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TECHNI-GRAM



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GF-4 AND 5W-20 ENGINE OILS...ARE THEY GOOD FOR CONSUMERS?

There has been considerable activity in the automotive industry on GF-4, the next generation of gasoline engine oil performance standards, and the automakers (OEMs) 5W-20 engine oil recommendations. According to the Independent Manufacturers Association (ILMA) and other industry publications, the decision by American and Japanese automakers to delay adoption of GF-4 could turn out to be most beneficial to automotive consumers.

Background

Some time ago, as part of its Clean Air Act regulation of vehicle emissions, the Environmental Protection Agency (EPA) developed a timetable for more stringent automobile emission standards. The Agency decided to impose new, stricter requirements beginning with 2004 model year vehicles. To provide long-term emission control, the EPA has required the automakers (OEMs) to warrant emission results on 2004 model year cars for 120,000 miles or 10 years. The OEMs appear to have chosen to meet this new emission's target through the *lubricant* rather than by improving the catalytic converter.

OEMs Motive

Meeting the 2004 emission standards by using the engine oil lubricant as opposed to improving the catalytic converter will save the OEMs a considerable amount of money. A part of the requirement for GF-4 oils is a further reduction in phosphorous levels. Phosphorous currently is used in engine oils in the form of zinc dialkyl dithiophosphate (ZDDP) as an oxidation inhibitor and anti-wear agent. ZDDP has been used for over 40 years. Certain types of ZDDP can volatilize and, as a result, poison the catalyst in the catalytic converter.

In addition to the GF-4 issue, the OEMs' recommendation of 5W-20 engine oils help them tremendously in meeting their Corporate Average Fuel Economy (CAFE) requirements. The Energy Policy and Conservation Act of 1975 required passenger car and light truck manufacturers to meet CAFE standards. The CAFE standards are applied on a fleet-wide basis for each manufacturer; i.e., the fuel economy ratings for a manufacturer's entire line of passenger cars must average at least 27.5 mpg for the manufacturer to comply with the standard. For light trucks (including vans and sport utility vehicles) the 1993 CAFE standard was 20.3 mpg. Manufacturers earn "credits" for exceeding CAFE standards, and these credits can be used



... to keep it running

to offset fuel economy shortfalls in the three previous and/or three subsequent model years. They can also be penalized for failure to meet the standard.

Industry Concerns

Industry mergers, particularly those of the integrated major oil companies, have concentrated the overall market for finished lubricants. Additionally, these mergers have heightened ILMA member concerns on the availability and affordability of certain classes of base oils. The EPA is also concerned, as the OEMs must convince EPA that engine oils that will meet the emission results regulatory requirements are “readily available” in the marketplace. EPA staff have said that the Agency feels “hoodwinked” by Ford’s past representations concerning the availability of 5W-20 engine oils, and this will make it a little harder for the OEMs to prove “readily available” in the context of GF-4 oils.

The OEMs prefer only GF-4 oils to be licensed, and they have asked the American Petroleum Institute (API) to discontinue all “S” designated categories. This request has been made to back up the OEMs’ claims of “readily available” oils in the marketplace. This position, if adopted, also means that only GF-4 oils would be available in the marketplace for older cars. The OEMs have done some field testing in 1999 model year engines with prototype GF-4 oils and have found them to work satisfactorily. Using 1999 engines is important to the OEMs, because when the 2004 engines come out, the 1999 engines will be either out or close to being out of warranty from the automakers. It should be noted that in 2004, it is predicted that cars older than 1999 models will make up around 60% of the nation’s vehicle fleet.

Another concern of API is that the OEMs will “go their own way” and the market will become filled with a wide variety of products and specifications, causing consumer confusion and making it more difficult to market engine oils. If all of the OEMs move to having their own unique specifications, then this could benefit the major oil companies that have larger, select, refining capabilities. The major oil company could partner with an additive manufacturer and OEM, making it tough for independent lubricant manufacturers to compete. This could drastically increase consumer cost per gallon, and without the competition of independent lubricant manufacturers, it could significantly raise the level of uncertainty for consumers to benefit from a free market system.