

Technical Data Sheet (TDS)

Shell Antifreeze LongLife Concentrate

Premium MEG Based OAT Coolant Concentrate



Shell Antifreeze LongLife Concentrate is an engine coolant concentrate (antifreeze) based on monoethylene glycol and organic additive technology. This product contains no nitrites, amines, phosphates, borates, silicates and no other mineral additives. **Shell Antifreeze LongLife Concentrate** is suitable for both petrol and diesel engines and gives the following advantages in aqueous mixtures:

1. Increased life time, allowing less frequent maintenance, thanks to the corrosion inhibitors which have a very low depletion rate.
2. Thermal characteristics that permit effective engine cooling without boiling.
3. Elimination of deposit problems caused by use of hard water.
4. Elimination of abrasives solids, which gives a better protection of the joints of the water pump.
5. Improved anticorrosion protection of all metals and alloys used in the cooling system of modern vehicles, especially the aluminium.
6. Protection against frost, depending upon the concentration chosen.
7. Excellent antifoaming characteristics.
8. Meets most European and International Standards.

Typical Properties Shell Antifreeze LongLife Concentrate

Appearance	Clear liquid, red
Density @ 20 °C	1,119 g/cm ³ ASTM D 4052
pH (50% vol in water)	8,45 ASTM D 1287
Freezing Point (50% vol in water)	-37 °C ASTM D 1177
Boiling Point (100%)	172 °C ASTM D 1120
Boiling Point (50% vol in water)	108 °C ASTM D 1120
Reserve Alkalinity (ml HCl N/10)	7,2 ml ASTM D 1121
Foaming Characteristics at 88 °C	ASTM D 1881
- Height	35 ml
- Breaktime	1,5 seconds

**These are typical properties and do not constitute a specification, for specification limits please refer to the product specification.*

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Shell LongLife Antifreeze Concentrate exceeds most of the European and International quality standards:

	Group	Standard
USA	ASTM Standards	ASTM D3306
USA	ASTM Standards	ASTM D4656
USA	ASTM Standards	ASTM D4985
UK	British Standards	BS 6580 : 2010
France	French Standards	NF R15-601
Germany	FVV Standards	FVV Heft R443
Austria	Austrian Standards	AS 2108
International	SAE Standards	SAE J1034
Spain	UNE Standards	uNE 26361-88

Shell Antifreeze LongLife Concentrate is suitable for use with the following engines coolant specifications;

OEM	OEM Standard
DAF	74002
FORD	WSS-M97B44-D
General Motors	GM 6277M
MAN	MAN 324 SNF
Mercedes-Benz	MB 325.3
Renault	41-01-001
Renault Trucks	
SEAT	TL 774 D & F
Skoda	TL 774 D & F
Volkswagen	TL 774 D & F
Volvo	VCS

Freeze Protection

Shell Antifreeze LongLife Concentrate is a concentrated product and should be diluted for use with good quality water. Kemetyl 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

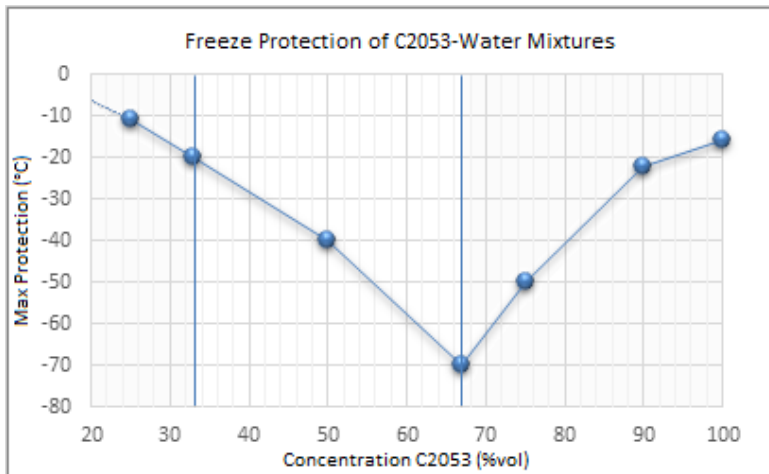
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In order to provide a satisfactory level of corrosion protection it is recommended to use at least 33% (1:2) volume of **Shell Antifreeze LongLife Concentrate** in the coolant solution. In line with most car manufacturers Kemetyl recommends a 50% (1:1) 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 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 (33% vol in H2O)	Shell LongLife (33% vol in H2O)	ASTM D3306 limit
Copper	6,5	0	10
Solder	345	-5	30
Brass	8	1	10
Steel	1474	1	10
Cast Iron	2472	1	10
Aluminium	30	1	30

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ASTM D4340

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

Mass Change (mg/cm ² /week)	ASTM D3306 Limit
0,2	1,0

Compatibility

Although it is always recommended to use deionized or demineralized water to dilute antifreeze, **Shell Antifreeze LongLife Concentrate** is formulated to be able to cope with different water qualities and is compatible with hard water.

Shell Antifreeze LongLife Concentrate is fully miscible with other coolants and can be safely mixed with them. However, as **Shell Antifreeze LongLife Concentrate** employs an inhibitor type that is very different to that used in traditional mineral coolants it recommended to drain and flush cooling systems containing them before recharging with diluted **Shell Antifreeze LongLife Concentrate**. Failure to do so could significantly lower the performance and longevity of the product.

Storage and Handling

Shell Antifreeze LongLife Concentrate has a shelf life of at minimum four 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. **Shell Antifreeze LongLife Concentrate** 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.

The content of this Technical Data Sheet has been prepared by taking into consideration the relevant international standards and the information contained in specifications of vehicle and equipment manufacturers. This Technical Data Sheet and the statements in content cannot be interpreted as a guarantee commitment in respect of product specifications or usage in any application.

It is the consumer's responsibility to use this product in accordance with its ordinary purpose and comply with the applicable laws and regulations. Kemetyl Kimya San. Tic. Ltd. Şti. shall not be held responsible for any claims or damages arising out of abnormal use, improper usage, use for the wrongful purposes or risks and consequences by the nature of product structure.

This Technical Data Sheet shall be valid on issue date. Right to amend information provided in content of this Technical Data Sheet without prior notice is reserved.