



OPUS LUBRICANTS PRODUCT DATA

LONG LIFE ANTIFREEZE

Description

OPUS Long Life Antifreeze is an ethylene glycol based engine coolant concentrate, which uses Organic Acid Inhibitor Technology and is free from nitrites, amines, phosphates, borates and silicates. BTC Classification Type 4E. Fleet trials have shown that when used at the correct concentration coolants based on Organic Acid Inhibitor Technology continues to provide effective corrosion protection for up to 250,000 km for passenger cars and 500,000km in commercial vehicles. It is recommended that the coolant is replaced when the above mileages have been reached or after 5 years whichever is the sooner. Unlike traditional coolants which employ inorganic inhibitors, Opus Long Life Antifreeze has excellent hard water stability and very low inhibitor depletion rates.

Physical Properties

<u>Parameter</u>	<u>Method</u>	<u>EXLC 5</u>	<u>ASTM D3306</u>
Appearance	Visual	Clear Red – Orange liquid free from suspended matter	Not Specified
Specific Gravity 15/15°C	ASTM D 4052	1.125	1.110 – 1.145
Equilibrium Reflux Boiling Point °C	ASTM D 1120	174	163 min
Freezing Point °C (50% Dilution by vol.)	ASTM D 1177	-40	-37 max
Freezing Point °C (33% Dilution by vol.)	ASTM D 1177	-20	
pH (50% vol.)	ASTM D 1287	8.0	7.5 – 11.0
Reserve Alkalinity 0.1N HCl	ASTM D 1121	7.5	Report
Water Content	ASTM D 1123	3.0	5 max
Foaming Properties	ASTM D1881	Vol. (ml)	150 max
		Break (s)	5 max

Corrosion Protection

	<u>Weight Loss mg / Coupon</u>					
	Copper	Solder	Brass	Steel	Cast Iron	Aluminium
ASTM D 2570 (max)	20	60	20	20	20	60
Longlife	2	3	2	2	1	5



ASTM D 4340 Corrosion of Aluminium under heating rejecting conditions

	<u>Weight Loss mg / cm² / week</u>
ASTM D 2570 (max)	1.0
Longlife	0.2

ASTM D2570 Simulated Service Corrosion Test

	<u>Weight Loss mg / Coupon</u>					
	Copper	Solder	Brass	Steel	Cast Iron	Aluminium
ASTM D 2570 (max)	20	60	20	20	20	60
Longlife	2	3	2	2	1	5

ASTM D 2809 Cavitation Corrosion Characteristics of Aluminium Pumps

	<u>Weight Loss mg / cm² / week</u>
ASTM D 2809 (min)	8
Longlife	9

(The above figures are typical values and do not constitute a specification)

Freeze Protection

	<u>Concentration by Volume %</u>				
	25	33	40	50	60
Specific Gravity 20 / 4°	1.040	1.055	1.073	1.086	1.100
Freeze Protection * °C	-12	-22	-27	-40	-56

*Average of Freezing Point and Pour Point



Performance Standards

Opus Longlife Antifreeze exceeds the requirements of most European and International Standards including:

ASTM D3306
ASTM D 4985
SAE J 1034
BS 6580 (2010)
AFNOR NF R15-601 *
FFV Heft R443
CUNA NC 956-16
UNE 26361 - 88
JIS K 2234 *
NATO S 759

(with the exception of reserve alkalinity)*

It also meets the performance requirements of the following OEM specifications:

Chrysler MS 9176
Cummins CES 14603
Ford ESE M97B49-A, WSS-M97B44-D & ESD M97 B49-A
GM 1899 M, US 6277 M & OPEL GM QL130100
John Deere H 24 B1 & C1
Leyland Trucks LTS 22 AF 10
Mack 014GS 17004
MAN 248, 324 (SNF) & B&W D 36 5600
Mercedes MB 325.3
Renault 41-01-001 - D
VAG TL 774 D/F
VOLVO VCS

Compatibility with other coolants

Opus Longlife Antifreeze is compatible with other ethylene glycol based coolants and can be safely mixed with them. As Opus Longlife Antifreeze employs an inhibitor technology that is significantly different from that used in traditional coolants we recommend that prior to using Opus Longlife Antifreeze in systems previously filled with traditional coolant that the cooling system is drained and flushed with clean water before filling with Opus Longlife Antifreeze diluted in accordance with the vehicle manufacturers instructions to ensure optimum performance and durability. Failure to do so can significantly reduce the working life of the Opus Longlife Antifreeze. In the absence of a vehicle manufacturer's advice we would recommend a 50% dilution of Opus Longlife Antifreeze in good quality water.

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