



Delo[®] ELC Antifreeze/Coolant

Product Data Sheet

Product description

Delo[®] ELC Antifreeze/Coolant products are single phase, ethylene glycol based products available in various dilutions that are based on patented aliphatic carboxylate corrosion inhibitor technology specifically formulated for heavy duty cooling system applications that require nitrite.

Customer benefits

Delo ELC Antifreeze/Coolant products deliver value through:

- **Managing costs** – Helps eliminate the cost of using SCAs (supplemental coolant additives), regular testing and the manpower required to perform these tasks effectively eliminating those costs when compared to conventional or fully formulated coolants.
- **Long Service Life** – 1,250,000 Kilometers of on-road use (8 Years or 15,000 hours of off-road use) or 1,600,000 kilometers/20,000hours/8 years with Delo Extender addition at 800,000 kilometers/10,000 hours/4 years.
- **Optimal cooling system operation** – The silicate free formula improves heat transfer when compared to silicate containing formulations. Silicates deposits can reduce heat transfer and increase downtime due to over-heating.
- **Maximum Hardware Life** – Maximum water pump life due to minimal water pump seal wear resulting from the silicate free formulation.
- **Excellent Protection** – Effective, long term corrosion protection, even at elevated temperatures, of commonly found cooling system metals. Effective at protecting aluminum in high temperature applications.
- **Variable Applications** – Recommended for use in on-road, off-road and stationary engine applications that call for an extended life, silicate and phosphate free formulation that contains nitrite and molybdate. Can be used in engines using variable fuel types and variable emission control protocols. Check with your OEM for specific product application requirements.
- **Compatibility** – Compatible with other coolant formulations and supplemental coolant additives. Chevron recommends that this product not be diluted by more than 25% with other coolant formulations. Dilution by more than 25% will reduce extended life properties.

A Chevron company product



- **Biodegradability** – Biodegradable in its unused form.
- **Stability** – Storage stable for a minimum of 8 years as purchased.

Features

Delo ELC Antifreeze/Coolant products are heavy duty engine coolants that use a patented organic corrosion inhibitor technology called aliphatic carboxylates. Delo ELC is free of nitrates, borates, silicates, phosphates and amines. These products contain nitrites and molybdates for additional cylinder liner protection.

Delo ELC Antifreeze/Coolant products are recommended for use in a wide variety of cooling system applications including on-road, off-road and stationary engine applications. These products are also recommended in mix fleet applications where heavy duty and light duty trucks are present. Please check your OEMs coolant recommendations.

Delo ELC Antifreeze/Coolant products do not require the addition of supplemental coolant additives to obtain their service life of 1,250,000 Kilometers of on-road use (8 Years or 15,000 hours of off-road use) or 1,600,000 kilometers/20,000hours/ 8 years with Delo Extender addition at 800,000 kilometers/10,000 hours/4 years with correct top-up practices.

Delo ELC Antifreeze/Coolant products have been fully tested under the CAT EC-1 specification and have been found to meet all the chemical and performance requirements of this specification.

Applications

Recommended applications for Delo® ELC Antifreeze/Coolant products:

- Heavy duty engines regardless of fuel type or environmental controls being used where the OEM recommends a silicate free, extended life coolant that contains nitrites
- Mixed fleets where both light duty and heavy duty trucks are present
- Stationary engine applications regardless of fuel type being used
- Marine cooling systems where freeze protection is needed and a nitrite containing coolant is recommended



Delo[®] ELC Antifreeze/Coolant

continued

Delo ELC Antifreeze/Coolant meets the specifications of:

- ASTM D6210
- ASTM D3306
- Caterpillar EC-1
- Detroit Series 60 and DD15 engines per SVC BRO 0002
- Navistar B1 Type 3
- TMC RP 329, 302A, 351 (color)

Delo ELC Antifreeze/Coolant is recommended for use in:

- Caterpillar Stationary Natural Gas Engines
- Cummins QSK, QST, ISX 15, ISX, ISM, ISL, ISC and ISB Diesel Engines
- Cummins Westport ISX 12G and ISL G CNG engines
- Deutz Stationary Diesel Engines
- Freightliner and Western Star Truck Diesel Engines
- GE - Jenbacher Stationary Natural Gas Engines
- Hino Truck Diesel Engines
- Isuzu Truck Diesel Engines
- Kenworth and Peterbilt Truck Diesel Engines
- Kobelco Construction Equipment Diesel Engines
- Komatsu Construction Equipment Diesel Engines
- MTU 4000 Diesel Engines
- Navistar Truck Diesel Engines
- Scania and MAN Truck Diesel Engines
- Volvo and Mack Truck Diesel Engines
- Wärtsilä Stationary Diesel Engines
- Waukesha Stationary Natural Gas Engines
- White-Superior Stationary Natural Gas Engines

Note: It is recommended that this product not be diluted with other coolant formulations by more than 25% in order to maintain performance claims.

