



Shell ROTELLA® Fully Formulated AFC with SCA Pre-Diluted 40/60

Phosphate Free, Conventional Pre-Diluted Antifreeze/Coolant

Shell Rotella® Fully Formulated AFC with SCA Pre-Diluted 40/60 Antifreeze/Coolant (AFC) is a conventional heavy-duty AFC pre-diluted to 40% ethylene glycol while maintaining a full treat of corrosion inhibitors to provide the same level of corrosion protection as expected with a traditional 50/50 pre-dilution. The phosphate free formulation meets requirements for OEMs such as Detroit Diesel where a conventional AFC requiring SCA maintenance is used.

DESIGNED TO MEET CHALLENGES

Performance, Features & Benefits

- **Phosphate Free**
Meets Detroit Diesel 93K217 and similar applications where a phosphate free AFC is needed.
- **Warm Climate Use**
Shell Rotella® Fully Formulated Pre-Diluted 40/60 AFC provides protection against freezing at moderate low temperatures while having boil-over protection at high temperatures during summer months and/or severe operating conditions at proper dilutions. Higher level of water increase heat capacity for heat transfer under warm weather conditions.
- **Compatibility With Other Coolants**
Shell HD Rotella® Fully Formulated Pre-Diluted 40/60 AFC is miscible and compatible with other fully formulated engine coolants (antifreeze).
- **No Initial SCA Use Required**
Pre-treated with required levels of SCAs for engine protection.
- **Good Cavitation (Pitting) Protection**
Formulation delivers a high level of protection against cylinder liner pitting due to cavitation when maintained with SCAs.
- **Pre-Diluted, No Further Dilution**
Shell Rotella® Fully Formulated Pre-Diluted 40/60 AFC is diluted with de-ionized water to a 40% dilution but contains the same level of corrosion inhibitors as a traditional 50% dilution.

Main Applications

- **Heavy duty truck, medium duty truck, and industrial applications for antifreeze / coolant**
Shell Rotella® Fully Formulated Pre-Diluted 40/60 AFC is designed for commercial engines operating on diesel, natural gas, propane, LPG or methane based waste gas. Using the traditional inorganic corrosion inhibitors including nitrites, Shell Rotella® Fully Formulated Pre-Diluted 40/60 AFC does require periodic maintenance and monitoring with the use of Supplemental Coolant Additives (SCAs). Shell Rotella® Fully Formulated Pre-Diluted 40/60 AFC is ideal for commercial vehicle and stationary engines in warmer temperature conditions where the higher freeze point adequately protects the engine.

Specifications, Approvals & Recommendations

- ASTM D3306, D4985, D6210
- Caterpillar
- Cummins
- Detroit Diesel 93K217
- Ford ESE-M97B44-E
- General Motors GM 1825M , 1899M
- John Deere H24B1 , H24C1
- Mack Truck
- Navistar CEMS B-1, Type III
- New Holland
- JI Case JIC501
- Waukesha 4-1947D

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

Typical Physical Characteristics

Properties	Method	Shell Rotella® Fully Formulated AFC with SCA Pre-Diluted 40/60
Appearance	Visual colour	Purple
Freeze point (as produced)	ASTM D1177	-24°C
pH, as sold	ASTM D1287	10.5
Reserve Alkalinity	ml 0.1N HCL	5
Nitrite	ppm	1200
Specific Gravity	@15.6°C g/cm ³	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® Fully Formulated Pre-Diluted 40/60 AFC 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 used oil. After skin contact, wash immediately with soap and water.

Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from your Shell representative.

- **Protect the Environment**

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

- **Handling and Protective Measures**

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.

Additional Information

- **Storage Requirements**

Store at ambient temperatures and limit exposure to temperatures above 35°C.

- **Typical Freeze and Boil-over Protection, using a 15 psig (103.4 kPa) pressure cap**

Shell Rotella® Fully Formulated Pre-Diluted 40/60 AFC, Freeze Point Protection = -24°C, Boilover Protection = +128°C

DO NOT DILUTE FURTHER; DO NOT ADD WATER

Warning: Further dilution is not recommended in order maintain adequate freeze and boil-over protection as well as maintaining corrosion protection. If needed, water can be used for top-up in the event of fluid loss. As soon as feasible or after cooling system repairs, replace fluid or adjust with Shell Fully Formulated Pre-Diluted 40/60 AFC to a nominal 40/60 dilution in the cooling system.

- **Advice**

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