



OPUS LUBRICANTS PRODUCT DATA

LONGLIFE ANTIFREEZE (YELLOW) VCS

Description

Opus Longlife Antifreeze VCS 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. Opus Longlife Antifreeze VCS 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

Appearance:	Clear liquid, free from matter in suspension	
Density at 20°C	1.119 g/cm ³	ASTM D 4052
pH (50% vol in Water)	8.2	ASTM D 1287
Freezing Point (50% vol in Water)	-38 °C	ASTM D 1177
Boiling Point	172°C	ASTM D 1120
Reserve Alkalinity (ml HCl N/10)	6.2 ml	ASTM D 1121
Water Content	2.8 % wt	ASTM D 1123
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. The product can be dyed different colours on request.

Performance Standards

Opus Longlife Antifreeze VCS exceeds most of the European and International quality standards:

- AFNOR NF R15-601 (France)
- AS 2108 (Australia)
- ASTM D3306 (USA)
- ASTM D4656 (USA)
- ASTM D4985 (USA)
- BS 6580: 2010 (UK)
- CUNA NC 956-16
- FVV Heft R443
- SAE J 1034
- UNE 26361-88



Opus Longlife Antifreeze VCS is suitable for use against the following standards:

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 VAG	TL 774 D & F
Volvo	VCS

Opus Longlife Antifreeze VCS is an extended life antifreeze which should be replaced every five years or every 250,000 km for passenger vehicles or every 1,000,000 km for trucks and commercial vehicles. Original

Equipment Manufacturers' (OEMs) recommendations should be followed when replacing coolant.

Storage and Handling

Opus Longlife Antifreeze VCS 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. It 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.

Freeze Protection

Opus Longlife Antifreeze VCS is a concentrated product and should be diluted for use with good quality water. Ferguson & Menzies Ltd 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 Longlife Antifreeze VCS (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 Opus Longlife Antifreeze VCS in the coolant solution. In line with most car manufacturers Ferguson & Menzies Ltd 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.



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)	C2053 (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

ASTM D4340

(Corrosion of cast Aluminium Alloys under Heat Rejecting Conditions)

Mass Change (mg/cm²/week)	ASTM D3306 Limit
0.2	1.0

Compatibility

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

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

Revision Date: May 2019

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