



SHELL INDUSTRIAL ELC

Coolant/Antifreeze and heat transfer fluid

Product Description

Shell Industrial ELC products are a series of extended life industrial coolant/antifreeze and heat transfer fluids formulated for stationary equipment applications. These products are based on a unique extended life carboxylate inhibitor system and nitrite/molybdate as secondary inhibitors. **Shell Industrial ELC** provides complete protection of cooling system components. **Shell Industrial ELC** products require no inhibitor additions for 32,000 hours or 6 years. These products do not contain borates, phosphate, amines and silicates and are available in ethylene glycol and propylene glycol based fluids.

Applications

- stationary engines used in natural gas processing, irrigation, power generation, marine applications, oilfield operations and portable air compressors
- heat transfer applications such as line heaters, snow melting systems
- unique applications such as coolants in ice-skating rinks and air conditioning units
- on-road/off road heavy-duty diesel engine applications
- propylene glycol based products can be used where toxicity is a concern
- nitrite free product is recommended by European manufacturers for on-road/off road and industrial applications

Features/Benefits

- service life of 32,000 hours or 6 years with no inhibitor additions required
- protects all industrial cooling system metals including brass, copper, solder, steel, cast iron and aluminum
- contains no silicates, phosphates, borates or amines
- low dissolved solids formula prevents formation of deposits
- phosphate free formula helps prevent hard water scale formation
- silicate free technology maintains good as new heat transfer and prevents formation of silicate gels during use and storage
- 100% biodegradable in its unused form
- available as ethylene glycol, propylene glycol based fluids
- wide range of applications reduces the number of coolants required

Note: These products are not to be used to protect the inside of potable water systems from freezing.

Approvals

Shell Industrial ELC concentrate and **Shell Industrial ELC Pre-diluted 50/50** with nitrite (code # 94063, 94064) meet or exceed recommendations of:

- Caterpillar
- Detroit Diesel
- Mack
- Cummins
- International
- Volvo
- ASTM D4985, D5345
- ASTM D 6210
- TMC RP 329
- Waukesha
- White Superior

Shell Industrial ELC PG and **Shell Industrial ELC PG Pre-diluted 50/50** (code # 94077 and 94078) meet or exceed recommendations of:

- ASTM D 6210
- Kuboto
- Ulstein Bergen spec # 2.13.01

Shell ELC Corrosion Inhibitor(Code #94079) for water based systems meets or exceeds recommendations of where freezing is not an issue:

- Deutz-MWM spec # 0199-99-2091
- GEC Alsthom
- Holdon
- MAN spec# 248
- Man B&W D36 5600
- Scania spec# TB 1451
- Sulzer Diesel spec# TR 1508
- Ulstein Bergen spec# 2.13.01
- Wartsilla spec #32-9011

Typical Properties of Shell Industrial ELC (ethylene glycol base)	Typical Concentrate	Typical Pre-dilute 50/50
Code No.	94063	94064
Appearance	Red	Red
Specific gravity 60/60 °F	1.13	1.06
Freezing point, °F (ASTM D 1177) 50 vol % q.s. aqueous solution	-34	NA
Freeze point as sold, °F,	NA	-34
pH (ASTM D 1287), 1:2 dilution with water	8.3	NA
pH as sold	NA	8.3
Reserve Alkalinity(ASTM D 1121), as received	6	3.0
Silicate, % (as Anhydrous Alkali Metasilicate)	None	None

Shell Industrial ELC PG (propylene glycol base)	Typical Concentrate	Typical Pre-dilute 50/50
Code No.	94077	94078
Appearance	Pink	Pink
Specific gravity 60/60 °F	1.038	1.06
Freezing point, °F (ASTM D 1177) 50 vol % q.s. aqueous solution	-27	NA

Freeze point as purchased, °F	NA	-27
pH (ASTM D 1287), 1:2 dilution with water	8.3	NA
pH as sold	NA	8.3
Reserve Alkalinity(ASTM D 1121), as received	6.0	3.0
Silicate, % (as Anhydrous Alkali Metasilicate)	None	None

Freeze Point and Boil-over Protection levels of **Shell Industrial ELC products**

Product	Freeze Point °F (°C)*	Boil-over Protection °F (°C)*
Shell Industrial ELC Concentrate (Code# 94063)	Not applicable. Product should be diluted before use.	Not applicable. Product should be diluted before use.
Shell Industrial ELC Pre-diluted 50/50 (Code # 94064)	-34°F/-37.2°C*	264°F/129°C*
Shell Industrial ELC PG (Code # 94077)	Not applicable. Product should be diluted before use.	Not applicable. Product should be diluted before use.
Shell Industrial ELC PG Pre-diluted 50/50 (Code # 94078)	-27°F/-32.7°C*	260°F/126.7°C*

* Values are based product as sold in a closed system application with a 15-lb pressure cap.

