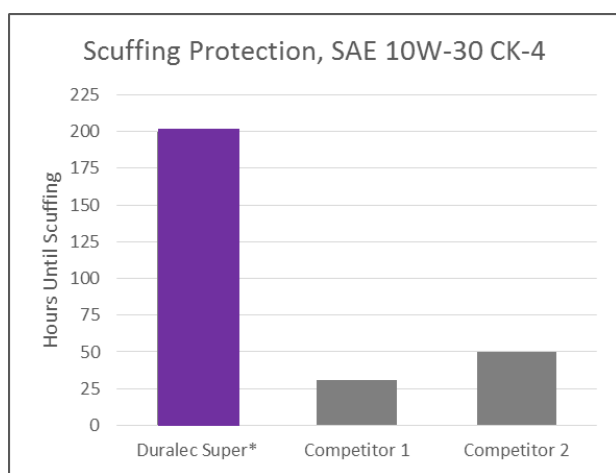


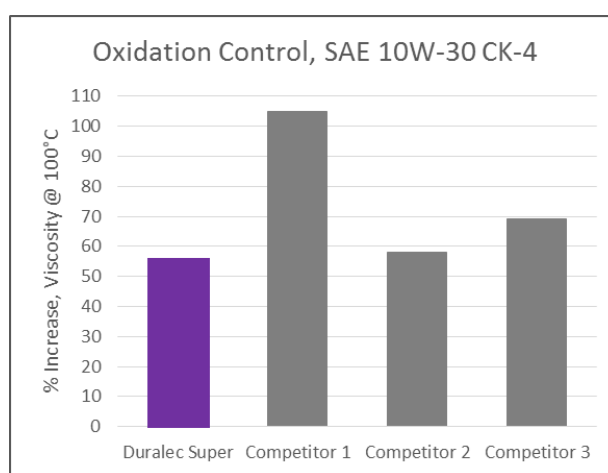
Duralec® Super

PRODUCT DESCRIPTION

Royal Purple® Duralec® Super motor oil is a high performance, heavy-duty diesel engine oil made for those diesel engines requiring the use of an emissions compliant oil for newer, emissions controlled diesel engines. Duralec Super is specifically formulated to provide unsurpassed engine protection while also protecting emissions system components, such as diesel particulate filters, diesel oxidation catalysts, and selective catalyst reduction systems.



*Duralec Super tested for greater than 200 hours with no scuffing



Duralec Super motor oil is specifically formulated to maximize engine life and reliability, extend oil drain intervals, and improve fuel economy and efficiency. High-quality, premium base stocks and top-tier API CK-4 additive chemistry provides excellent high temperature operation and resistance to thermal breakdown, as well as exceptional low temperature pumpability to minimize wear at cold-start. Scuffing and wear protection, as well as resistance to oxidation (oil aging) and oil thickening are unmatched by Competitor API CK-4 formulations (see graphics above). Unlike some diesel engine oils, Duralec Super is heavy-duty only, and does not restrict additive chemistry to satisfy passenger car oil specifications. This allows more anti-wear additive in the formulation for greater wear protection.

FEATURES and BENEFITS

- GREATER WEAR PROTECTION – Prevents wear of piston rings, valve train, and other components beyond CK-4 requirements
- LONGER OIL DRAIN INTERVALS – Enhanced oxidation resistance reduces oil aging, acidity build-up, and viscosity increase
- SUPERIOR CORROSION PROTECTION - No rust observed in standard industry testing
- REDUCED EXHAUST EMISSIONS – Highly stable and protective formula improves cylinder seal and protects emissions equipment
- OUTSTANDING DEPOSIT CONTROL – Keeps engines cleaner, ensuring maximum performance

- LOW ASH FORMULATION – Satisfies requirements of engines requiring the use of API CK-4 and CJ-4 reduced SAPS specifications

SPECIFICATIONS and APPROVALS

	10W-30	5W-40	15W-40
API CK-4*	X	X	X
ACEA E7-16, E9-16	•	•	•
CAT ECF-3	•	•	•
Cummins CES 20086	•	•	•
Daimler MB 228.31	•	•	•
Detroit Diesel DFS 93K222	•	•	•
Deutz DQC III-10 LA	•	•	•
Ford WSS-M2C171-F1	•	•	•
JASO DH-2	•	•	•
Mack EO-S-4.5	•	•	•
MTU Type 2.1	•	•	•
Renault RLD-4	•	•	•
Volvo VDS-4.5	•	•	•

X - Formally licensed / registered

- - Recommended for use / meets requirements

*Backwards compatible with prior requirements

PRODUCT DATA

Typical Properties				
Property	Test Method	10W-30	5W-40	15W-40
Viscosity @ 40°C, cSt	ASTM D445	81.9	93.3	108
Viscosity @ 100°C, cSt	ASTM D445	12.1	15.2	15.2
Viscosity Index	ASTM D2270	144	172	146
Flash Point, °C (°F)	ASTM D92	223 (434)	224 (435)	234 (454)
Pour Point, °C (°F)	ASTM D97	-45 (-49)	-48 (-54)	-45 (-49)
Cold Crank Simulator, cP	ASTM D5293	6,087 @ -25°C	6,370 @ -30°C	4,628 @ -20°C
Base Number, mg KOH/g	ASTM D2896	9.3	10.1	10
Sulfated Ash, wt%	ASTM D874	0.99	1	0.98

HEALTH and SAFETY

Health and safety recommendations for products can be found on the Safety Data Sheet (SDS) www.royalpurple.com