



GULF WESTERN OIL

TOP DOG[®]
INDESTRUCTIBLE

SEVERE DUTY DIESEL ENGINE OIL

TOP DOG® INDESTRUCTIBLE 15W-40 SEMI-SYN

NEXT GENERATION SEVERE DUTY DIESEL ENGINE OIL FORMULATED USING INDESTRUCTIBLE ADDITIVE TECHNOLOGY

DESCRIPTION

Today's Heavy Duty Diesel Engines are expensive, more technically advanced than ever before with ever increasing oil drain intervals. Our customers fleet are often the back bone of their business, with reliability and component life meaning everything. Gulf Western TOP DOG® INDESTRUCTIBLE has been formulated using our indestructible additive technology. Making engines stay cleaner, use less fuel and last longer. TOP DOG® INDESTRUCTIBLE 15W-40 meets the majority of modern engine manufacturer's specifications. It is formulated to meet API CK-4, which is the latest Heavy Duty Diesel Engine Oil classification released in January 2017 by the American Petroleum Institute.

It meets the specifications of modern and older engine manufacturers and OEM's and is backward compatible with API CJ-4 and CI-4 engine oil specifications. It is suitable for Heavy Duty Diesel Engines fitted with EGR (exhaust gas recirculation) systems and those fitted with DPF's (Diesel Particulate Filters). Being backward compatible with API specifications, it is an ideal mixed fleet / universal engine oil.

SUMMARY OF BENEFITS

- Increased fuel economy through reduced friction
- Extended drain intervals compared to earlier generation API grades
- Vastly improved oxidation control
- Suitable for EGR (exhaust gas recirculation) engines
- Low SAPS formulation offering suitability for Diesel Particulate filters
- Better dispersancy compared to conventional API CK-4 and CJ-4 specifications resulting in cleaner engines that offer increased service life
- Increased shear stability resulting in decreased oil consumption
- As illustrated in the chart below, TOP DOG® INDESTRUCTIBLE 15W-40 offers advanced levels of engine protection compared to API CJ-4 and even the new conventional API CK-4 specification.

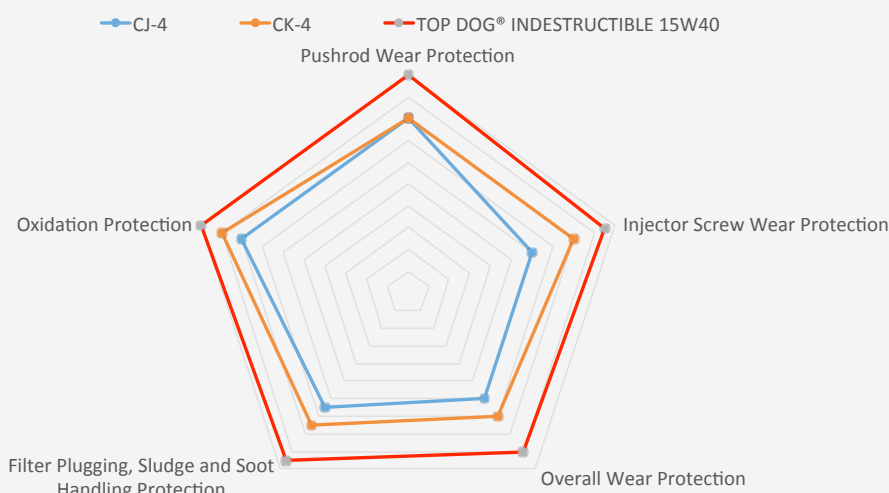
TOP DOG® INDESTRUCTIBLE 15W-40 performance is beyond CK-4 and other conventional Heavy Duty Diesel Engine Oils

SPECIFICATIONS

Top Dog® INDESTRUCTIBLE 15W-40 meets the following international performance specifications:

- API CK-4 / CJ-4 / CI-4
- Caterpillar ECF-3
- Ford WSS-M2C171-F1
- Cummins 20086, 20081
- Detroit Diesel DFS93K222, 93K218
- Mack EO-O Premium Plus
- Mack EOS-4.5
- Volvo VDS-4.5 / VDS-4
- Renault VI RLD-4, Renault VI RLD-3
- ACEA E7(16), E9(16)
- Mercedes Benz 228.31
- MAN 3575
- Deutz DQC III-10 LA
- JASO DH-2

