

Farrell Oil Newsletter 2006

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Diesel Oils Trend Toward OEM Specs

Proprietary specifications – on top of industrywide standards – are becoming a way of life for heavy-duty engine oil marketers. While vowing support for the American Petroleum Institute's engine oil classification system, heavy-duty engine builders continue to pile their own tough standards on top of the accepted industry categories for heavy-duty engine oils.

Latest sign of this trend was Caterpillar Inc.'s announcement last month that it would issue two new proprietary heavy-duty diesel engine oil specifications, ECF-2 and ECF-3. Also, for the first time, it will have a registration program for products meeting the new specifications. CAT's Dec. 7 announcement startled the industry, and dismayed some who have been hard at work to deliver the next diesel engine oil upgrade, API CJ-4. Caterpillar is to release draft specifications for both ECF-2 and an "interim" version of ECF-3 on Jan. 16.

Two other U.S. diesel engine manufacturers have long-established proprietary engine oil specification and registration systems. (So far, Detroit's Big Three passenger car automobile manufacturers have been loyal to API's engine oils, but do have proprietary specifications and registration systems for automatic transmission fluids, including Ford's Mercon, General Motors' Dexron, and Chrysler's new ATF+4 fluid.)

Engine builder Cummins Inc. has maintained a proprietary engine oil specification and registration system for seven years. Volvo Powertrain North America has published proprietary engine oil specifications and maintained a review and approval program for 35 years, originally begun by Mack Truck Inc. which was purchased by Volvo Truck in 2000.

Additionally, You may have heard by now that there is a new heavy duty diesel engine oil category in the making. This proposed category PC-10 is for the lubrication and protection of new heavy duty diesel engines meeting U.S. EPA's 2007 exhaust emission standards for on-highway trucks. The new engines will come on the market starting around 4Q 2006. Also, in this same time line is the introduction of Ultra-Low Sulfur Diesel fuel (ULSD) which will be commercially available around 3Q 2006. Use of ULSD fuel containing 15 PPM sulfur is a key element in attaining EPA mandated Tier III on-highway emissions in 2007. The new emissions standard is very much reduced in both NOx and particulate matter. Most diesel engine manufacturers plan to use enhanced EGR (exhaust gas recirculation) and exhaust after treatment devices in the 2007 engines for compliance with EPA regulations. The exhaust after treatment devices or Diesel Particulate Filters (DPF) will require oils with less ash for long term protection.

The PC-10 lubricants will be somewhat different from those of the previous diesel engine oil categories. For operational compatibility with the exhaust after treatment devices and for their long term protection, the new oils will be lowered in Sulfated Ash, Phosphorus and Sulfur (SAPS). Further the new engines will be equipped with Closed Crankcase Ventilation and to minimize evaporative emissions, the volatility of the oil will be reduced.

To attain these objectives the industry has agreed upon the following limits for the PC-10 oils:

Sulfated Ash 1.0 wt % - Phosphorus 0.12 wt % - Sulfur 0.4 wt % - NOACK Volatility 13 wt % (for SAE 15W40)

That's right a new term for the occasion is low SAPS technology. The low SAPS technology will result in PC-10 oils of 8.5–9.5 TBN. That is a big change for someone accustomed to 10-12 TBN and higher for the API CI-4 and CI-4 PLUS class of oils. Whereas the CI-4 oils typically range in sulfated ash from 1.1-1.5%, the PC-10 oils are limited to maximum 1.0% ash. ConocoPhillips is closely working with the engine builders, additives manufacturers and industry trade organizations in development of the PC-10 standard. They are also aggressively pursuing the development of new diesel engine lubricants technology for compliance with the evolving PC-10 standard. As a part of their product development efforts, they are field testing PC-10 capable candidates to predict their performance in the new engines and to determine their backward compatibility. Their efforts are focused on timely introduction of the next generation product to meet the new standards and to serve their customers.

Product Spotlight



Farrell Oil Company is proud to announce the addition of Elf (TotalFINA) Lubricants to our broad range of product offerings. Included in the product line is:

ELF Excellium LDX 5W40 meets the strict warranty requirements for all new Mercedes (229.3), all new Audis, all VW 1.8T engines (502.00) and all VW Turbo Diesel before 2004 (505.00). It also meets the Porsche and the LL-98 spec required for many first-fill BMW applications. ELF Excellium DID 5W40 meets the VW 505.01 standard for Pump-Düse engine of Turbo Diesel engines since the model year 2004.

ELF Excellium LSX 5W30 meets the latest Mercedes 229.31 and BMW LL-04 standards of compatibility with all post-exhaust treatments like particle filters, three-way catalysts and Nox traps. Such oil will become necessary to guarantee the full useful life of these treatments. LSX 5W30 also delivers extended service capability and proven protection for the BMW Valvetronic.

ELF Excellium Full-Tech 0W30 meets the latest warranty requirements for Mercedes (229.5), Audis and VW 1.8T engines (502.00) and VW Turbo Diesel before 2004 (505.00). It also meets BMW applications with the LL01 spec and SAAB gas engines with the GM-LL-A025 approval.

ELF Evolution SXR 5W30 covers the requirement of all domestic and Asian manufacturer, it is used as a first fill products in different countries for MAZDA, NISSAN, TOYOTA, excellent fuel economy properties and high temperature protection.



Celebrating our 29th Year!

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