

## 10 CSR 10-6.030 Sampling Methods for Air Pollution Sources

(1) Samples and velocity traverses for source sampling shall be conducted as specified by 40 CFR part 60 Appendix A Test Methods, *Method 1-Sample and Velocity Traverses for Stationary Sources*.

(2) The velocity of stack gases is to be determined by measuring velocity head using a Type "S" (Stauscheibe or reverse type) pitot tube as specified by 40 CFR part 60, Appendix A-Test Methods, *Method 2-Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)*.

(3) The carbon dioxide, oxygen, excess air and dry molecular weight contained in stack gases shall be determined as specified by 40 CFR part 60, Appendix A-Test Methods, *Method 3-Gas Analysis for Carbon Dioxide, Oxygen, Excess Air and Dry Molecular Weight*.

(4) The moisture content in stack gases shall be determined as specified by 40 CFR part 60, Appendix A-Test Methods, *Method 4-Determination of Moisture Content in Stack Gases*.

(5) Particulate Matter Emissions.

(A) The concentration of particulate matter emissions in stack gases shall be determined as specified by 40 CFR part 60, Appendix A-Test Methods, *Method 5-Determination of Particulate Emissions from Stationary Sources*.

(B) The quantity of particulate matter emissions from certain industrial processes as determined by the director shall be determined as specified by 40 CFR part 60, Appendix A-Test Methods, *Method 17-Determination of Particulate Emissions from Stationary Sources (In-Stack Filtration Method)*.

(C) The concentration of particulates of  $PM_{10}$  shall be determined as specified by 40 CFR part 51, Appendix M-Test Methods, *Method 201-Determination of  $PM_{10}$  Emissions (Exhaust Gas Recycle Procedure)*. When water droplets are known to exist in emissions, use Method 5 as defined in subsection (5)(A) of this rule and consider the particulate catch to be  $PM_{10}$  emissions.

(D) The concentration of particulates of  $PM_{10}$  shall be determined as specified by 40 CFR part 51, Appendix M-Test Methods, *Method 201A-Determination of  $PM_{10}$  Emissions (Constant Sampling Rate Procedure)*. When water droplets are known to exist in emissions, use Method 5 as defined in subsection (5)(A) of this rule and consider the particulate catch to be  $PM_{10}$  emissions.

(E) The concentration of condensible particulate matter (CPM) emissions in stack gases shall be determined as specified by 40 CFR part 51, Appendix M—Test Methods, *Method 202—Determination of Condensible Particulate Emissions from Stationary Sources*. EPA *Conditional Test Method 039—Measurement of PM<sub>2.5</sub> and PM<sub>10</sub> Emissions By Dilution Sampling (Constant Sampling Rate Procedures—July 2004)* may be used to determine the total PM<sub>10</sub> and PM<sub>2.5</sub> fraction of filterable particulate matter including condensibles.

(F) The concentration of PM<sub>2.5</sub> emissions in stack gases shall be determined as specified by 40 CFR part 51, Appendix M—Test Methods, *Method 202—Determination of Condensible Particulate Emissions from Stationary Sources* and EPA *Conditional Test Method 040—Method For The Determination Of PM<sub>10</sub> and PM<sub>2.5</sub> Emissions (Constant Sampling Rate Procedures—December 3, 2002)*. EPA *Conditional Test Method 039—Measurement of PM<sub>2.5</sub> and PM<sub>10</sub> Emissions By Dilution Sampling (Constant Sampling Rate Procedures—July 2004)* may be used to determine the total PM<sub>10</sub> and PM<sub>2.5</sub> fraction of filterable particulate matter including condensibles.

(6) The sulfur dioxide emissions from air pollution sources shall be determined as specified by 40 CFR part 60, Appendix A Test Methods, *Method 6—Determination of Sulfur Dioxide Emissions from Stationary Sources*.

(7) The nitrogen oxide emissions from air pollution sources shall be determined as specified by 40 CFR part 60, Appendix A—Test Methods, *Method 7—Determination of Nitrogen Oxide Emissions from Stationary Sources*.

(8) The sulfuric acid mist and sulfur dioxide emissions from air pollution sources shall be determined as specified by 40 CFR part 60, Appendix A—Test Methods, *Method 8—Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources*.

