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(3) \* \* \*

(iii) SAMppm=methanol concentration in the sample bag, or gas bottle, in ppmC. SAMppm for sample bags:

$$= \frac{0.02406 \times \text{Fuel injected} \times \text{Fuel density}}{\text{Air volume} \times \text{Mol. Wt. CH}_3\text{OH}}$$

Where:

\* \* \* \* \*

40. Section 86.523–78 of Subpart F is amended by adding paragraph (c) to read as follows:

**§ 86.523–78 Oxides of nitrogen analyzer calibration.**

\* \* \* \* \*

(c) When testing methanol-fueled motorcycles, it may be necessary to clean the analyzer frequently to prevent interference with NO<sub>x</sub> measurements (see EPA/600/S3–88/040).

41. Section 86.527–90 of Subpart F is amended by adding paragraph (e) to read as follows:

**§ 86.527–90 Test procedures, overview.**

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(e) Background concentrations are measured for all species for which emissions measurements are made. For exhaust testing, this requires sampling and analysis of the dilution air. (When testing methanol-fueled motorcycles, manufacturers may choose not to measure background concentrations of methanol and/or formaldehyde, and then assume that the concentrations are zero during calculations.)

42. Section 86.537–90 of Subpart F is amended by revising paragraphs (b)(4), (b)(6)(iii), (b)(6)(iv), (b)(12), and (b)(14), and by removing the note following paragraph (b)(6)(iv) to read as follows:

**§ 86.537–90 Dynamometer test runs.**

\* \* \* \* \*

(b) \* \* \*

(4) For methanol-fueled vehicles, with the sample selector valves in the “standby” position, insert fresh sample collection impingers into the methanol sample collection system, fresh impingers or a fresh cartridge into the formaldehyde sample collection system and fresh impingers (or a single cartridge for formaldehyde) into the dilution air sample collection systems for methanol and formaldehyde (background measurements of methanol and formaldehyde may be omitted and concentrations assumed to be zero for calculations in § 86.544).

\* \* \* \* \*

(6) \* \* \*

(iii) For methanol samples, the flow rates shall be set such that the system

meets the design criteria of § 86.509. For samples in which the concentration in the primary impinger exceeds 0.5 mg/l, it is recommended that the mass of methanol collected in the secondary impinger not exceed ten percent of the total mass collected. For samples in which the concentration in the primary impinger does not exceed 0.5 mg/l, secondary impingers do not need to be analyzed.

(iv) For formaldehyde samples, the flow rates shall be set such that the system meets the design criteria of § 86.509. For impinger samples in which the concentration of formaldehyde in the primary impinger exceeds 0.1 mg/l, it is recommended that the mass of formaldehyde collected in the secondary impinger not exceed ten percent of the total mass collected. For samples in which the concentration in the primary impinger does not exceed 0.1 mg/l, secondary impingers do not need to be analyzed.

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(12) At the end of the deceleration which is scheduled to occur at 505 seconds, simultaneously switch the sample flows from the “transient” bags and samples to “stabilized” bags and samples, switch off gas flow measuring device No. 1 and, start gas flow measuring device No. 2. Before the acceleration which is scheduled to occur at 510 seconds, record the measured roll or shaft revolutions and reset the counter or switch to a second counter. As soon as possible, transfer the “stabilized” exhaust and dilution air samples to the analytical system and process the samples according to § 86.540, obtaining a stabilized reading of the exhaust bag sample on all analyzers within 20 minutes of the end of the sample collection phase of the test. Obtain methanol and formaldehyde sample analyses, if applicable, within 24 hours of the end of the sample period. (If it is not possible to perform analysis on the methanol and formaldehyde samples within 24 hours, the samples should be stored in a dark cold (4–10°C) environment until analysis. The samples should be analyzed within fourteen days.)

\* \* \* \* \*

(14) Five seconds after the engine stops running, simultaneously turn off

gas flow measuring device No. 2 and position the sample selector valves to the “standby” position (and open the valves isolating particulate filter No. 1, if applicable). Record the measured roll or shaft revolutions (both gas meter or flow measurement instrumentation readings) and re-set the counter. As soon as possible, transfer the “stabilized” exhaust and dilution air samples to the analytical system and process the samples according to § 86.540, obtaining a stabilized reading of the exhaust bag sample on all analyzers within 20 minutes of the end of the sample collection phase of the test. Obtain methanol and formaldehyde sample analyses, if applicable, within 24 hours of the end of the sample period. (If it is not possible to perform analysis on the methanol and formaldehyde samples within 24 hours, the samples should be stored in a dark cold (4–10°C) environment until analysis. The samples should be analyzed within fourteen days.)

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43. Section 86.540–90 of Subpart F is amended by revising paragraphs (b) and (c) to read as follows:

**§ 86.540–90 Exhaust sample analysis.**

\* \* \* \* \*

(b) For CH<sub>3</sub>OH (methanol-fueled vehicles), introduce test samples into the gas chromatograph and measure the concentration. This concentration is C<sub>MS</sub> in the calculations.

(c) For HCHO (methanol-fueled vehicles), introduce test samples into the high pressure liquid chromatograph and measure the concentration of formaldehyde as a dinitrophenylhydrazine derivative in acetonitrile. This concentration is C<sub>FS</sub> in the calculations.

44. Section 86.542–90 of Subpart F is amended by revising paragraph (p) to read as follows:

**§ 86.542–90 Records required.**

\* \* \* \* \*

(p) Additional required records for methanol-fueled vehicles:

(1) Specification of the methanol fuel, or fuel mixtures, used during testing.

(2) Volume of sample passed through the methanol sampling system and the volume of deionized water in each impinger.