

# Mobil™

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# Mobil™

## Data Sheets



## Mobil Antifreeze MPG Concentrate

### Properties

Mobil Antifreeze Advanced MPG is an inhibited propylene glycol specialist fluid for use in HVAC (heating, ventilation, air conditioning) systems, industrial heat transfer systems and food industry chilling and freezing systems.



**Mobil Antifreeze MPG** is registered under the NSF non-food compound registration program under category code HT1 –Heat Transfer Fluids Incidental Food Contact. NSF Registration Number (HT1) 159500.

### Miscibility

It is **strongly recommended** that in areas of hard water **Mobil Antifreeze MPG** is diluted with demineralised or deionized water, as dissolved minerals with the water can react with the inhibitors and precipitate out of solution.

### Packaging

Mobil Antifreeze MPG is available in 20L, 215L, and 1000L.

### Storage Stability

Mobil Antifreeze MPG has a typical shelf life of 2 years when stored in originally closed, air-tight containers at temperatures of maximum 30°C. Do not use galvanized containers for storage.

### Safety

Safety must always come first for HVAC, industrial heat transfer, and chilling and refrigeration plants. Propylene Glycol on which Mobil Antifreeze MPG Concentrate is based is recognised for its low toxicity and may be handled safely by individuals maintaining heat transfer systems. All additives used in Mobil Antifreeze MPG Concentrate are food grade materials.

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### Chemical nature

Mono Propylene Glycol with corrosion inhibitors

### Appearance

Colourless

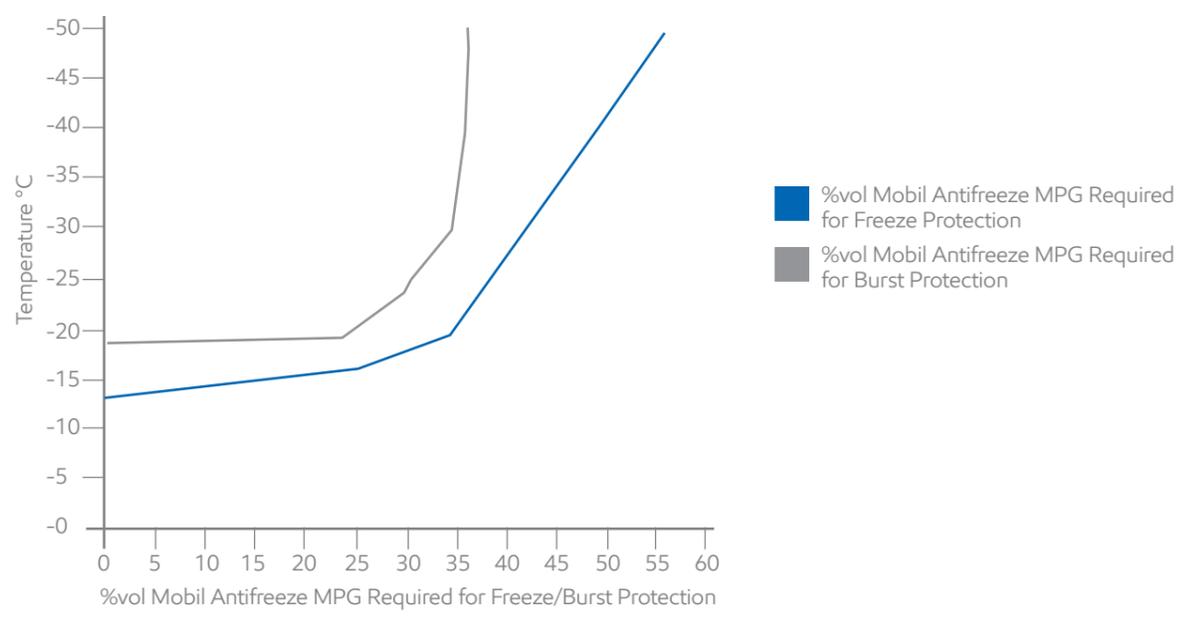
### Physical data

Density 20°C	1.048 – 1.055 g/cm <sup>3</sup>	ASTM D4052
pH value 50%	9-10	ASTM D 1287
Reserve alkalinity	8.5 – 12 ml	ASTM D 1121
Water content max.	5 %	ASTM D 1123

### Frost Protection

**Mobil Antifreeze MPG** solutions can protect systems down to a temperature of - 50°C preventing cracked pipes, broken valves and coils and other freeze damage associated with the use of plain water.

Adding **Mobil Antifreeze MPG** gives you system superior freeze protection.



**Note:** These figures are examples only. For a factor of safety, you should use the volume percentage appropriate for a temperature at least 2°C lower than the lowest temperature expected.



### Corrosion Protection

**Mobil Antifreeze MPG** Inhibited Propylene Glycol provides superior corrosion protection. Its inhibitor package minimises effects of corrosion by buffering the organic acids that form during normal system operation.

Plain water and uninhibited glycols are notorious for their corrosive attack on many metals – the table below shows the protection offered by **Mobil Antifreeze MPG**.

Metal	Plain Water	Uninhibited Propylene Glycol	Uninhibited Ethylene Glycol	Mobil Antifreeze MPG
Copper	49	8	6.5	4
Solder	137	420	345	1
Brass	13	10	8	4
Steel	700	1200	1471	1
Cast Iron	775	2430	2472	3
Aluminium	121	50	30	2

(Corrosion Weight Loss in mg / coupon via ASTM D1384)

The table above shows the relative corrosion rates of **Mobil Antifreeze MPG** heat transfer fluid compared to uninhibited ethylene and propylene glycol and plain water and demonstrates that **Mobil Antifreeze MPG** provides a high level of corrosion protection for nearly all metals of construction used in HVAC or industrial cooling systems.

#### Q. Why not use Automotive Antifreeze?

**A. Automotive Antifreeze can be worse than plain water and uninhibited Glycols for heat transfer systems. Many modern Antifreezes contain silicate based inhibitors which coat heat exchange surfaces reducing their efficiency and have a tendency to gel thus fouling systems and reducing the life of pump seals. Additionally, most Antifreezes are Ethylene Glycol based which is toxic by ingestion to humans and animals.**

### System Maintenance

To ensure optimum protection against freezing and corrosion the level concentration of **Mobil Antifreeze MPG** with the heat transfer medium should be maintained at the level specified by the system manufacturer or installer. This can be easily determined by checking the specific gravity (or refractive index) and reading off the concentration from the table below:

Specific Gravity 20°/20°	Refractive Index	% Vol Mobil Antifreeze MPG	Freezing Point°C
1.025	1.3596	25	-9
1.030	1.3659	30	-12
1.035	1.3707	35	-16
1.039	1.3771	40	-20
1.043	1.3824	45	-25
1.047	1.3873	50	-31
1.050	1.3926	55	-37
1.053	1.3975	60	-45