Air Resources Board

Mary D. Nichols, Chairman
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Matthew Rodriquez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

November 7, 2014

Dear Sir or Madam:

On December 21, 2000, the Air Resources Board (ARB) staff issued an advisory (http://www.arb.ca.gov/fuels/gasoline/depos98/122100ad.pdf) to interested parties who apply for certification under California's gasoline deposit control additive regulation (title 13, section 2257, California Code of Regulations). The advisory pertained to the appropriate formulation and use of certification test fuel to demonstrate compliance with the performance standards for intake valve deposits, combustion chamber deposits, and port fuel injectors.

The December 21, 2000, advisory required the use of a single certification test fuel for all tests, but allowed an exception to this requirement for the port fuel injector test when the certification test fuel is a federal 65th percentile fuel. Effective immediately, this exception is disallowed. Certification applications submitted on or after the date of this advisory which are based on new performance testing must use a single certification test fuel that meets the certification test fuel specifications for all tests.

The rest of this advisory letter provides guidance for test laboratories that perform testing in accordance with ASTM 5500-98 for intake-valve and combustion-chamber deposits for the purpose of demonstrating the performance of gasoline deposit-control additives, as required by 13 CCR 2257, Required Additives in Gasoline, and the Stationary Source Division's Test Method for Evaluating Intake Valve and Combustion Chamber Deposits in Vehicle Engines, dated March 12, 1999. This guidance pertains specifically to the requirements of subsections 2257(c)(1)(A)(i) and (iii) of the regulation and paragraphs 10.4.2.2 and 10.4.5.1 of ASTM D 5500-98.

Paragraph 10.4.2.2 of ASTM D 5500-98 states:

> 10.4.2.2 *Number of Accelerations*—Test mileage accumulation shall include a minimum of 100 accelerations from idle per test day (based on 1290 km accumulated per day in accordance with the driving cycle in 9.2.1.1), from 0 kph (0 mph) to a minimum of 32 kph (20 mph). The number of accelerations per day shall be proportional to the mileage accumulated.

Paragraph 10.5.4.1 of ASTMD 5500-98 states:

> 10.5.4.1 *Test Validation Criteria*—Vehicle shall accumulate a minimum of 16 090 km (10 000 miles), but not more than 16 250 km (10 100 miles), using the same batch of test fuel.

After substantial review of test reports submitted for the purpose of demonstrating the performance of gasoline deposit-control additives, ARB staff wishes to clarify the requirements from these paragraphs as follows:

(1) Each test day shall include a minimum of 100 accelerations per 1290 km accumulated (i.e., at least 0.0775 accelerations per km regardless of distance driven per day);

(2) Once an acceleration-per-kilometer ratio has been established that meets the minimum acceleration requirements of (1) above, this ratio must be adhered to as closely as possible for each test day, including each test day on fuel with additive and each test day on fuel without additive. Daily variations from the established acceleration-per-kilometer ratio by more than 10 percent may be considered not "proportional," as required by paragraph 10.4.2.2 of ASTM D 5500-98; and

(3) Total vehicle test mileage accumulation shall not include mileage accumulated during any system calibration.

If you have any questions regarding this advisory or any other questions on the gasoline deposit control additive program, please contact Ms. Manisha Singh, Manager, Fuels Section, at (916) 327-1501, or e-mail mansingh@arb.ca.gov.

Sincerely,

Michael S. Waugh

Michael S. Waugh, Chief
Transportation Fuels Branch

cc: Manisha Singh, Manager
Fuels Section