10 CSR 10-6.040 Reference Methods

(1) The percent sulfur in solid fuels shall be determined as specified by American Society of Testing and Materials (ASTM) Method D(3177-75) *Total Sulfur in the Analysis Sample of Coal and Coke.*

(2) The heat content or higher heating value (HHV) of solid fuels shall be determined by use of the Adiabatic Bomb Calorimeter as specified by ASTM Method D(2015-66) *Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter.*

(3) The heat content or HHV of liquid hydrocarbons shall be determined as specified by ASTM Method D(240-64) *Heat of Combustion of Liquid Hydrocarbon by Bomb Calorimeter.*

(4) The methods for determining the concentrations of the following air contaminants in the ambient air shall be as specified in 40 CFR part 50, Appendices A–N or equivalent methods as specified in 40 CFR part 53:

(A) The concentration of sulfur dioxide shall be determined as specified in 40 CFR part 50, Appendix A—*Reference Method for the Determination of Sulfur Dioxide in the Atmosphere (Pararosaniline Method)* or an equivalent method as approved by 40 CFR part 53;

(B) The concentration of total suspended particulate shall be determined as specified in 40 CFR part 50, Appendix B—*Reference Method for the Determination of Suspended Particulates in the Atmosphere (High Volume Method);*

(C) The concentration of carbon monoxide in the ambient air shall be determined as specified in 40 CFR part 50, Appendix C—*Measurement Principle and Calibration Procedure for the Continuous Measurement of Carbon Monoxide in the Atmosphere (Non-Dispersive Infrared Spectrometry)* or equivalent methods as approved by 40 CFR part 53;

(D) The concentration of photochemical oxidants (ozone) in the ambient air shall be determined as specified in 40 CFR part 50, Appendix D—*Measurement Principle and Calibration Procedure for the Measurement of Ozone in the Atmosphere* or equivalent methods as approved by 40 CFR part 53;

(E) *Reserved*

(F) The concentration of nitrogen dioxide in the ambient air shall be determined as specified in 40 CFR part 50, Appendix F—*Measurement Principle and Calibration Procedure for the Measurement of Nitrogen Dioxide in the Atmosphere (Gas Phase Chemiluminescence)* or equivalent methods as approved by 40 CFR part 53;

(G) The concentration of lead in the ambient air shall be determined as specified in 40 CFR part 50, Appendix G—*Reference Method for the Determination of Lead in Suspended Particulate Matter Collected From Ambient Air* or equivalent methods as approved by 40 CFR part 53;

(H) Compliance with the one (1) hour ozone standard shall be determined as specified in 40 CFR part 50, Appendix H—*Interpretation of the National Ambient Air Quality Standards for Ozone;*

(I) Compliance with the eight (8) hour ozone standards shall be determined as specified in 40 CFR part 50, Appendix I—*Interpretation of the 8-Hour Primary and Secondary National Ambient Air Quality Standards for Ozone;*

(J) The concentration of particulate matter 10 micron (PM_{10}) in the ambient air shall be determined as specified in 40 CFR part 50, Appendix J—*Reference Method for the Determination of Particulate Matter as PM_{10} in the Atmosphere*, or an equivalent method as approved in 40 CFR part 53; and

(K) Compliance with particulate matter 10 PM_{10} standards shall be determined as specified in 40 CFR part 50, Appendix K—*Interpretation of the National Ambient Air Quality Standards for Particulate Matter;*

(L) The concentration of particulate matter 2.5 micron ($PM_{2.5}$) in the ambient air shall be determined as specified in 40 CFR part 50, Appendix L—*Reference Method for the Determination of Fine Particulate Matter as $PM_{2.5}$ in the Atmosphere*, or an equivalent method as approved in 40 CFR part 53; and

(M) Compliance with particulate matter 2.5 ($PM_{2.5}$) standards shall be determined as specified in 40 CFR part 50, Appendix N—*Interpretation of the National Ambient Air Quality Standards for Particulate Matter.*

(5) The concentration of hydrogen sulfide (H_2S) in the ambient air shall be determined by scrubbing all sulfur dioxide (SO_2) present in the sample and then converting each molecule of H_2S to SO_2 with a thermal converter so that the resulting SO_2 is detected by an analyzer as specified in 40 CFR part 50, Appendix A—***Reference Method for the Determination of Sulfur Dioxide in the Atmosphere (Pararosaniline Method)*** or an equivalent method approved by 40 CFR part 53, in which case the calibration gas used must be National Institute of Standards and Technology traceable H_2S gas.

