

# Maxol Antifreeze

## MEG Based Inorganic Additive Coolant Concentrate

Maxol Antifreeze is an engine coolant concentrate (antifreeze) based on mono ethylene glycol, containing no nitrites, amines or phosphates (NAP free). This product is suitable for both petrol and diesel engines, carefully chosen additives give the following properties in aqueous mixtures:

1. Thermal characteristics that permit effective engine cooling without boiling.
2. Anticorrosion protection of all metals and alloys used in the cooling system of modern vehicles.
3. Protection against frost, depending on the concentration chosen.
4. Compatibility with rubber and plastics used in the cooling system.
5. Excellent antifoaming characteristics.
6. Meets most International and European Standards.

Typical Properties C2230		
Appearance	Clear liquid, free from suspended matter	
Density at 20 °C	1.125 g/cm <sup>3</sup>	ASTM D 4052
pH (50% vol in Water)	8.9	ASTM D 1287
Freezing Point (50% vol in Water)	-37 °C	ASTM D 1177
Boiling Point	169°C	ASTM D 1120
Reserve Alkalinity (ml HCl N/10)	21.5 ml	ASTM D 1121
Water Content	3.8 % wt	ASTM D 1123
Foaming characteristics at 88 °C		ASTM D 1881
- Height	35ml	
- Breaktime	2 secs	

These are typical properties and do not constitute a specification, for specification limits please refer to the product specification. Product can be dyed to different colours upon request. Bittering agent denatonium benzoate can be added upon request.

## Performance

Maxol Antifreeze complies with the following quality standards:

- AFNOR NF R15-601 (France)
- AS 2108 (Australia)
- ASTM D3306 (USA)
- BS 6580 : 2010 (UK)
- CUNA NC 956-16 (Italy)
- ONORM V 5123 (Austria)
- C2230 successfully passes the FVV Heft R443 tests (Germany)
- SAE J 1034 (USA)
- UNE 26-361 (Spain)

These specifications as well as many years of practical experience in the field have demonstrated that Maxol Antifreeze engine coolant concentrate is suitable for use with all type of cars currently manufactured in Europe.

## Packages

Maxol Antifreeze is available in bulk, IBCs, drums and a packing service is available for a range of smaller packs.

## Compatibility

Although it is always recommended to use deionized or demineralized water to dilute antifreeze, Maxol Antifreeze is formulated to be able to cope with different water qualities and is compatible with hard water. Maxol Antifreeze is compatible with all types of plastics and rubbers used in engine coolant systems.

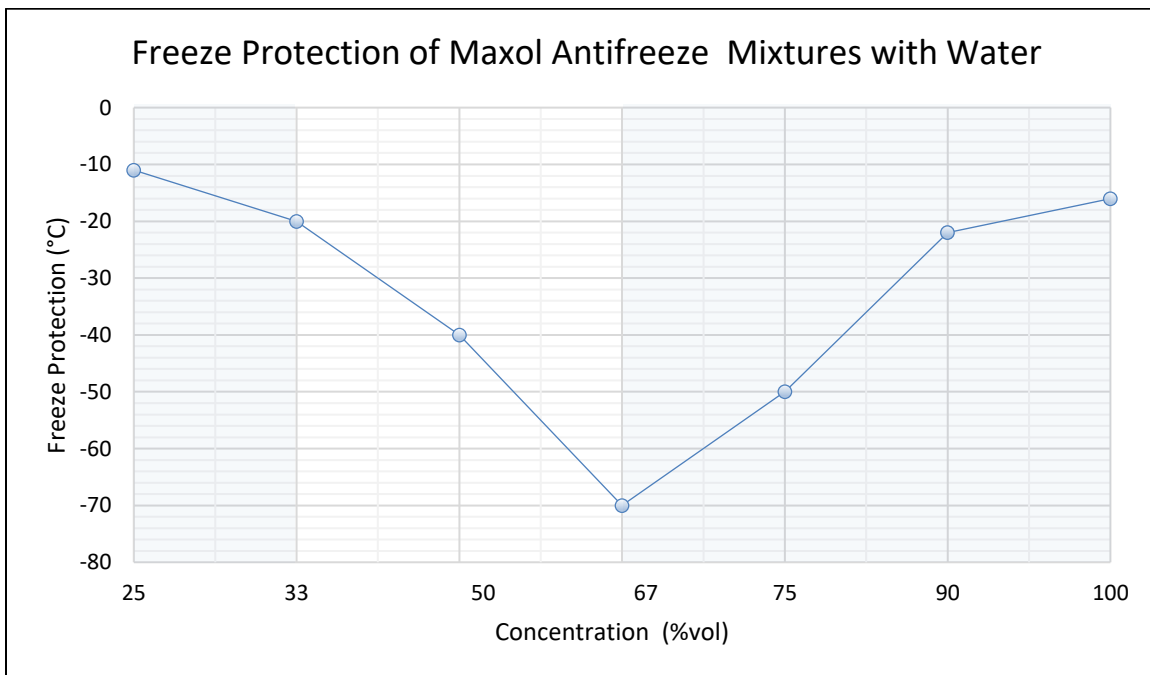
Maxol Antifreeze is fully miscible with other coolants and can be safely mixed with them. However, optimal performance and longevity of service can only be guaranteed by exclusive use of Maxol Antifreeze .

