



DELO[®] ELC ANTIFREEZE/COOLANT

PRODUCT DESCRIPTION

Delo[®] ELC Antifreeze/Coolant products are single phase, ethylene glycol based NOAT (Nitrated Organic Additive Technology) 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** — Service life of 1,000,000 miles / 1,600,000 km on-road use / 15,000 hours off-highway use, or 8 years, or 1,500,000 miles/ 2,400,000 km / 20,000 hours of diesel engine coolant system protection when properly maintained with a Delo FleetFix[®] CME addition at 750,000 miles / 1,200,000 km / 10,000 hours or 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 performance.
- **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 mixed fleet applications where heavy duty and light duty trucks are present. Please check your OEM's coolant recommendations.

Delo ELC Antifreeze/Coolant products do not require the addition of supplemental coolant additives to obtain their service life of 1,000,000 miles / 1,600,000 km / 15,000 hours, or 8 years, when properly maintained. Routine visual inspections, coolant top-off and annual laboratory testing are recommended to ensure maximum service life.

Delo ELC Antifreeze/Coolant products have been fully tested under the CAT EC-1 specification and have been

Product(s) manufactured in the USA and Colombia.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

A **Chevron** company product

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COOL-40

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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 nitrites¹
- 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/Coolants are approved for:

- **Cummins** CES 14439
- **Deutz** DQC CB-14

Delo ELC Antifreeze/Coolants meet 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/Coolants are recommended by Chevron for use in:

- **Caterpillar** Stationary Natural Gas Engines
- **Cummins** applications specifying CES 14603
- **Cummins Westport** ISX 12G and ISL G CNG 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

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

- **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.

Delo ELC Antifreeze/Coolant products are backed by Chevron's Limited Product Warranty. Always check your original equipment manufacturer to determine the proper fluid for your equipment, its operating conditions, and maintenance practices.

PRODUCT DILUTION AND BOIL OVER RECOMMENDATIONS FOR DELO ELC ANTIFREEZE/COOLANT - CONCENTRATE

Boiling Protection, °F/°C (using a 15 lb pressure cap) 50% 1:1 (1 part antifreeze/1 part water)	265/129
Freezing Protection, °F/°C 40% 2:3 (2 parts antifreeze/3 parts water) 50% 1:1 (1 part antifreeze/1 part water) 60% 3:2 (3 parts antifreeze/2 parts water)	-12/-24 -34/-37 -62/-52

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.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

PRODUCT REFERENCE

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

Product Number 227808
 SDS Number USA 10652
 MSDS Number Colombia 33059
 Delo® ELC Antifreeze/Coolant - Concentrate

Product Number 227811
 SDS Number USA 10673
 MSDS Number Colombia 33053
 Delo ELC Antifreeze/Coolant - Premixed 50/50

Product Number 275111
 SDS Number USA 23721
 Delo ELC Antifreeze/Coolant - Premixed 60/40

Product Number 227025
 SDS Number USA 38110
 Delo FleetFix® CME

TYPICAL TEST DATA

Delo ELC Antifreeze/Coolant - Concentrate

Appearance	Red
Specific gravity 15/15°C	1.130
Freezing point, °C ^a ASTM D1177	-37
pH ^b , ASTM D 1287	8.3
Reserve alkalinity ^c , ASTM D1121	6.0
Silicate, % ^d	None

- a 50 vol % aqueous solution.
- b 1:2 dilution with water.
- c As received.
- d As anhydrous alkali metasilicate.

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

Delo ELC Antifreeze/Coolant ASTM D1384 Glassware Corrosion Test

Delo ELC Antifreeze/Coolant ASTM D1384 Glassware Corrosion Test		
	ASTM Limit	Weight loss, mg per coupon ^a
Copper	10 max	2
Solder	30 max	0
Brass	10 max	-1
Steel	10 max	-1
Iron	10 max	-1
Aluminum	30 max	3

a Negative indicates net gain.

PH AND RA COMPARISON OF DELO ELC ANTIFREEZE/COOLANT VERSUS TRADITIONAL COOLANTS IS SHOWN BELOW:

	Delo ELC Antifreeze/Coolant	Traditional Antifreeze/Coolant
Typical pH	8.3	10.5
Typical RA ^a (mL)	6.0	12.0

a 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 FLEETFIX CME ADDS VALUE THROUGH:

- **Product Specific Formulation** — Specifically formulated to work with Delo ELC. Delo FleetFix CME should be added at 750,000 miles / 1,200,000 km / 10,000 hours, or 4 years, in order to obtain up to 1,500,000 miles / 2,400,000 km / 20,000 hours, or 8 years of diesel engine coolant system protection.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

Quantity of Delo FleetFix CME needed at 750,000 miles / 1,200,000 km of on-road use (4 years or 10,000 hours of off-highway use)		
Cooling System Capacity		Delo FleetFix CME Quantity
Gallons	Liters	Quarts
1-5	4-19	0.5 quart
6-8	23-30	1 quart
9-12	34-45	1.5 quarts

Delo FleetFix CME should only be used with Delo ELC Antifreeze/Coolants.

TYPICAL TEST DATA For Delo FleetFix CME

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.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.