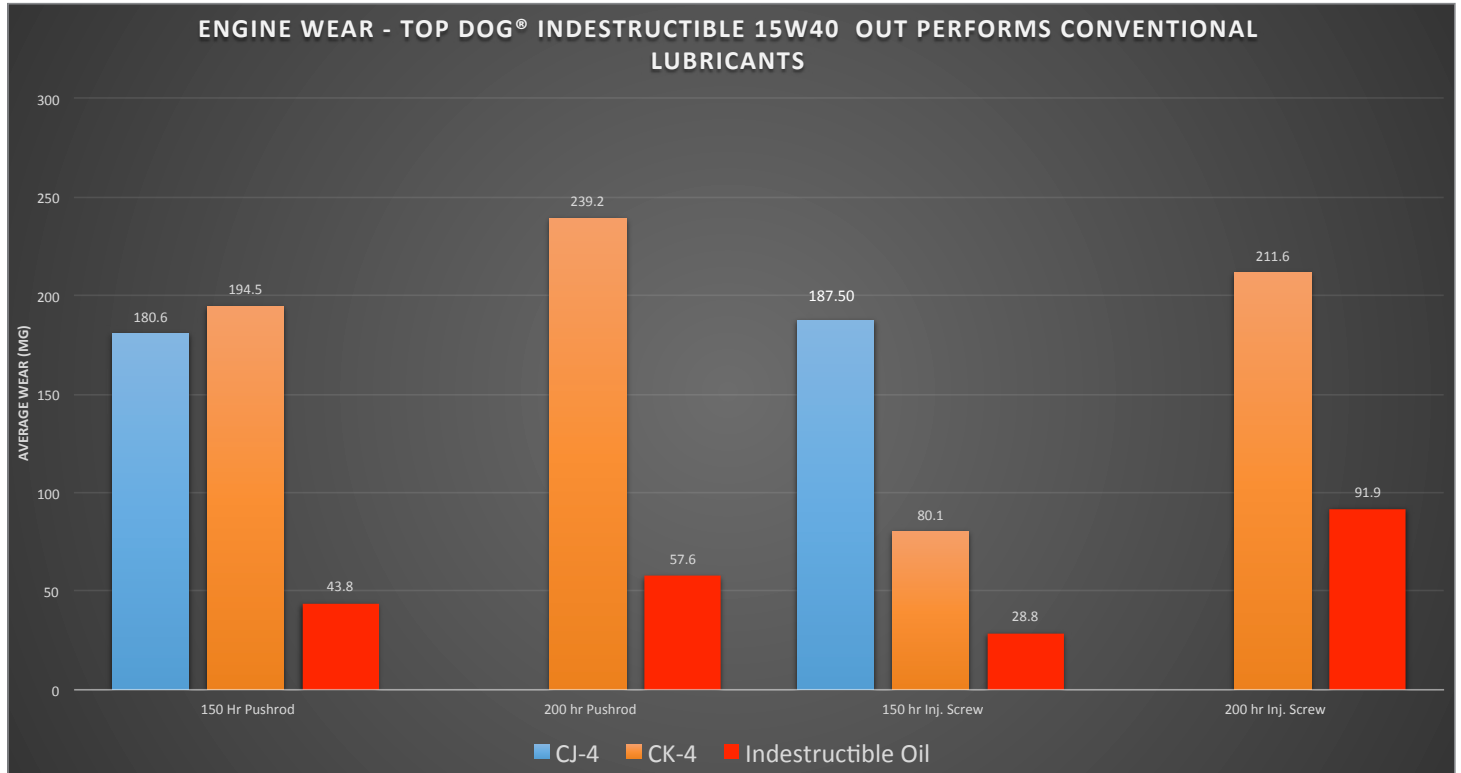
TOP DOG® INDESTRUCTIBLE 15W40 PERFORMANCE VERSUS NORMAL CJ-4 / CK-4 GRADES



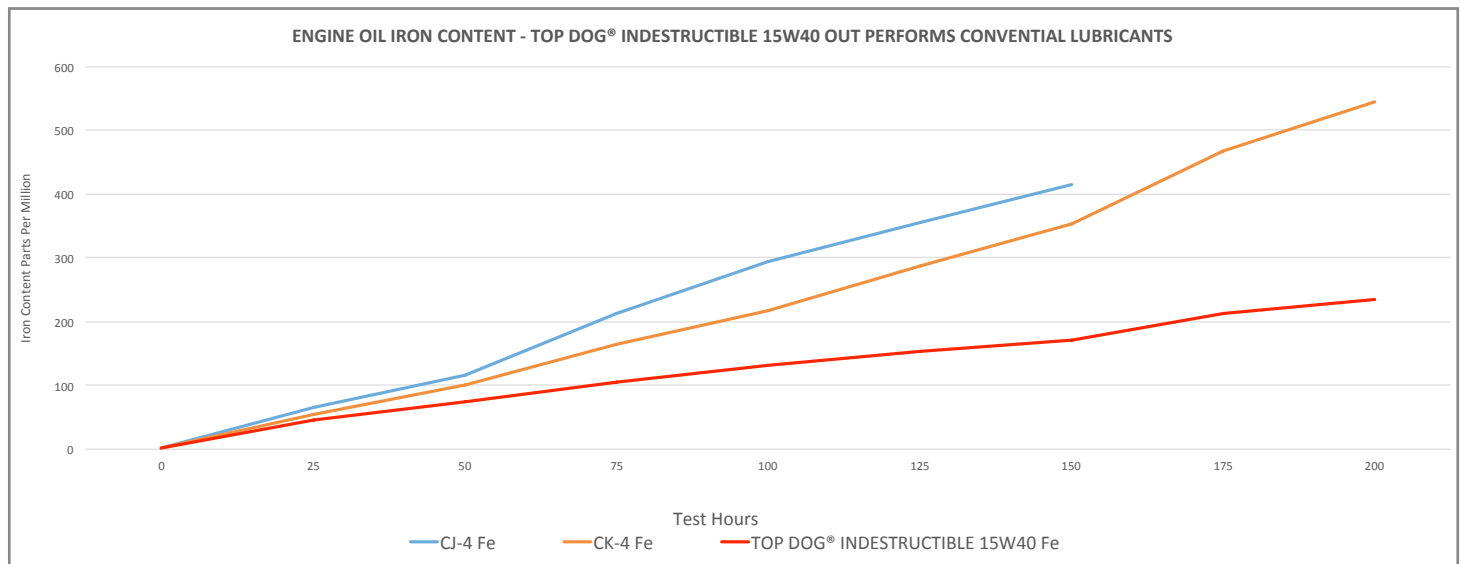
- The following chart illustrates the improved engine wear TOP DOG® INDESTRUCTIBLE 15W-40 offers on a 150 hour and 200 hour ISM engine test compared to specifications API CJ-4 and even the new conventional API CK-4 chemistry. TOP DOG® INDESTRUCTIBLE 15W-40 performance is beyond CK-4 and other conventional Heavy Duty Diesel Engine Oils.

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- Engine Test Data shown below verifies TOP DOG® INDESTRUCTIBLE 15W-40 has 52% less wear than conventional API CK-4 and 59% less wear than API CJ-4 at 150 hours during the severe service ISM Engine Test. TOP DOG® INDESTRUCTIBLE 15W-40 performance is beyond CK-4 and other conventional Heavy Duty Diesel Engine Oils.

