CK-4/FA-4: A Look at One Year in the Industry

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The launch of API CK-4 and FA-4 heavy duty diesel engine oils Dec. 1, 2016 was widely considered to be the largest specification overhaul in the history of the North American heavy duty lubricant market. Driven by environmental regulations, the new oil standards have been introduced to help reduce Greenhouse Gas (GHG) emissions and meet the needs of modern fuel efficient engines.

API CK-4 and FA-4 oils have been specifically developed to offer these new, modern engines better protection through improved oxidation stability, resistance to aeration and better shear stability, as compared to their API CJ-4 predecessors.

So, over a year from the specification launch, how has the industry responded? What level of uptake has there been of API FA-4, the lower HTHS (High Temperature High Shear) viscosity oil? And for those yet to transition, what do they need to know about how the new categories can benefit their operations?

Increased Performance and Fuel Economy

API CK-4 and FA-4 oils have been designed to enhance performance and to be more durable than their predecessors. As a result, they're more robust and resistant to oxidation, which allows for longer drain intervals and less downtime when used in conjunction with an oil analysis program such as Petro-Canada Lubricants' LUBE 360 Oil Diagnostics. The actual oil drain intervals, however, will depend on the severity of service and type of application, and we recommend consulting with the OEM manual to ensure proper recommendations are followed.

The oils have also been developed to increase shear stability, which measures the ability of an oil to stay in SAE viscosity grade. The shearing of the oil means it can become thinner and less protective, for example, an SAE 40 grade could drop to SAE 30. Together, these improvements can offer greater hardware protection in the long-term and may reduce vehicle downtime – a major source of financial drain for fleet operators.

API FA-4 oils can also offer improved fuel economy. With a considerably lower viscosity, FA-4 oils reduce friction in the engine and therefore fuel consumption, while providing increased levels of wear protection. These oils are expected to deliver up to two percent improved fuel economy over conventional SAE 15W-40s, and better fuel economy compared to an API CK-4 SAE 10W-30 diesel engine oil in on-road service, depending on driving conditions.

It's important to be aware, however,

that FA-4 licensed oils are engineered for newer engines and have limited backwards compatibility because some older engines are not designed to operate with such low HTHS viscosity oils. Our advice is to consult with the engine OEM for specific guidance regarding the recommended viscosity grade for their engines.

The Transition

Our customers have told us that their transition to DURON™ next generation API CK-4 oils has been smooth, with no or minimal disruption to their business operations. We believe that's a testament to the preparation, education, communication and planning that took place in the lead-up to the launch.

We continue to conduct extensive real world testing with our customers and we continue to demonstrate performance that is expected from the industry's strongest line up.

For example, we conducted a real world field trial of our API CK-4 product, DURON SHP 15W-40, with DLM Trucking, a customer of one of our distributors. The trial included four Kenworth trucks powered by PACCAR MX-13 and Caterpillar C-15 engines, and covered both heavy-haul and OTR (over the road) routes. DLM saw the results almost immediately and were able to directly compare the performance of DURON against the competitor oil they had previously used for more than 30 years.

The testing allowed drain intervals to safely be doubled from 20,000 miles to 40,000 miles, and the engine oil's Base Number (BN) at 20,000 miles was 2.5 times better with DURON than it had been with DLM's previous oil. In addition, the testing resulted in increased resistance to oxidation and nitration, and viscosity retention also improved. This was a clear demonstration of the performance and value of the DURON product line.

2018 and Beyond

As API FA-4 oils have specifically been designed for some of the new models of 2017 on-highway engines, the adoption has undoubtedly been slow industry-wide. However, the uptake is expected to increase as OEMs release their recommendations for 2017+ vehicles and fleet owners see evidence of the cost, fuel and operational efficiencies the new oil offers.

For fleets consisting of pre-2017 vehicles, owners can obtain improved fuel economy by utilizing CK-4 SAE 10W-30, even more so compared to SAE 15W-40 oils. To ensure the best oil viscosity grade for the engine, we recommend consulting the OEM manual.

We've pledged to support both the industry and our customers as they manage the changes and their API CK-4 and FA-4 journey. For those on this path, our online educational platform www.duron-thetougherthebetter.com is open for the wider industry and direct support is in place from our sales teams for those customers transitioning to the DURON Next Generation product line. And for more information on the DURON Challenge, visit *DURONChallenge.com*.