



NATIONAL VEHICLE AND FUEL EMISSIONS LABORATORY

ANN ARBOR, MI 48105

October 13, 2026

IACD-2026-18 (HDE)

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

Dear Manufacturer,

The purpose of this letter is to provide updated guidance regarding the use of specific service class engine oils for certification testing of heavy-duty highway engines (HDE). This letter replaces guidance letter [CD-16-06](#), issued May 2, 2016.

The American Petroleum Institute (API) introduced the FA-4 engine oil specification in 2016 for use in 2017 and later model year HDE. API has developed the new FB-4 engine oil specification for 2027 and later model year HDE. API has announced FB-4 oils will be commercially available no later than January 1, 2027, and that FA-4 engine oils will continue to be available in the market at the same time. Engine manufacturers seeking to certify their engines have requested guidance from the EPA about utilizing FA-4 and FB-4 oils in engines used to demonstrate compliance with EPA emissions standards.

40 CFR Part 1065 specifies procedures that apply generally to the testing of various categories of engines, including testing of HDE for the purpose of obtaining a Certificate of Conformity. According to 40 CFR 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 and FB-4 oils will be readily available in the marketplace (to both manufacturers and consumers), the EPA would consider these oils to be acceptable for use in certification testing, contingent upon manufacturers taking measures to ensure the oil is used in production and in-use engines.

In addition, the EPA has been informed that FB-4 was developed to be backward compatible with FA-4. For current and previous model year applications, manufacturers should attest, based on data and good engineering judgement, that those engines using FB-4 as their recommended engine oil will continue to comply with all regulatory requirements, including, but not limited to: the exhaust emissions standards, durability requirements, and on-board diagnostics (OBD) requirements. Manufacturers may use the running change process if there is a need to make such an attestation to the EPA, with no additional testing required.

The EPA has previously issued guidance letters CCD-04-07 and CISC-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. As in those letters, the EPA is providing an enclosure to this letter with a set of steps the Agency thinks are the best way HDE manufacturers can ensure that FA-4 and FB-4 oils used in engines for certification testing are representative of the oil that will be used in your engines in-use.

If you have questions concerning this matter, please contact Lauren Steele at steele.lauren@epa.gov or (734) 214-4788.

Enclosure

Sincerely,

A handwritten signature in black ink, appearing to read "Byron Bunker", written over a light gray rectangular background.

Byron Bunker, Director
Implementation, Analysis and Compliance Division
Office of Transportation and Air Quality

Enclosure to IACD-2026-18
Use of FA-4 and FB-4 Engine Oils for Testing of Heavy-Duty Highway Engines

1. Oil Viscosity: If a manufacturer recommends multiple viscosities of FA-4 or FB-4 oils, 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 or FB-4 oil and include a brief explanation of the reasons for using FA-4 or FB-4 oil as well as specifying viscosity grade recommendations.
2. Owner's Manual Language: The manufacturer should specify the use of FA-4 and/or FB-4 oil in the owner's manual and include a brief explanation of the importance of the FA-4 and FB-4 oil.¹ 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, for example, "preferred," associated with the oil viscosity grade is considered to introduce ambiguity into the instruction and is not appropriate.
3. Factory Fill Oil Requirements: The manufacturer should use FA-4 or FB-4 oil of the same viscosity grade for the factory fill that it specifies in its production engines/vehicles. Furthermore, the 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 or FB-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 its affiliated dealerships of the timing of the introduction of FA-4 and FB-4 oil and the need to use them as recommended to avoid the possibility of 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-yourself market segment to inform these organizations of the purpose of the FA-4 and FB-4 oils and their market entry timing. In addition, the lubricant manufacturer or its trade association should provide educational materials regarding the differentiation between FA-4 and FB-4 oils and other API heavy-duty engine oil service categories in the marketplace that have the same viscosity grade.

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