

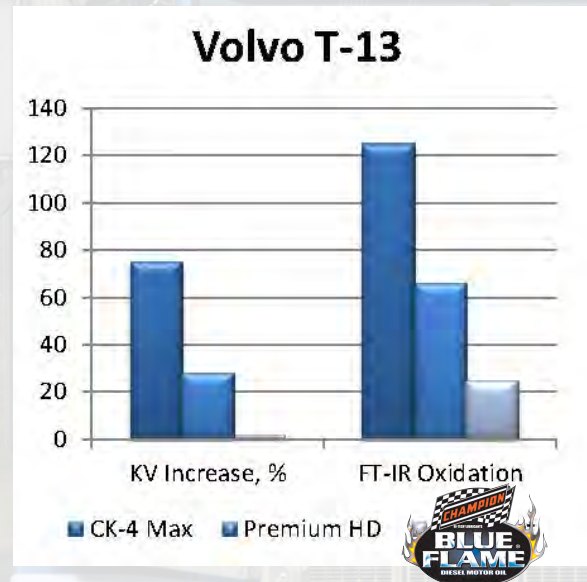
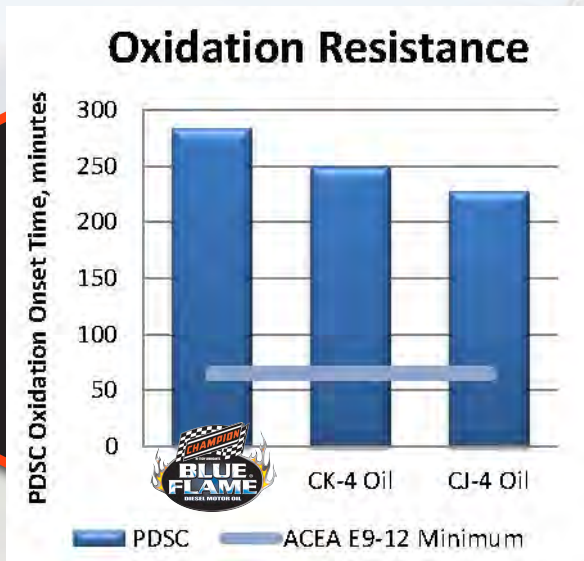


# BLUE FLAME API CK-4

**Champion Blue Flame® Synthetic Blend series engine oils** are designed to provide industry-leading performance to meet the needs of the next generation of heavy duty engines. Increased power density, reduced oil volume and extended drain intervals place unique demands on engine oils to control oxidation by-products, sludge and deposits. Due to higher shear stress and lower viscosity minimums for engine oils, only oils with the highest wear protection and viscosity stability can maximize the performance and life of advanced diesel engines.

**Oxidation Control-** Champion Blue Flame® Synthetic Blend series engine oils take oxidation resistance to another level, allowing users to achieve longer drain intervals, reduce maintenance and downtime, and extend engine life. Controlling oxidation, corrosive acids, sludge and varnish precursors allows for extended drains and minimized wear even under the most extreme conditions. Synthetic base oils provide reduced volatility and oil consumption, further reducing the build-up of sludge and varnish.

- Oxidation lower than OEM limits in over 60,000 mile on-highway and 600 hour off-highway drain intervals.
- Proprietary additives and synthetic base oils have shown up to 80% reduction in Volvo T-13 oxidation.



**Wear Control-** Champion Blue Flame® Synthetic Blend series engine oils keep your engines going longer by reducing engine wear, preventing high temperature corrosion and controlling abrasive soot contamination, even while allowing for improved fuel economy and lower total cost of ownership. Synthetic base oils improve cold-flow properties and reduce start-up wear, leading to extended engine life and performance.

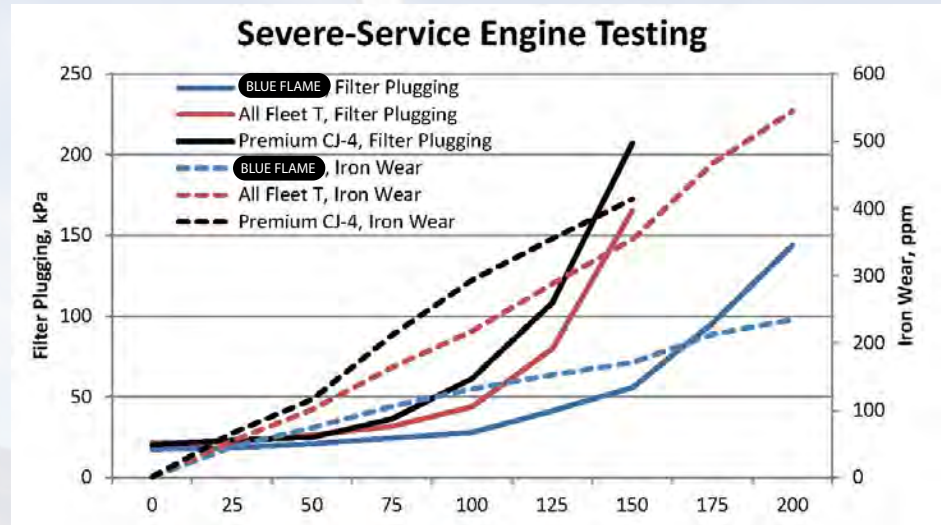
- Over 75% less pushrod wear, 85% less injector screw wear and 70% better resistance to filter-plugging than CJ-4 oils in proprietary, extra-severe engine testing.
- Outperformed corrosion bench testing limits by 70% for copper and over 98% for lead and tin.
- Cold-pumping viscosity 72% lower (SAE 15W-40) and 69% lower (SAE 10W-30) than J300 limits, providing excellent lubrication and wear protection at start-up.





# BLUE FLAME API CK-4

17,000,000+ miles on-road field testing  
23,000+ hours off-road field testing



Backed by Top-Tier Technology and Testing Practices  
Advanced Protection for Older and Newer Heavy-Duty Engines

Champion Blue Flame® Synthetic Blend CK-4 Oils Meet or Exceed the Following Specifications:

- API CK-4, CJ-4, CI-4 Plus
- Volvo VDS-4.5, VDS-4
- Detroit Diesel DFS93K222
- Renault VI RLD-3
- ACEA E7-12, E9-12
- Cummins CES 20086, CES 20081
- Ford WSS-M2C171-F1
- CAT ECF-3
- JASO DH-2
- Detroit Diesel DFS93K218
- Mack EO-O Premium Plus

Part Number	Method	SAE 15W-40
Part Number		<b>4358</b>
Viscosity @ 40°C, cSt	D445	15.7
Viscosity @ 100°C, cSt	D445	117.2
Viscosity Index	D2270	142
Cold-Cranking Viscosity, cP	D5293	4,800 @ -20°C
Pumping Viscosity, cP	D4684	16,500 @ -25°C
HTHS @ 150°C, cP	D4683	4.4
NOACK Volatility, %	D5800	8
Zinc, ppm	D4951	1250
Phosphorous, ppm	D4951	1140
Oxidation Resistance, mins	D6186	283
TBN, mgKOH/g	D2896	10.2

Buy quality oils, fluids, lubricants in our online store.