



NOT ALL OILS MEET INDUSTRY STANDARDS. **SHELL ROTELLA® T4 15W-40 DOES.**

When you buy a Shell Rotella® heavy duty engine oil, you rely on our brand to deliver on our promise of protection for your vehicle. That promise is demonstrated by the approvals and specifications that are printed on the label of each Shell Rotella® product.

Shell spends countless hours of work, not only in the laboratory, but also in the real world, to make sure that trust is deserved. Shell also routinely collects and tests competitor oils (competitor benchmarking) to compare our product's performance against the competition. Recently, Shell ran the industry standard Volvo T-13 test at an independent testing facility using Mobil Delvac 1300 Super 15W-40. The sample was sent blind to eliminate bias.

The Volvo T-13 is a grueling 360-hour, severe high temperature oil oxidation test. The test pushes oil marketers to develop engine oils that are resilient in challenging operating environments of newer, more fuel-efficient engines. The Volvo T-13 is a key barrier against engine oils with inadequate oxidation protection.

The test limits for the Volvo T-13 focus on two standard measurements: Kinematic Viscosity at 40°C (KV 40) in the last 60 hours of the test (ASTM D445) and oxidation by infra-red spectroscopy. These limits are important as they represent the baseline for API CK-4 limits and the more stringent OEM limits. This new test was devised to set the bar for the API CK-4 category of engine oil, designed to include advanced oxidation stability and shear stability.

Oxidation stability of an engine oil refers to its capability to resist thermal and chemical breakdown during engine operation. It is a key indicator of an engine oil's ability to protect the engine itself and engine hardware.

Using an engine oil that lacks oxidation stability can lead to several engine maintenance and performance issues, such as:

- Deposit build up on engine parts that can lead to reduced oil drain intervals and shorter engine life
- More corrosion of engine parts that can lead to greater wear and potentially damage your engine, which could lead to shorter engine life
- Higher viscosity of oil that can lead to reduced engine efficiency and fuel economy

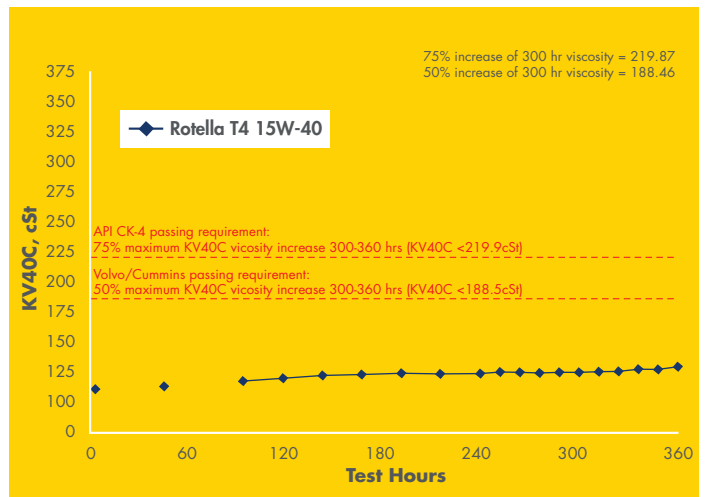
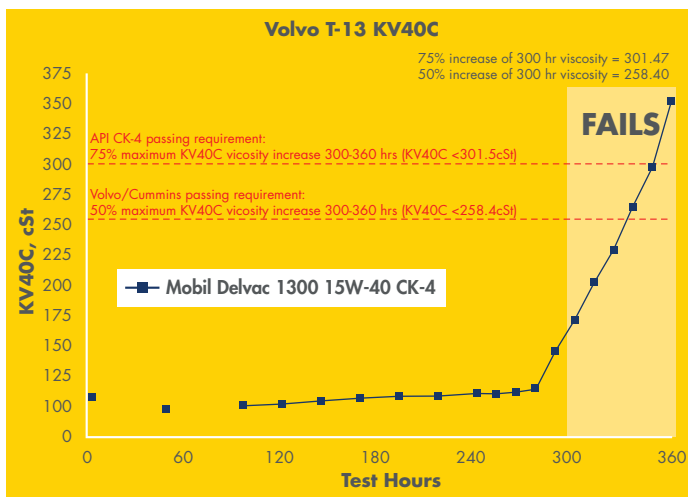
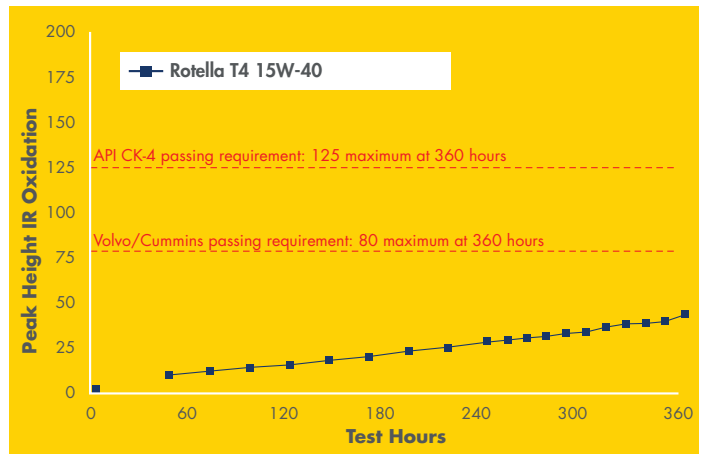
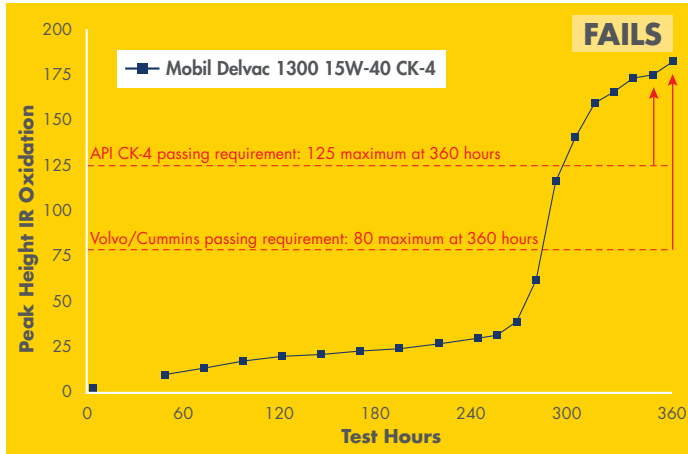


* Sample purchased in 2018 and Volvo T-13 test completed by an independent testing facility in February 2018.

Shell
ROTELLA®

The Engine Oil That Works As Hard As You.™

HERE ARE THE RESULTS OF THE VOLVO T-13 TEST:



The dotted lines denote the passing requirements for API CK-4, Mack EOS 4.5, Volvo VDS 4.5 and Cummins CES 20086 approvals. To pass these limits, the test oil must surpass 360 hours before breaking the API and OEM limits for oxidation by infra-red and KV 40 in the last 60 hours of the test. This sample of Mobil Delvac 1300 Super 15W-40 engine oil does not meet the minimum API CK-4 requirements or the Volvo/Mack or Cummins OEM requirements.

Shell Rotella® T4 Triple Protection 15W-40 engine oil has minimal increase in the peak oxidation and the kinematic viscosity measured at 40 degrees Celsius.

As you can see, not all oils are equal. At Shell, we believe in maintaining your trust in our products. We know that your truck is more than just a truck. That's why it deserves more than just any oil.