## Freeze Protection

Maxol Antifreeze is a concentrated product and should be diluted for use with good quality water. Solventis recommends that for optimum performance distilled or deionized water is used. The freeze protection afforded by the various dilutions is detailed in the table below:

Concentration (vol %)	H2O (vol %)	Freeze Protection °C
33	67	-20
50	50	-40
67	33	-70

In order to provide a satisfactory level of corrosion protection it is recommended to use at least 33% (1:2) volume of Maxol Antifreeze in the coolant solution. In line with most car manufacturers Solventis recommends a 50% (1:1) volume solution for optimum performance. For cold climates use 67% (2:1) volume, concentrations above 67% volume are not recommended and give no advantage.



Freezing Protection = Average of Freezing Point (ASTM D1177) and Pour Point (ASTM D97)

## Corrosion Protection

Protection from corrosion is the most important function of a coolant concentrate and is achieved by the inclusion of a well-balanced inhibitor package. In modern engines with the greater use of aluminium alloys and thinner section castings, avoidance of corrosion problems is critical. The corrosion products in engine cooling systems can circulate within the system causing fouling which leads to overheating problems.

The inhibitor package of Maxol Antifreeze is the result of very extensive testing which includes laboratory tests, simulated service tests, static engine test and field service trials. The tables below demonstrate the effective corrosion protection provided when tested against the industry standards such as ASTM D1384 (multi-metal corrosion in glassware) and ASTM D4340 (corrosion of cast aluminium alloys under heat-rejecting conditions).

### ASTM D1384

(Glassware Corrosion, mg per test piece)

Test Specimen	Monoethylene Glycol		ASTM D3306
	(33 % vol in H <sub>2</sub> O)	(33% vol in H <sub>2</sub> O)	
Copper	6.5	2	10
Solder	345	2	30
Brass	8	4	10
Steel	1474	2	10
Cast Iron	2472	1	10
Aluminium	30	3	30

### ASTM D4340

(Corrosion of Cast Aluminium Alloys under Heat-Rejecting Conditions)

Mass Change (mg/cm <sup>2</sup> /week)	ASTM D3306 Limit
-0.1	1.0

## **Storage and Handling**

Maxol Antifreeze has a shelf life of at minimum two years when stored in air tight containers at a maximum temperature of 30°C. Translucent containers should not be stored outside in direct sunlight, especially in warm climates. C2230 can be stored in mild steel, lacquer lined or HDPE containers. As with any glycol-based engine coolant the use of galvanized steel is not recommended for pipes or any other part of the storage/mixing installation.

Disposal of used or unused coolant must be carried out in accordance with local and national law, consult the material safety data sheet for further information.

## **Hazards and Safety**

As with all chemical products, awareness and control of any potential hazards is of high importance. Please consult the material safety data sheet which is available detailing the hazards associated with this product.

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## **Exclusion of Liability**

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