(6) The concentration of sulfuric acid mist in the ambient air shall be determined as specified in the ***Compendium Method IO-4-2, Determination of Reactive Acidic and Basic Gases and Strong Acidity of Fine-Particles (<2.5 µm)***, Center for Environmental Research Information, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, OH 45268, EPA/625/R-96/010a.

(A) The concentration of total sulfur shall be determined as specified in section (4) of this rule by sampling for sulfur dioxide without removing other sulfur compound interferences.

(B) The concentration of sulfur dioxide shall be determined as specified by section (4) of this rule.

(C) The concentration of hydrogen sulfide shall be determined as specified by section (5) of this rule.

(7) The percent sulfur in liquid hydrocarbons shall be determined as specified by ASTM D(2622-98), S***ulfur in Petroleum Products by X-Ray Fluorescence Spectrometry***.

(8) The amount of solvent present in earth filters and distillation wastes shall be determined as specified by ASTM Method D(322-67), ***Standard Test Method for Gasoline Diluent in Used Gasoline Engine Oils by Distillation***.

(9) The latest effective date of any 40 CFR part 50, Appendices A–N and equivalent methods as specified in 40 CFR part 53 shall be as designated in 10 CSR 10-6.070 New Source Performance Regulations for 40 CFR part 60.

10 CSR 10-6.040

EPA Rulemakings

CFR: 40 C.F.R. 52.1320(c)

FRM: 71 FR 70468 (12/05/2006)

PRM: 71 FR 70476 (12/05/2006)

State Submission: 03/30/2006

State Final: 10 C.S.R. 10-6 (01/29/2006); effective 02/28/2006

APDB File: MO-242; EPA-R07-OAR-2006-0900

Description: This revision updates adopted Federal reference methods for the new 8-hour ozone and $PM_{2.5}$ NAAQS finalized on July 18, 1997, and mandated by the CAA.

CFR: 40 C.F.R. 52.1320(c)

FRM: 66 FR 52359 (10/15/2001)

PRM: 66 FR 52367 (10/15/2001)

State Submission: 07/24/2001

State Final: 10 C.S.R. 10-6 (06/30/2001)

APDB File: MO-191

Description: Sections (5), (6) and (7) were revised to adopt current EPA methods.

CFR: 40 C.F.R. 52.1320(c)(66)(i)(A)

FRM: 54 FR 31524 (7/31/89)

PRM: None

State Submission: 5/12/88

State Proposal: 13 MR 110 (1/19/88)

State Final: 13 MR 602 (4/18/88)

APDB File: MO-67

Description: The EPA approved revisions to the regulation which: (1) adopted a reference method for PM_{10}, and (2) made other administrative changes.

CFR: 40 C.F.R. 52.1320(c)(47)

FRM: 49 FR 44996 (11/14/84)

PRM: None

State Submission: 8/14/84

State Proposal: 9 MR 328 (2/1/84), 9 MR 670 (4/2/84)

State Final: 9 MR 425 (3/1/84), 9 MR 1134 (7/2/84)

APDB File: MO-53

Description: The EPA approved revisions which updated the references to ambient sampling methods.

CFR: 40 C.F.R. 52.1320(c)(25)(iii)

FRM: 46 FR 20172 (4/3/81)

PRM: 45 FR 84099 (12/22/80)

State Submission: 9/2/80

State Proposal: 5 MR 385 (4/1/80)

State Final: 5 MR 1149 (9/2/80)

APDB File: MO-12

Description: The EPA approved a revision which added a solvent test method.

CFR: 40 C.F.R. 52.1320(c)(13)(ii)

FRM: 45 FR 17145 (3/18/80)

PRM: 44 FR 52001 (9/6/79)

State Submission: 8/28/78

State Proposal: 2 MR 513 (9/1/77)

State Final: 3 MR 91 (2/1/78)

APDB File: MO-03

Description: The EPA approved a new regulation establishing reference methods for determining the sulfur content and heat content of fuels and methods for determining the ambient concentrations of air contaminants.

Difference Between the State and EPA-Approved Regulation

None.