Converting to Shell Industrial ELC:

The procedure below will allow a cooling system to be converted from using traditional coolants to the **Shell Industrial ELC** technology.

1. Allow cooling system to cool thoroughly.
2. Drain traditional coolant from cooling system. Dispose of all coolant according to all laws and regulations.
3. Fill cooling system with clean water and circulate system until normal operating temperatures are reached. Circulate system for 15 to 30 minutes after reaching normal operating temperatures.
4. Check system for any leaks and replace any worn materials.
5. Drain the water from the cooling system completely. Dispose of all re-circulated water according to all laws and regulations. Water that remains in cooling system will affect the freeze point of new coolant when added.
6. Re-filling the cooling system
 - A If using **Shell Industrial ELC Pre-diluted 50/50**. Fill the cooling system about 9/10 full with **Shell Industrial ELC Pre-diluted 50/50**. Circulate system until normal operating temperature is reached. Test freeze point and adjust to between -15°F and -62°F. The optimal freeze point is -34°F. For under concentrated systems use Shell Industrial ELC concentrate to make freeze point more negative. For over concentrated systems use water to make freeze point more positive. Circulated system after freeze point has been adjusted.
 - B If using **Shell Industrial ELC concentrate**. Determine the total cooling system volume and divide that number by 2. Fill half of the cooling system with **Shell Industrial ELC** concentrate. Top up to full level with deionized or good quality tap water. Circulate cooling system until normal operating temperature is reached. Test freeze point and adjust to between -15°F and -62°F. The optimal freeze point is -34°F. For under concentrated systems use **Shell Industrial ELC** concentrate to make freeze point more negative. For over concentrated systems use good quality water to make freeze

- point more positive.
- c Use a refractometer to check freeze point after addition of top up fluid.

Maintaining Shell Industrial ELC:

1. Check coolant level regularly. If systems are prone to leaking more frequent checking of the cooling system is recommended to maintain proper fluid levels. Top up as required with **SHELL INDUSTRIAL ELC Pre-diluted 50/50**. Coolant levels should be maintained at proper levels to insure correct cooling system operation and avoid headspace corrosion.
2. For systems using ethylene glycol or propylene glycol check freeze point at least twice per year using a refractometer and adjust to between -15°F and -62°F. Optimum freeze point is -34°F.
3. Do not contaminate **SHELL INDUSTRIAL ELC** by more than 15% with non-equivalent products. If contamination of the cooling system is suspected use either the ELC Contamination Test Strip or contact your local Shell representative so that he/she can assist in helping you submit a sample to our testing laboratory to be sure inhibitor levels are still within safe operating range. For more information on testing call 1-800-782-7852, Option 3.
4. **Shell Industrial ELC** should be tested once per year to confirm coolant condition and to evaluate cooling system for corrosion products and wear metals. A coolant-testing program is available for **Shell Industrial ELC** users. All coolant samples must be submitted in approved containers. Contact your local Shell representative for information.

Please check with your local Shell representative or call the Technical Information Center at 1-800-782-7852 (Option 3) for more information on **Shell Industrial ELC**.

Handling & Safety Information

Shell Industrial ELC has a shelf life of at least 8 years. Concentrate product should be mixed before use. Always dispose of used coolants in accordance with local, state and federal guidelines. These products are not to be used to protect the inside of potable water systems against freezing. For information on the safe handling of this product, refer to its Material Safety Data Sheet at <http://www.shell-lubricants.com/msds/>. If you are a Shell Distributor, please call **1+800-468-6457** for all of your service needs. All other customers, please call **1+800-840-5737** for all of your service needs. Information is also available on the World Wide Web: <http://www.shell-lubricants.com/>.