(9) Visible Emissions.

(A) The visible emissions from air pollution sources shall be evaluated as specified by 40 CFR part 60, Appendix A—Test Methods, *Method 9—Visual Determination of the Opacity of Emissions from Stationary Sources*.

(B) Visible fugitive emissions shall be evaluated as specified by 40 CFR part 60, Appendix A—Test Methods. *Method 22—Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares*.

(10) The carbon monoxide emissions from air pollution sources shall be determined as specified by 40 CFR part 60, Appendix A- Test Methods, *Method 10-Determination of Carbon Monoxide Emissions from Stationary Sources*.

(11) The hydrogen sulfide emissions from air pollution sources shall be determined as specified by 40 CFR part 60, Appendix A- Test Methods, *Method 11-Determination of Hydrogen Sulfide Content of Fuel Gas Streams in Petroleum Refineries*.

(12) The lead emissions from air pollution sources shall be determined as specified by 40 CFR part 60, Appendix A-Test Methods, *Method 12-Determination of Inorganic Lead Emissions from Stationary Sources*.

(13) The total fluoride emissions and the associated moisture content from air pollution sources shall be determined as specified by 40 CFR part 60, Appendix A-Test Methods, *Method 13A-Determination of Total Fluoride Emissions from Stationary Sources-SPADNS Zirconium Lake Method* or *Method 13B-Determination of Total Fluoride Emissions from Stationary Sources- Specific Ion Electrode Method*. For Method 13A or 13B, the sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be at least 0.85 standard dry cubic meter (thirty (30) standard dry cubic foot) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the director.

(14) Volatile organic compound emissions from air pollution sources shall be determined-

(A) As specified by 40 CFR part 60, Appendix A-Test Methods, *Method 25-Determination of Total Gaseous Nonmethane Organic Emissions as Carbon*;

(B) As specified by 40 CFR part 60, Appendix A-Test Methods, *Method 27-Determination of Vapor Tightness of Gasoline Delivery Tanks Using Pressure-Vacuum Test*;

(C) As specified by 40 CFR part 60, Appendix A-Test Methods, *Method 24-Determination of Volatile Matter Content, Water Content, Density, Volume, Solids and Weight Solids of Surface Coatings*;

(D) As specified by 40 CFR part 60, Appendix A-Test Methods, *Method 24A-Determination of Volatile Matter Content and Density of Printing Inks and Related Coatings*; or

(E) As specified by 40 CFR part 60, Appendix A-Test Methods, *Method 21-Determination of Volatile Organic Compound Leaks*.

(15) The hydrogen chloride emissions from air pollution sources shall be determined as specified by 40 CFR part 60, Appendix A- Test Methods, *Method 26-Determination of Hydrogen Chloride Emissions from Stationary Sources*.

(16) Dioxin and furan emissions from air pollution sources shall be determined as specified by 40 CFR part 60, Appendix A- Test Methods, *Method 23-Determination of Polychlorinated Dibenzop-Dioxins and Polychlorinated Dibenzofurans from Stationary Sources*.

(17) The mercury emissions, both particulate and gaseous, from air pollution sources shall be determined as specified by 40 CFR part 61, Appendix B-Test Methods, *Method 101A-Determination of Particulate and Gaseous Mercury Emissions from Stationary Sources*.

(18) The latest effective date of any 40 CFR part 60, Appendix A-Test Methods shall be as designated in 10 CSR 10-6.070 New Source Performance Regulations.

(19) Alternative Sampling Method. An alternative sampling method to any method referenced in this rule may be used provided it is in accordance with good professional practice, provides results of at least the same accuracy and precision as the replaced method and receives the approval of the director for its use.

(20) The capture efficiency of air pollution control devices shall be determined as specified by the U.S. Environmental Protection Agency's (EPA's) February 7, 1995 memorandum entitled, "Revised Capture Efficiency Guidance for Control of Volatile Organic Compound Emission" and the U.S. EPA's January 9, 1994 technical document entitled, "Guidelines for Determining Capture Efficiency." For automobile and light-duty truck topcoat operations, the capture efficiency of air pollution control devices shall be determined as specified in U.S. EPA's document entitled, "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations" (USEPA-450/3/88-018), as amended by Enclosure 1, dated March 8, 1996, and entitled, "23-Determining Spraybooth VOC Capture Efficiency."