¹ Some OEMs recommend the use of nitrite free coolants. Check with your OEM.



continued

Product Dilution and Boil Over Recommendations For Delo ELC Antifreeze/Coolant - Concentrate

Boiling Protection, °C/°F (using a 15 lb pressure cap)

50% 1:1 (1 part antifreeze/1 part water)	129.4/265
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Freezing Protection, °C/°F

40% 2:3 (2 parts antifreeze/3 parts water)	-24/-11.2
50% 1:1 (1 part antifreeze/1 part water)	-36.7/-34.1
60% 3:2 (3 parts antifreeze/2 parts water)	-49/-56.2

Notes

- Product concentrates should be agitated before use or dilution.
- Delo ELC Antifreeze/Coolant - Premixed 50/50 should be used as purchased. No dilution is recommended.
- For maximum protection against freezing in extremely cold areas, a 60 percent solution of Delo ELC Antifreeze/Coolant - Concentrate (3 parts antifreeze/2 parts water) can be used. Concentrations greater than 67 percent are not recommended.
- Always dispose of used coolant in accordance with local, state and federal guidelines.

Product Reference

Note: Bitterant is a flavor aversive that may help reduce the accidental ingestion of this product. These products contain bitterant.

Product Number

MSDS Number

Delo ELC Antifreeze/Coolant - Concentrate

Product Number

MSDS Number

Delo ELC Antifreeze/Coolant - Premixed 50/50

Product Number

MSDS Number

Delo ELC Antifreeze/Coolant - Premixed 60/40

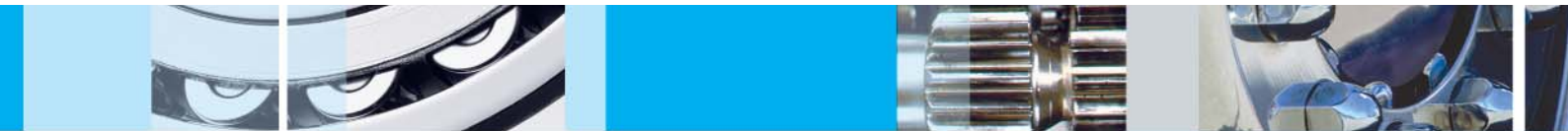
Product Number

MSDS Number

Delo Extender



Delo[®] ELC Antifreeze/Coolant



Typical test data

DELO ELC ANTIFREEZE/COOLANT CONCENTRATE	RESULTS
Appearance	Red
Specific gravity 15/15°C	1.120
Freezing point, °C ² ASTM D1177	-37
pH ³ , ASTM D 1287	8.5
Reserve alkalinity ⁴ , ASTM D1121	6.0
Silicate, % ⁵	None

Minor variations in product typical test data are to be expected in normal manufacturing.

ASTM D1384 Glassware Corrosion Test

DELO ELC ANTIFREEZE/COOLANT CONCENTRATE	ASTM D1384 GLASSWARE CORROSION TEST	
	ASTM Limit	Weight loss, mg per coupon ⁶
Copper	10 max	2
Solder	30 max	0
Brass	10 max	-1
Steel	10 max	-1
Iron	10 max	-1
Aluminum	30 max	3

² 50 vol % aqueous solution.

³ 1:2 dilution with water.

⁴ As received.

⁵ As anhydrous alkali metasilicate.

⁶ Negative indicates net gain.



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pH and RA Comparison of Delo ELC Antifreeze/Coolant Versus Traditional Coolants Is Shown Below:

	DELO ELC ANTIFREEZE/ COOLANT	TRADITIONAL ANTIFREEZE/COOLANT
Typical pH	8.7	10.5
Typical RA ⁷ (mL)	6.0	12.0

Delo Extender Adds Value Through:

- **Product Specific Formulation** – Specifically formulated to work with Delo ELC. Delo Extender should be added at 800,000 kilometers, 10,000 hours or 4 years in order to obtain a service interval of 1,600,000 kilometers, 20,000 hours or 8 years

Delo Extender has been specifically formulated to double the life of Delo ELC Antifreeze/Coolant - Premixed 50/50. It should only be added at 800,000 miles/10,000 hours/4 years.

Quantity of Delo Extender needed at 800,000 kilometers of on-road use (4 years or 10,000 hours of off-highway use)

COOLING SYSTEM CAPACITY, LITERS	DELO EXTENDER QUANTITY, LITERS
22-30	0.5
30-49	1
49-83	1.5
83-114	2
114-155	3
155-197	4
197-243	5

Delo Extender should only be used with Delo ELC Antifreeze/Coolant.

⁷ RA is defined as the amount in milliliters (mL), of 0.1 normal hydrochloric acid required to reduce the pH of 10 ml of antifreeze to 5.5.



Delo[®] ELC Antifreeze/Coolant

Delo[®] Extender: Typical test data

DELO EXTENDER TYPICAL TEST DATA	RESULTS
Appearance	Red
Specific gravity	1.06
Silicate, %	None

Minor variations in product typical test data are to be expected in normal manufacturing.

Handling Practices

The primary limiting factor in the shelf life of a coolant is silicate instability. Since silicate will eventually polymerize to silicate gel, silicate containing coolants have a shelf life of about 18 months. Delo ELC Antifreeze/Coolant is silicate-free and therefore can be stored for at least 8 years, provided the integrity of the container is maintained. Product should be agitated before use.

This bulletin was prepared in good faith from the best information available at the time of issue. While the values and characteristics are considered representative, some variation, not affecting performance, can be expected. It is the responsibility of the user to ensure that the products are used in the applications for which they are intended.

Produced by Chevron Lubricants; Africa, Middle East and Pakistan.

Environment, Health and Safety Information is available on this product in the Material Safety Data Sheet (MSDS) and Customer Safety Guide. Customers are encouraged to review this information, follow precautions and comply with laws and regulations concerning product use and disposal. To obtain a MSDS for this product, visit www.caltexoils.com.

For more information, go to www.chevronlubricants.com