UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL VEHICLE AND FUEL EMISSIONS LABORATORY
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OFFICE OF
AIR AND RADIATION

May 2, 2016

CD-16-06 (HDE/HDV)

SUBJECT: Use of FA-4 Engine Oil for Testing of Heavy-Duty Highway Engines

Dear Manufacturer:

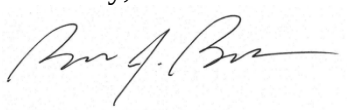
The purpose of this letter is to provide guidance regarding the use of FA-4 engine oil for certification testing of 2017 and later model year heavy-duty highway engines. EPA has promulgated regulations for the control of GHG emissions from heavy-duty highway engines that include a more stringent emissions standard beginning with the 2017 model year. API Service Category FA-4 oil, which has been developed as a lower GHG emissions oil for use in heavy-duty diesel engines, is scheduled to be available in the marketplace no later than December 1, 2016. Engine manufacturers seeking to certify their engines to the more stringent GHG emissions standards effective with the 2017 model year have requested guidance from EPA about utilizing FA-4 oils in engines used to demonstrate compliance with those standards.

40 CFR Part 1065 specifies procedures that apply generally to testing of various categories of engines, including testing of heavy-duty highway engines for the purpose of obtaining a certificate of conformity. As per 40 CFR Part 1065.10(c)(1), the objective of these procedures is to produce emission measurements equivalent to those that would result from measuring emissions during in-use operation using the same engine configuration as installed in a vehicle. 40 CFR § 1065.740 outlines the requirements for lubricants to be used during testing and reads as follows: "Use commercially available lubricating oil that represents the oil that will be used in your engine in use." Given that FA-4 oil will be readily available in the marketplace (to both manufacturers and consumers) no later than December 1, 2016, EPA would consider this oil to be acceptable for use in certification testing of 2017 model year and newer heavy-duty highway engines, contingent upon manufacturers taking measures to ensure the oil is used in production and in-use engines.

EPA has previously issued guidance letters CCD-04-07 and CISD-10-11 that addressed the use of particular oils in the certification process for light-duty test vehicles to ensure that the oil used during certification testing remains representative of oil used in production vehicles. Similar to those letters, we're providing in the enclosure to this letter a set of steps we think are the best way heavy-duty highway engine manufacturers can ensure that FA-4 oil used in engines for certification testing is representative of the oil that will be used in your engines in use.

If you have questions concerning this matter, please contact Justin Greuel at greuel.justin@epa.gov or (734) 214-4210.

Sincerely,



Byron J. Bunker, Director
Compliance Division
Office of Transportation and Air Quality

Enclosure

Appendix to CD-16-06
Use of FA-4 Engine Oil for Testing of Heavy-Duty Highway Engines

1. Oil Viscosity: If a manufacturer recommends multiple viscosities of FA-4 oils, then the manufacturer should use the viscosity it recommends for normal ambient temperature and driving conditions in certification test engines. Given that the same viscosity grade of heavy-duty engine oil may exist in the marketplace with different API service categories, manufacturer recommendations should clearly specify the use of FA-4 oil and include a brief explanation of the reasons for using FA-4 oil as well as specifying viscosity grade recommendations.

2. Owner's Manual Language: The manufacturer should specify the use of FA-4 oil in the owner's manual and include a brief explanation of the importance of the FA-4 oil. Manufacturer recommendations for oil viscosity grade should also be clearly stated in the owner's manual. It continues to be appropriate for a manufacturer to specify the use of a lower viscosity grade in extremely low temperatures at which the normally specified oil may not flow adequately. Inclusion of any qualifier word, "preferred" for example, associated with the oil viscosity grade is considered to introduce ambiguity into the instruction, and is not appropriate.[1]

3. Factory Fill Oil Requirements: The manufacturer should use FA-4 oil of the same viscosity grade for the factory fill that it specifies in its production engines/vehicles. Furthermore, the GHG emission performance of the factory fill oil should be equivalent or superior to that of the oils used in EPA emissions test engines/vehicles.

4. Labeling the Oil Filler Cap: The manufacturer should clearly indicate on the engine oil filler cap, by label or other permanently attached means, that API service category FA-4 oil is to be used in the engine. Alternatively, affixing a permanent and easily visible label under hood is also acceptable.

5. Oils Available at Dealerships: The manufacturer should inform their affiliated dealerships of the timing of the introduction of FA-4 oil and the need to use it as recommended in order to avoid the possibility of GHG emission increases.

6. Oils in other Segments of the Supply Network: The lubricant manufacturer or its trade association should consult with quick oil change facilities and suppliers to the major retailers servicing the do-it-your-self market segment to inform these organizations of the purpose of the new FA-4 oil and its market entry timing. In addition, the lubricant manufacturer or its trade association should provide educational materials regarding the differentiation between FA-4 oil and other API heavy-duty engine oil service categories that have the same viscosity grade in the marketplace.

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[1] If a vehicle owner wishes to use a synthetic, or partial synthetic oil, EPA does not expect an engine/vehicle manufacturer to preclude use of such oil if it meets all engine/vehicle manufacturer requirements.