

General Information

The purpose of this service bulletin is to explain the correct use and maintenance of extended-life coolants (ELC), and to identify Freightliner-approved coolant types.

CAUTION

Do not use automotive-type coolants in any heavy-duty cooling system. They do not contain adequate corrosion protection, and serious engine damage could result.

See the enclosed color reference card to identify Freightliner-approved coolants by color.

NOTE: Additional color reference cards (Form Number TSS408) can be ordered through Access Freightliner. Go to www.accessfreightliner.com, then select "Tools and Services"; then select "Technical Publications Ordering" link; then select "Freightliner/FCCC Technical Publications Request Form".

IMPORTANT: All Freightliner Custom Chassis products are factory filled with Fleetcharge® conventional coolant as standard (other coolant types are available as an option), which is a fully formulated coolant, not an extended-life coolant.

Always check the engine manufacturers website for the most recent information concerning recommended coolant.

The major difference between extended-life coolants and fully formulated conventional heavy-duty coolants is the type of inhibitors used. Fully formulated conventional heavy-duty coolants use inhibitors called SCAs (Supplemental Coolant Additives). Extended-life coolants (sometimes called long-life coolants) contain inhibitors that use Organic Acid Technology (OAT) or Nitrited Organic Acid Technology (NOAT). These inhibitors deplete much more slowly than SCAs. This allows for a much longer interval before the inhibitors need to be replaced. As long as correct topping-off procedures are used to prevent dilution/contamination, the coolant will be good for 300,000 miles (482 700 km) or 6000 hours of engine operation. At this interval period, using an ELC extender will extend the coolant another 300,000 miles (482 700 km) or 6000 hours of engine operation.

There are several different brand names of extended-life coolants that are compatible with each other. See [Table 1](#).

NOTE: Use only the brands shown in [Table 1](#).

There are two ways to visually identify a system with an extended-life coolant.

- A label is installed near the fill point on or near the surge tank.
- The color of the coolant is strawberry-red or orange.

Compatible Pre-Mixed Extended-Life Coolants					
Supplier	Product Name	Part Number	Qty.	Color	Use
Texaco	Extended-Life Coolant (ELC), Pre-Diluted 50/50	7998	*	Strawberry-red	Initial Fill and Top-Off
Caterpillar	Extended-Life Coolant (ELC) 50/50 Premix	102844	1 gallon		
		1292151	5 gallons		
		102845	55 gallons		
Detroit Diesel	Power Cool Plus® Pre-Blended 50/50	23519396	6 gallons	Orange	
		23519398	55 gallons		
Shell	Rotella ELC® Pre-Diluted 50/50 Extended-Life Coolant	94042	*	Strawberry-red	

* Specify quantity when ordering.

Table 1, Compatible Pre-Mixed Extended-Life Coolants

Maintenance of Extended-Life Coolants

With correct maintenance, extended-life coolants are designed to provide engine protection for 600,000 miles (965 000 km) or 12,000 engine operation hours. An extender must be added at 300,000 miles (483 000 km), or 6000 engine operation hours. Ordinarily, extended-life coolants need very little additional maintenance. It is important, however, to check the coolant at oil change intervals for color, clarity, dilution, and freeze point protection. See [Table 2](#) for maintenance procedures.

Extended-Life Coolant Maintenance		
Procedure	Interval	Notes
Topping Off	As Needed	Use only a compatible pre-mix coolant. See Table 1 .
Testing Freeze Point	Every 6 to 12 months*	Use only a refractometer to test.
Visual Inspecting	Every 6 to 12 months*	Color and clarity should be bright and free of contaminants.
ELC Coolant Test Strip	Every 6 to 12 months*	Test for dilution and/or contamination of coolant.
Adding Extender	300,000 miles (483 000 km) or 6000 engine operating hours	Use a compatible extended-life coolant extender. See information under "Adding Extenders."

* Interval depends on topping-off frequencies.

Table 2, Extended-Life Coolant Maintenance

Topping Off the System

Top off the system as needed, using an approved pre-mix extended-life coolant. See [Table 1](#).

IMPORTANT: An approved extended-life coolant must be used to maintain the extended-life benefits in the system. Topping off with a fully formulated conventional heavy-duty coolant will not damage the cooling system, but any benefits of an extended-life coolant will be lost. If accumulated top offs with fully formulated conventional heavy-duty coolants exceed 10 percent of the cooling system's capacity, either drain and flush the system, and refill it with an approved extended-life coolant, or maintain the system with fully formulated coolants and SCAs going forward.

Freeze Point Checking

Use only a refractometer to check the freeze point; a hydrometer is not accurate enough. The freeze point should be maintained at -34°F (-37°C) with a 50/50 ratio of antifreeze to water. To increase the freeze point, add an approved concentrate to achieve the correct ratio of antifreeze to water. See [Table 3](#) for compatible concentrates.

Compatible Extended-Life Coolant Concentrates					
Supplier	Product Name	Part Number	Qty.	Color	Use
Texaco	Extended-Life Coolant (ELC) Concentrate	7997	*	Strawberry-red	Freeze Point Adjustment
Caterpillar	Extended-Life Coolant (ELC) Concentrate	119515	1 gallon		
		136707	55 gallons		
Detroit Diesel	Power Cool®	235121138	6 gallons	Orange	
		235121139	55 gallons		
Shell	Rotella® Extended-Life Coolant (ELC) Concentrate	94041	*	Strawberry-red	

* Specify quantity when ordering.

Table 3, Compatible Extended-Life Coolant Concentrates

Visual Inspecting

WARNING

Do not remove or loosen the radiator cap until the engine and cooling system have completely cooled. Use extreme care when removing the cap. A sudden release of pressure from removing the cap prior to the system cooling can result in a surge of scalding coolant that could cause serious personal injury.

To check visually for contaminants, drain a coolant sample from the reservoir into a clear container. Check the color and clarity against a known good sample or use the color reference card, Form Number TSS408, enclosed with this service bulletin. If the sample is not clear and bright, drain and flush the coolant. Test the sample with a universal heavy-duty coolant test strip (see [Table 4](#)), to ensure the system has not been contaminated or diluted. Contamination can be caused by system failure, but more often it is from topping off with a non-approved coolant, a conventional coolant (usually a different color), or tap water. If contamination is suspected, a field contamination kit is also available. See [Table 4](#) for kit information.

Coolant Testing Products		
Product Name	Supplier	Part Number
Universal Coolant Test Strip	Penray	TS200
Refractometer (Fahrenheit)	Penray	CTX2
Refractometer (Celsius)	Penray	CTX1
Field Contamination Kit	Texaco	2868

Table 4, Coolant Testing Products

Adding Extenders

At 300,000 miles (483 000 km) or 6000 engine operating hours, add an extender to the coolant. This will give corrosion protection for an additional 300,000 miles (483 000 km) or 6000 engine operating hours. See [Table 5](#) for approved extenders.

Compatible Extended-Life Coolant Extenders				
Supplier	Product Name	Part Number	Qty.	Use
Penray	Extended Life Coolant Extender	900032	1 quart	Extends Coolant Life to 600,000 miles (965 000 km) or 12,000 off-road hours
Texaco	Texaco Extended-Life Extender	7999	*	
Caterpillar	Caterpillar ELC Extender	1195151	1 pint	
		1195152	1 quart	
Detroit Diesel	Power Cool Plus Extender	23519400	*	
Shell	Rotella ELC Extender	94043	*	

* Specify when ordering.

Table 5, Compatible Extended-Life Coolant Extenders

Warranty

This is an informational bulletin only; warranty does not apply.