Technical Data Sheet

# Shell ROTELLA® *ELC Nitrite Free Pre-Diluted 50/50*

***Premium, Nitrite Free, Extended Life Antifreeze/Coolant for Commercial and Mixed Fleet Use***

Shell ROTELLA® ELC Nitrite Free (NF) Pre-Diluted 50/50 antifreeze/coolant is an ethylene glycol-based coolant that contains the proven Shell ROTELLA® ELC OAT technology for extended life operation up to 1,200,000 miles in Class 8 over the road operation. Also, exceptional long life is expected for all other applications, such as diesel, gasoline, and natural gas engine powered vehicles along with light duty passenger cars and pick-up trucks with proper maintenance. Nitrite free formulation provides improved protection of aluminum components in modern engines including brazed aluminum heat exchangers and meets many of the newest OEM specifications. ROTELLA® ELC NF Pre-Diluted 50/50 is pre-diluted and ready to use. It requires no further dilution.

## DESIGNED TO MEET CHALLENGES

### Performance, Features & Benefits

- **Outstanding heat transfer**

  Provides excellent heat transfer due to the OAT technology that is superior to conventional coolants. This helps keep heavily used engines cool during summer.

- **All Climate Use**

  Shell ROTELLA® ELC NF Pre-Diluted 50/50 provides protection against freezing at low temperatures and boil-over protection at high temperatures during summer months and/or severe operating conditions at proper dilutions. As sold, Shell ROTELLA® ELC NF Pre-Diluted 50/50 provides freeze protection down to -34$^0$F / -36$^0$C and boilover protection up to +265$^0$F / +129$^0$C (with the use of a 103.4 kPa pressure cap). No further dilution is recommended.

- **Extended Life Capability**

  Shell ROTELLA® ELC NF Pre-Diluted 50/50 typically provides an extended life operation up to 1,200,000 miles in Class 8 over the road operation. Please be advised that testing existing coolant is recommended to confirm product integrity (contamination with other coolant chemistry). The recommended practice can be found on Rotella.com to ensure the coolant will provide the optimal performance up to 1,200,000 miles.

- **Compatibility With Other Coolants**

  Shell ROTELLA® ELC NF Pre-Diluted 50/50 is miscible and compatible with other engine coolant (antifreeze), including Shell ROTELLA® ELC, Shell ROTELLA® ELC Ultra, ShellZone® DEX-COOL®. Dilution/mixing with non-equivalent coolants will reduce or eliminate the extended life properties.

  Therefore, do not dilute the product by more than 20% with conventional coolants.

- **Excellent Water Pump Life**

  Shell ROTELLA® ELC NF Pre-Diluted 50/50 helps provide much longer water pump seal life than conventional coolants due to the absence of abrasive dissolved solids. The product also provides cavitation protection to help prevent erosion corrosion wear.

- **No SCA Use Required**

  No supplemental coolant additive (SCA) use is needed during the life of the coolant.

- **Excellent Cavitation (Pitting) Protection**

  Formulation delivers a high level of protection against cylinder liner pitting due to cavitation.

- **Excellent Corrosion Protection**

  Shell ROTELLA® ELC NF Pre-Diluted 50/50 provides excellent corrosion protection of all engine and cooling system metals including aluminium, brass, copper, iron, solder, and steel.

## Main Applications

- **Heavy duty, mixed application antifreeze / coolant**

Shell ROTELLA® ELC NF is designed for commercial and passenger car engines operating on diesel, gasoline, natural gas, propane, LPG or methane based waste gas.

Using the proven OAT technology found in Rotella ELC in nitrite free formulation, Shell ROTELLA® ELC NF provides excellent protection control up to 1,200,000 miles in class 8 over the road operation. Exceptional long life is also expected for all other applications, such as diesel, gasoline and natural gas engine powered vehicles along with LD passenger cars and pick-up trucks.

Shell ROTELLA® ELC NF can be used in automobiles, light duty trucks, medium duty trucks, heavy duty trucks, making it ideal for mixed fleets.

## Specifications, Approvals & Recommendations

Shell ROTELLA® ELC NF is suitable for use against the following specifications:

- ASTM D3306, D4985, D6210 (Meets)
- Cummins CES 14439[1] (Approval)
- Detroit Diesel 93K217 (Approval)
- Ford WSS-M97B44-D (Meets performance)
- General Motors GM 6277M (Meets performance)
- Deutz DQC CB-14 (Approval)
- MTU MTL 5048 (Approval)
- Navistar MPAPS B-1 (formerly Int CEMS B-1) (Approval)
- PACCAR (Meets)
- TMC RP 329, RP 364 (Meets)
- Volvo/Mack STD 418-0005 (Approval)
- CAT EC-1 (Meets performance)

1 Approved for use in all Cummins medium & heavy duty on-road and off-road engines where CES 14439 coolants are specified.

The product is free of amine, nitrite, nitrate, phosphate, heavy metals, and silicate, thus meeting European OEM requirements for phosphate free and heavy metal free coolant and nitrite free coolant, and Japanese OEM requirements for silicate free coolant.

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk.

## Typical Physical Characteristics

| Properties | | | Method | Shell ROTELLA® ELC NF Pre-Diluted 50/50 |
|---|---|---|---|---|
| Appearance, visual colour | | | | Red |
| Freeze point (as produced) | | °C(°F) | ASTM D1177 | -37 (-34) |
| pH as sold | | | ASTM D1287 | 8.3 |
| Reserve Alkalinity | | ml 0.1N HCL | ASTM D1121 | 3.0 |
| Shelf Life (unused) | | | | 5 years |
| Silicon as silicate | | ppm | ICP | None |
| Specific Gravity | @15.6°C | | ASTM D1122 | 1.06 |

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

## Health, Safety & Environment

- **Health and Safety**

Shell ROTELLA® Nitrite Free Pre-Diluted 50/50 is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

Avoid contact with skin. Use impervious gloves with new and used fluid. After skin contact, wash immediately with soap and water. Guidance on Health and Safety is available on the appropriate Safety Data Sheet, which can be obtained from https://www.epc.shell.com

The usual precautions for handling chemicals must be observed. In particular the place of work must be well ventilated, the skin protected and safety glasses worn at all times. Avoid contact with the skin. This product contains a bitterant reducing the chance of accidental ingestion. The product is based on monoethylene glycol and should be kept from children and animals to prevent exposure.

- **Protect the Environment**

  Take used coolant to an authorised collection point.  Do not discharge into drains, soil or water.

## Additional Information

- **Storage Requirements**

  Store at ambient temperatures and limit periods of exposure to temperatures above 35$^{0}$C.

- **Advice**

  Advice on applications not covered here may be obtained from your Shell representative.