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**DURACOOOL LONG LIFE ORGANIC ENGINE COOLANT TYPE A ORGANIC ACID TECHNOLOGY (OAT) OEM COOLANT (Mono-ethylene Glycol)****Description**

**Duracool Long Life Coolant is a unique concentrate blend of organic long life corrosion inhibitors and ethylene glycol for all makes and models of vehicles including automotive and heavy duty diesel.**

**Duracool is based on carboxylate technology and contains no silicate, borates, phosphates, nitrates or amines.**

**Duracool is formulated with 90% mono-ethylene glycol and a twofold inhibitor package that ensures ultimate rust and corrosion protection with extended life adding anti-freeze/anti-boil protection for all types of petrol, diesel and gas engines in light commercial and passenger vehicles, heavy duty commercial, industrial, on highway, marine, mining and stationary applications.**

**Performance Features**

- Extends the period between changing coolant
- Passenger vehicles and light commercial transporters – 1,000,000kms / 10 years (whichever comes first).
- Heavy duty vehicles – 600,000km / 6 years / 6,000 hrs (with good quality water and product is used as directed)
- Provides maximum anti-freeze/anti-boil protection.
- Minimal disposal volume of spent coolant required.
- Provides optimum reliability and operating life of water pump (silicate free product).
- Maximises protection of all metals commonly found in the engine cooling system.
- Protects against 'hot spot' corrosion found commonly in aluminium heads.
- Excellent cavitation and liner pitting protection.
- Maximises fuel economy by keeping the engine at the optimum operating temperature.
- Protects against scale, rust and residue build-up.
- Mixed at 50/50 dilution ratio, no negative effects on hoses or gaskets.
- Formulated tested and manufactured in Australia for Australian conditions.

Exceeds the following performance and specification requirements for all major engine manufacturers for passenger, truck and machinery applications meeting;

- **ASTM's** D-1384, D-1881, D-2809, D-2570, D-1287, D-1121, D-3634, D-4340
- **AS2108.1 - 2004 (Type A)** and most international performance specifications.

**Principle Uses**

All on-road and stationary petrol, diesel and gas fuelled engines, including passenger and light commercial vehicles, buses, tractors, trucks, also marine engines, mining equipment and stationary engines.

**HO-CL Oils recommends that this product does not get mixed with other brands of coolants or inhibitors.**

**HO-CL Oils provides DURACOOOL in either Green and Red coloured profiles.**

## TECHNICAL DATA SHEET



### Instructions for Use

Before treatment, pre-clean the cooling system by: -

- Draining the existing coolant and chemically clean the system to remove any rust, dirt, oil and built up residue.
- Use a Radiator Treatment or Water Based Degreaser (HL SH-2) to clean the system effectively and thoroughly.

#### **Initial Dosage:**

- **Long Life Coolant** can be dosed 33% or 50% v/v with clean soft water. The dosage will depend on freeze protection required or engine manufacturer's recommendation.
- Anti-freeze/Anti-boil Protection
- | LLC Green | Water   | Min Temp | Max Temp                        |
|-----------|---------|----------|---------------------------------|
| ○ 1 part  | 1 part  | -39°C    | 129°C (50%/50% Heavy Transport) |
| ○ 1 part  | 2 parts | -21°C    | 125°C (33% Automotive)          |

#### **Preventative Maintenance:**

- Never top up with water as this will dilute the coolant. Always top up with **Long Life Coolant (Green)** Coolant mixed with clean, soft water as directed.

#### **Passenger Vehicles:**

- There is no requirement to replenish inhibitor during the life of the coolant. Coolant should be drained and replaced within 5 years or more often in adverse conditions

#### **Heavy duty diesel vehicles:**

- These vehicles do not require the coolant to be re-dosed at regular intervals or replacement of expensive water filters. Performance period is 1,000,000kms / 12,000 hours or 6 years, whichever comes first. Top up with **Long Life Coolant** mixed as described above if fluid is lost.
- Consult your HO-CL Oils representative if clarification is required.