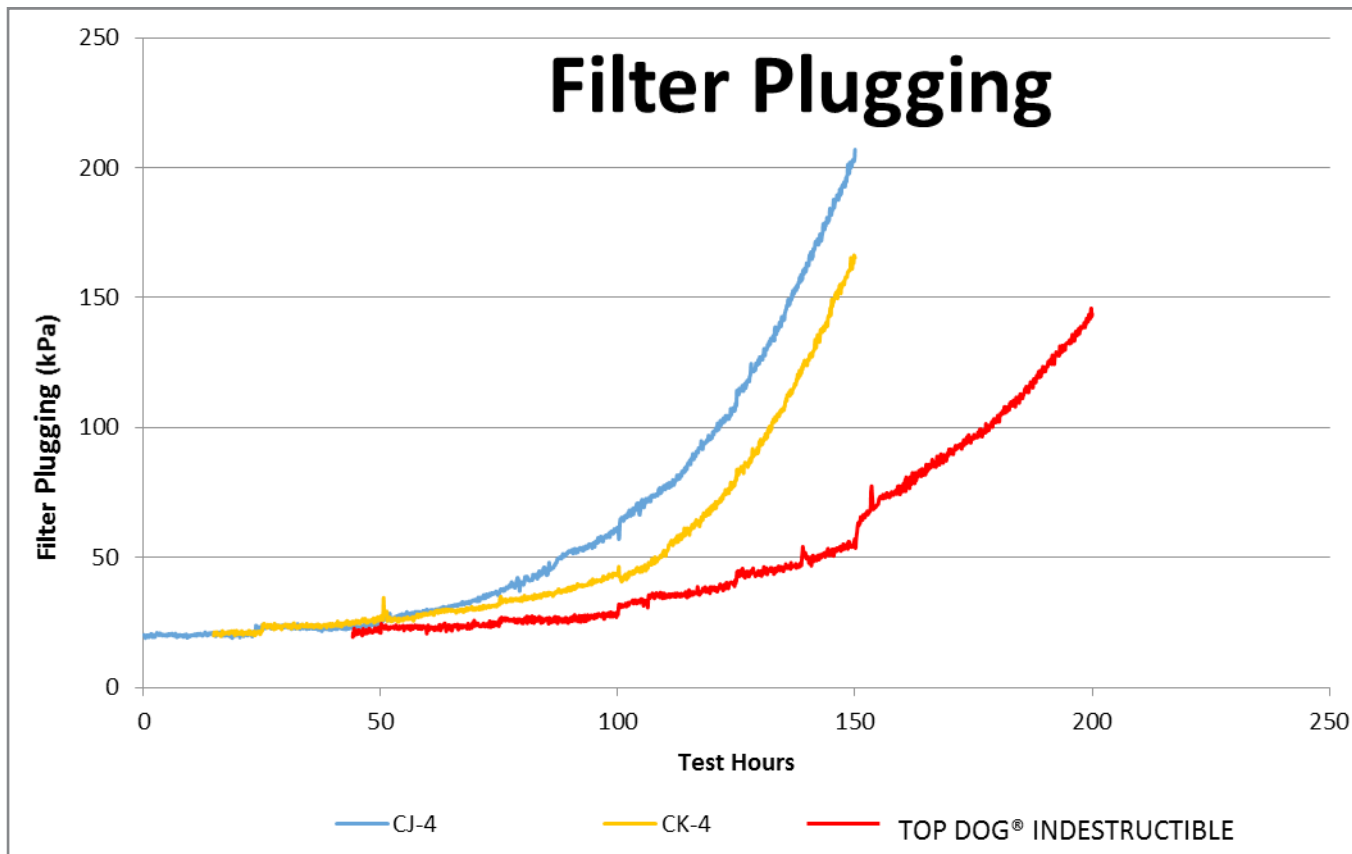


- Significant improvement in dispersancy compared to API CJ-4 chemistry. TOP DOG® INDESTRUCTIBLE 15W-40 offers contamination control performance much below API CK-4 limits. This ensures pumpability even in extremely high soot generating engines. TOP DOG® INDESTRUCTIBLE 15W-40 performance is beyond CK-4 and other conventional Heavy Duty Diesel Engine Oils.
- TOP DOG® INDESTRUCTIBLE 15W-40 handles contaminants 77% better than API CJ-4 engine oils and 71% better than conventional API CK-4 engine oils. TOP DOG® INDESTRUCTIBLE 15W-40 performance is beyond CK-4 and other conventional Heavy Duty Diesel Engine Oils.

