

#### **Technical Data Sheet**

Low Emissions Extra Life - Improved Protection

# Shell Rotella<sup>®</sup> T Triple Protection ™ 15W-40 (CJ-4)

Triple Protection Technology - Heavy Duty Diesel Engine Oils

Shell Rotella<sup>®</sup> T Triple Protection oil use the latest "Low-SAPS" additive technology to protect under the most severe conditions found in modern low emission engines. The protective power of the oil is enhanced through the use of high purity "Group II" base oils that provide increased additive activity. It delivers significant improvements in wear protection, deposit control and resistance to breakdown under high temperatures\*.

The exclusive low-ash formulation helps protect the exhaust catalysts and particulate traps found on the latest low emission vehicles. Recommended by a wide range of OEMs, suitable for both the latest low-emissions and older model equipment.

\* Compared to API CI-4 Plus oils

#### ENERGISED PROTECTION Adapting to your engine's changing nee

# Performance, Features & Benefits

## Outstanding wear protection

Demonstrated over millions of miles of customer service, Shell Rotella<sup>®</sup> T Triple Protection provides significantly better wear protection than previous generation oils to maximize engine efficiency and prolong engine life.

## Exceptional Engine cleanliness

Formulated with improved soot control and an exclusive detergent system to deliver outstanding piston and Engine cleanliness.

## • Emissions system Compatibility

The advanced low-ash formulation helps control blocking of particulate filters and poisoning of exhaust after-treatment devices, helping maintain vehicle emission compliance and engine fuel efficiency.

## • Outstanding shear stability

A continued heritage of outstanding shear stability for viscosity control and optimal oil pressure in your engine.

• Exceptional low temperature properties

Helps speed cold starts.

## **Main Applications**



• Severe duty heavy duty Diesel engines Provides outstanding protection for virtually all heavy duty

# • Off-highway applications

Suitable for use in agricultural, mining, logging, and construction applications, even with high levels of fuel Sulfur.

• Hard working diesel and Gasoline engines Suitable for use in pick-up trucks, commercial vehicles, mixed fleets and motorcycles.

# Specifications, Approvals & Recommendations

- API: CJ-4, CI-4 Plus, CI-4, CH-4, CG-4, CF-4, CF.
- API: SM, SL, SJ, SH
- ACEA: E9, E7
- JASO DH-2, MA, MA2
- Caterpillar: ECF-1A, ECF-2, ECF-3
- Cummins: CES 20081
- DDC: 93K218
- Deutz: DQC III-10 LA
- Mack: EO-O Premium Plus
- Ford: WSS-M2C171-E
- MAN: M3575
- MB Approval: 228.31
- MTU: Category 2.1
- Renault Trucks: RLD-3
- Volvo VDS-4

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

Diesel engines, including the latest emission controlled engines using EGR and containing a Diesel Particulate Filter.

# Typical physical characteristics

| Properties          |        |          | Method     | Shell Rotella T Triple<br>Protection (CJ-4) |
|---------------------|--------|----------|------------|---|
| SAE Viscosity Grade |        |          |            | 15W-40                                      |
| Kinematic Viscosity | @40ºC  | mm²/s    | ASTM D445  | 120   |
| Kinematic Viscosity | @100ºC | mm²/s    | ASTM D445  | 15.5  |
| Viscosity Index     |        |          | ASTM D2270 | 135   |
| density             | @15ºC  | kg/l     | ASTM D4052 | 0.879                                       |
| Sulfated Ash        |        | %        | ASTM D874  | 1.0   |
| Total Base Number   |        | mg KOH/g | ASTM D2896 | 10.1  |
| Flash Point (COC)   |        |          | ASTM D92   | 204   |
| Pour Point          |        | ٥C       | ASTM D97   | -30   |

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

## Heath, Safety & Environment

#### • Health and Safety

Shell Rotella T Triple Protection 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 authorized collection point. Do not discharge into drains, soil or water.

#### **Additional Information**

#### • Advice

Product recommendations on applications not listed here may be obtained from your Shell representative.