### TEST DATA INFORMATION

PROPERTY	TYPICAL RESULTS
Colour	Green
pH (neat)	5.9 – 9.2
pH (50/50 vol/vol)	7.7 – 8.6
Glycol by weight (kg/L)	1.0033
Reserve Alkalinity (mL)	4.6 – 5
Freezing Point	-36°C (50% by Vol)
Boiling Point	108°C (50% by Vol)
DG Class	Non Dangerous Goods
Boiling Point (°C) ASTM D-1120	Yes
Glassware Corrosion Test, ASTM D-1384	Pass
Aluminium Corrosion Test, ASTM D-4340	Pass
Water Pump Cavitation Test, ASTM D-2809	Pass
Cummins Anti-Scale Test per AES 14603	Pass

PRODUCT CODE  
Concentrate  
Heavy Duty Premix 50/50

88669v20  
88665v20

*Typical formulation specifications at time of production, minor variations may occur.*

### SAFETY and HANDLING

This product contains ethylene glycol and is classed as a Schedule 5 poison. Refer to the Material Safety Data Sheet (MSDS) before opening and use of this product to ensure compliance to Federal, State and local jurisdiction laws for safe handling.

"Harden Oil Company Pty Ltd (HO-CL Oils) has endeavoured to ensure that all information, representations and specifications contained within this product data information are accurate at the time of publication. This general information should be used in conjunction with the vehicle service manual and OEM requirements for application."

**Long Life Coolant** meets or exceeds the following OEM performances specifications for;

**Medium and Heavy Duty Diesel**

Caterpillar EC-1/ELC	Jenbacher	SAE J 1034 & JASO M 324
Caterpillar 1 EO 535	John Deere H 24B1/C1	Scania TB 1451
CUMMINS 3666132	Kenworth ALLCool	Toyota K2601G-1G
CUMMINS 85T8-2/90T8-4	Komatsu KES 07.892	UD Long Life Coolant (Nissan)
DAF-Leyland 742002	Leibherr MD 1-36-130	Volvo VCS
DAF BTPS 606A	Leyland Trucks LTS 22 AF 10	Volvo VCS STD 418-0001
DAF DCEA 615	MAN 324 SNF/248 (Diesel Engines)	Waukesha 4-1974D
Dennis Eagle Fleetguard	Mack VCS Coolant	Western Star ASTM D-6210
Freightliner Fleet Charge Powercool	Mack 014GS 17004	
FUSO SAE J814-C	Mercedes Benz Spec. 325.0	<b>Military Specifications</b>
HINO Genuine LL Coolant	Mercedes Benz Spec. 325.5	BT-PS-606A (MIL-Belgium)
Isuzu (GM6277M & HN2217)	Mitsubishi FUSO Genuine Diesel LL Coolant	FSD 8704 (MIL-Sweden)
IVECO Paraflu 11	MTU	E/L-1415b (MIL-Italy)
IVECO GM6038m	Renault 41.02.001	DCEA 615 (MIL-France)
IVECO AC9-50	SAAB Scania 6901	NATO S-757
Japanese JIS K 2234		

**Long Life Coolant** meets or exceeds the following OEM performances specifications for;

**Automotive**

AS 218.1:2004 Type A	FORD - WSS-M97B44-D / ESE M97B49-A / ESD M97 B49-A/ESE M7-B18C	Nissan – EG Long Life Coolant
AFNOR NFR 16-601		Nissan – NES 5059 LLC, NES M 5509
ASTM D-3306, D-4656, D-4985	Glysantin - G05, G12++, G30/G33/G34	Peugot – Procor 2000/Glysantin G33
BS 6580 (British Standard)		Porsche – 000 043 203 78
SAE J1034, SAE J 1941	GM Holden - GM6277M, GM 1899M	Renault – EG Long Life Coolant D
UNE 26-361-88/1		Subaru – Super Long Life Coolant
GM - 1825 M/1899 M	GM - Opel QL 130100	Suzuki – Ethylene Glycol Coolant
Alfa Romeo – Paraflu UP	Holden - HN 1897, HN 2217, HN 2043	Toyota – K2601G, K2601-1G
Audi Skoda Volkswagen G12/G13	Honda - Long Life Type 2 All Season	Volvo Automotive
BMW N 600 69.0	Hyundai - Ethylene Glycol Coolant	VW – G12+, G12, G11, TL-774-C/D/F/G
Citroen 9979.70/71/72	Jaguar - WSS-M97B44-A	
Daimler Chrysler MS-7170	Kia – Ethylene Glycol Coolant	
Daimler Chrysler MS-9176	Land Rover – Ethylene Glycol Coolant	
Daewoo – Ethylene Glycol Coolant	Lexus Toyota – Supper LL Coolant	
Diahatsu – Ethylene Glycol Coolant	Mazda – Ethylene Glycol Coolant	
Dodge – Mopar HOAT	Mazda – FL22	
FIAT – Paraflu UP	Mercedes Benz – 325.0, 326.0	
	Mitsubishi - Long Life Coolant	