

THE SHELL HEAVY-DUTY ENGINE ANTIFREEZE/COOLANT PRODUCT PORTFOLIO



COMPLETE PROTECTION FOR YOUR HEAVY-DUTY ENGINE

The Shell family of heavy-duty motor oils and coolants are formulated to provide high-performance protection for today's heavy-duty diesel engines.

The Shell brand is excited to offer a complete product line of extended life coolants (ELC) and Fully Formulated engine coolant, designed to deliver:

- **Protection against overheating** – Excellent heat transfer properties allow heat to transfer more effectively, protect against freezing and boil-over and help keep engines running cool
- **Corrosion protection** – Corrosion inhibitor technology protects metals against all forms of corrosion
- **Maintenance savings** – Technology helps extend coolant life and prolong the life of seals, hoses and other cooling system components – helping reduce overall maintenance costs

ELCs are designed to go a minimum of 600,000 on-highway miles and beyond with proper monitoring and provide overall reduction in cooling system maintenance. ELCs also offer complete cooling system component protection by helping to reduce water-pump failures, hard-water-scale deposits and silicate gel (the green goo you sometimes see). We understand consumers' challenges and have designed a product portfolio to help make maintenance needs easier.

Our most advanced coolants, Shell ROTELLA ELC™, Shell ROTELLA ELC™ Nitrite-Free, and Shell HD Phosphate are formulated to meet more severe operational conditions of modern, hotter-running engines. This is particularly important for new emission engines, especially those with EGR.

PRODUCT FEATURES AND BENEFITS

Today's modern engines demand effective heat transfer, freeze and boiling protection and corrosion protection for the cooling system. Shell ROTELLA® extended life coolants and Fully Formulated coolants satisfy these requirements.

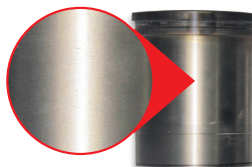
HOW SHELL COOLANTS COMPARE TO EACH OTHER			
SHELL COOLANT BENEFITS	SHELL ROTELLA® ELC NITRITE FREE	SHELL ROTELLA® ELC	SHELL HD PHOSPHATE
RELATIVE PROTECTION AGAINST FREEZE AND OVERHEATING			
Freeze and boil-over protection	★ ★ ★	★ ★ ★	★ ★ ★
Heat transfer	★ ★ ★	★ ★ ★	★ ★ ☆
Anti-scaling properties	★ ★ ★	★ ★ ☆	★ ☆ ☆
PROTECTION OF ENGINE AND COOLING SYSTEM COMPONENTS FROM CORROSION			
Aluminum corrosion protection	★ ★ ★	★ ★ ☆	★ ☆ ☆
Copper/brass corrosion protection	★ ★ ★	★ ★ ☆	★ ☆ ☆
Oxidation – thermal stability	★ ★ ★	★ ★ ☆	★ ☆ ☆
Cylinder liner pitting corrosion protection	★ ★ ★	★ ★ ★	★ ★ ★
Compatible with elastomers and seals	★ ★ ★	★ ★ ☆	★ ★ ☆
Resistance to gel precipitate formation	★ ★ ★	★ ★ ★	★ ☆ ☆
HELPS REDUCE OVERALL MAINTENANCE COSTS			
Non-depleting inhibitors	★ ★ ★	★ ★ ☆	★ ☆ ☆
Maintenance (Testing, SCAs)	★ ★ ★	★ ★ ★	★ ☆ ☆
Service Life	★ ★ ★	★ ★ ★	★ ☆ ☆

* Cylinder liner protection maintained with addition of SCAs.

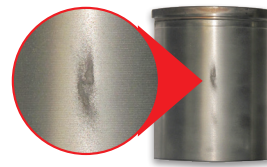
Shell antifreeze/coolant family offers a complete line of heavy-duty coolants and complements the Shell ROTELLA® portfolio of high-performance engine oils. For questions please contact your sales representative.



Shell ROTELLA® ELC Nitrite Free extended-life coolant has demonstrated outstanding performance in protecting cylinder liners from pitting corrosion damage in 600,000+ mile field testing.



Cylinder liner of modern 1.5L diesel engine after 600,000+ miles on Shell ROTELLA® ELC Nitrite Free exceeds current industry standard for corrosion protection.



Cylinder liner showing pitting damage, meets current industry standard for corrosion protection.

WHICH SHELL PRODUCT IS RIGHT FOR YOU?

EQUIPMENT	OEM SPECIFICATION/ PERFORMANCE LEVEL	APPROVALS (A), MEETS(M), RECOMMENDS (R)	SHELL ROTELLA® ELC NITRITE FREE
CUMMINS	CES 14439	A	<ul style="list-style-type: none"> ■ Proven Shell ROTELLA® ELC Nitrite Free Organic Additive Technology free of nitrites, silicates, phosphates, amines, and heavy metals ■ Up to 1,200,000 miles or 24,000 hours in Class 8 trucks*, up to 600,000 miles or 12,000 hours in other commercial applications, or 150,000 miles (6 years) in passenger cars and light trucks* ■ Helps lower maintenance costs ■ Meets ASTM D3306, D6210 ■ Excellent heat transfer ■ Mixed fleet performance (passenger cars to HD trucks) suitable for Ford WSS-M97B44-D, GM 6277M and GMW3420
DETROIT DIESEL	DFS 93K217	A	
NAVISTAR	MPAPS B-1	M	
PACCAR		M	
VOLVO/MACK	TSI 184-001	M	
MTU	MTL 5048	A	
VERMEER			
DEUTZ	DQC CB-14	A	
EQUIPMENT	OEM SPECIFICATION/ PERFORMANCE LEVEL	APPROVALS (A), MEETS(M), RECOMMENDS (R)	SHELL ROTELLA® ELC
CATERPILLAR	EC-1	M	<ul style="list-style-type: none"> ■ Proven Shell ROTELLA® ELC Organic Additive Technology free of phosphates and amines ■ Up to 600,000 miles or 12,000 hours of service life with NO need for supplemental coolant additives (SCAs) or ELC Extenders. ** ■ Excellent heat transfer ■ Helps lower maintenance costs ■ Meets ASTM D3306, D6210
CUMMINS	CES 14439	A	
NAVISTAR	MPAPS B-1	M	
VOLVO/MACK		M	
SHELL HD PHOSPHATE FREE AFC			
OFFERED FOR CUSTOMERS WANTING A FULLY FORMULATED COOLANT IN A WIDE VARIETY OF COMMERCIAL TRUCKS AND EQUIPMENT			<ul style="list-style-type: none"> ■ Premium quality fully formulated coolant containing supplemental coolant additives (SCAs) to provide complete engine and cooling system protection ■ Service life is typically 200,000–250,000 miles/2–3 years and requires monitoring and maintaining SCA additive levels ■ Highly stabilized, low silicate formula reduces deposits ■ Meets ASTM D3306, D4985, D6210

*Requires full use of Shell Rotella® ELC Nitrite-Free 50/50 Coolant + Antifreeze in the system and proper maintenance. Proper maintenance as detailed at shell.us/coolants. Follow OEM recommendations for specified maintenance.

**When needed, Rotella ELC Correction Fluid can be used to extend the service life of the Rotella ELC.

All coolants meet ASTM D3306/D6210 Our recommendations are based on industry and manufacturer trends.

To learn more about our products, call our customer service technical support at 1-800-237-8645.