |
| pH (undiluted) | ASTM D1287 | 7.2 | |
| pH, 50% dilution by volume | ASTM D1287 | 8.1 | |
| Alkalinity reserve (pH 5.5) | ASTM D1121 | 14.6 | ml HCl 0.1N |
| Temperature at which crystals appear, 50% dilution by volume | ASTM D1177 | -37 | °C |
| Boiling point (undiluted) | ASTM D1120 | 174 | °C |

(Typical values given for indicative purposes only)

This coolant fluid, when used according to our recommendations and for the purpose for which it is designed, presents no particular hazard
GLACELF MDX



A safety data sheet complying with current legislation in the EC is available from your local commercial advisor

20/7/2001 cancels and replaces the issue of 11/04/2001