TOP DOG® INDESTRUCTIBLE 15W-40 CK-4

CONTAMINATION CONTROL

Severe Service Cummins ISM Performance



Dirty Pump Screen - Conventional CJ-4



Clean Pump Screen
- TOP DOG® INDESTRUCTIBLE 15W-40

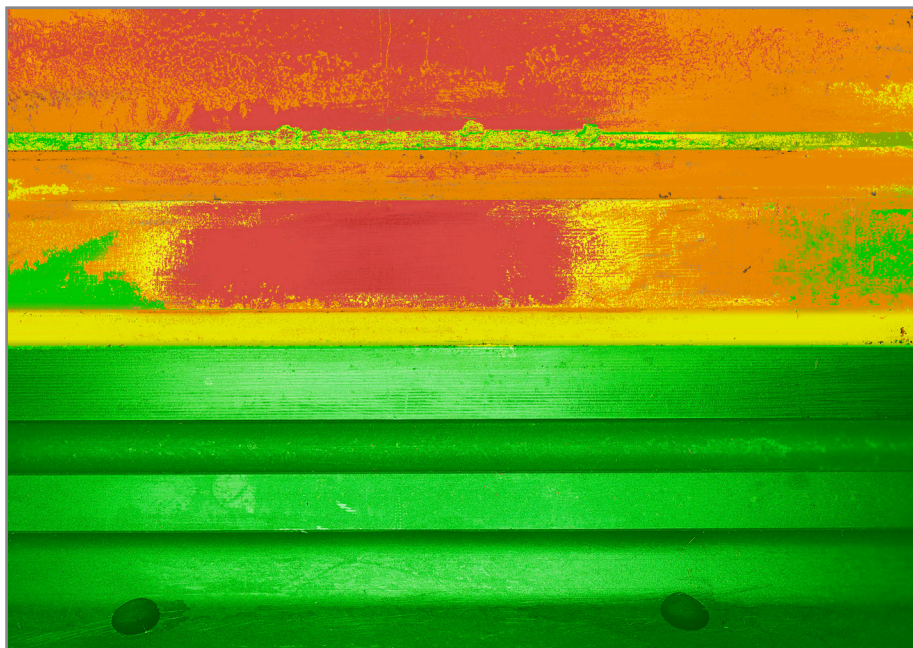


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GO THE DISTANCE

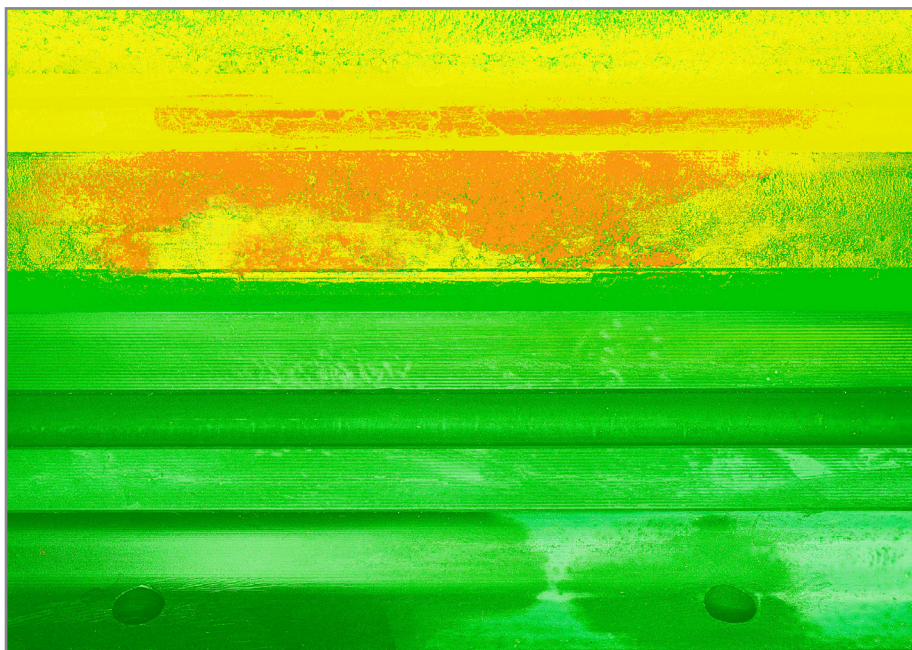
TOP DOG® INDESTRUCTIBLE 15W-40 CK-4

WEAR PROTECTION

Worn Piston Optical View DDC - Conventional CJ-4 (below)



Worn Piston Optical View DDC - TOP DOG® INDESTRUCTIBLE 15W40 (below)



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GO THE DISTANCE



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GO THE DISTANCE

TYPICAL CHARACTERISTICS

	Test Method	Units	Results
Density @ 15°C	ASTM D1298	kg/L	0.875
Kinematic Viscosity			
@ 40°C	ASTM D445	cSt	120
@ 100°C	ASTM D445	cSt	15.5
Viscosity Index	ASTM D2270	-	141
Apparent Viscosity @ -20°C	ASTM D5293	cP	5000
Pour Point	ASTM D97	°C	-30
Flash Point (COC)	ASTM D92	°C	210
Total Base Number	ASTM D2896	mgKOH/g	10.2
Sulphated Ash	ASTM D874	% mass	<1.00

GULF WESTERN PREMIUM QUALITY LUBRICATING OILS (AUST) PTY LTD

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