EPA Rulemakings

CFR: 40 C.F.R. 52.1320(c)  
 FRM: 71 FR 70468 (12/5/2006)  
 PRM: 71 FR 70476 (12/5/2006)  
 State Submission: 3/30/2006  
 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 PM<sub>2.5</sub> NAAQS finalized on July 18, 1997, and mandated by the CAA.

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CFR: 40 C.F.R. 52.1320(c)(112)  
 FRM: 64 FR 15688 (4/1/99)  
 PRM: 64 FR 15711 (4/1/99)  
 State Submission: 12/7/98  
 State Proposal: 23 MR 952 (5/15/98)  
 State Final: 10 C.S.R. 10-6 18 (10/31/98)  
 APDB File: MO-152  
 Description: This revision is to clarify the meaning and intent of the reference method citations and to add certain Federal reference sampling methods (methods 202 and 22) to the rule.

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CFR: 40 C.F.R. 52.1320(c)(106)  
 FRM: 63 FR 36852 (7/8/98)  
 PRM: 63 FR 36870 (7/8/98)  
 State Submission: 12/17/96  
 State Proposal: 21 MR 1238 (5/15/96)  
 State Final: 10 C.S.R. 10-6 18 (10/31/96)  
 APDB File: MO-114  
 Description: This revision incorporates the most current EPA guidance on capture efficiency methods for volatile organic compound emission control systems.

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CFR: 40 C.F.R. 52.1320(c)(84)(I)(B)  
 FRM: 58 FR 45451 (8/30/93)  
 PRM: 58 FR 30730 (4/27/93)  
 State Submission: 9/23/92-  
 State Proposal: 16 MR 361 (9/16/91)  
 State Final: 10 C.S.R. 10-6 (3/30/92)  
 APDB File: MO-99  
 Description: This revision approved test methods used to determine control device capture and destruction efficiency, and test methods to determine volatile matter content and density of printing inks.

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CFR: 40 C.F.R. 52.1320(c)(79)(I)(A)  
 FRM: 59 FR 43480 (8/24/94), Correction notice 60 FR 16806 (4/3/95)  
 PRM: 57 FR 32191 (7/21/92)  
 State Submission: 11/20/91  
 State Proposal: 16 MR 288 (2/19/91)  
 State Final: 10 C.S.R. 10-6 (9/20/91)  
 APDB File: MO-100  
 Description: This revision administratively renumbers many of the previously approved sampling methods in this rule and the changes represent significant changes in the rule organization but not the rule content.

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CFR: 40 C.F.R. 52.1320(c)(65)(I)(E)  
 FRM: 54 FR 10322 (3/13/89)  
 PRM: 53 FR 24735 (6/30/88)  
 State Submission: 12/18/87  
 State Proposal: 12 MR 996 (7/13/87), 12 MR 1386 (9/14/87)  
 State Final: 12 MR 1718 (11/13/87), 12 MR 1957 (12/14/87)  
 APDB File: MO-49  
 Description: The EPA approved changes relating to VOC test methods.

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CFR: 40 C.F.R. 52.1320(c)(47)  
 FRM: 49 FR 44998 (11/14/84)  
 PRM: None  
 State Submission: 8/14/84  
 State Proposal: 9 MR 326 (2/1/84), 9 MR 670 (4/2/84)  
 State Final: 9 MR 423 (3/1/84), 9 MR 1134 (7/2/84)  
 APDB File: MO-53  
 Description: The EPA approved revisions which: (1) updated references to sampling methods, (2) added VOC test methods, and (3) made other administrative changes.

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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 1148 (9/2/80)  
APDB File: MO-12  
Description: The EPA approved a revision which added VOC test methods.

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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 512 (9/1/77)  
State Final: 3 MR 90 (2/1/78)  
APDB File: MO-03  
Description: The EPA approved a new regulation setting out sampling methods for air pollution sources.

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Difference Between the State and EPA-Approved Regulation

None.