



Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method)¹

This standard is issued under the fixed designation D 6784; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This method applies to the determination of elemental, oxidized, particle-bound, and total mercury emissions from coal-fired stationary sources.

1.2 This method is applicable to elemental, oxidized, particle-bound, and total mercury concentrations ranging from approximately 0.5 to 100 µg/Nm³.

1.3 This method describes equipment and procedures for obtaining samples from effluent ducts and stacks, equipment and procedures for laboratory analysis, and procedures for calculating results.

1.4 This method is applicable for sampling elemental, oxidized, and particle-bound mercury in flue gases of coal-fired stationary sources. It may not be suitable at all measurement locations, particularly those with high particulate loadings, as explained in Section 16.

1.5 Method applicability is limited to flue gas stream temperatures within the thermal stability range of the sampling probe and filter components.

1.6 The values stated in SI units are to be regarded as the standard. The values in parentheses are for information only.

1.7 This standard assumes users are familiar with EPA stack-gas sampling procedures as stated in EPA Methods 1–4, Method 5, and Method 17.

1.8 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

D 1193 Specification for Reagent Water²

D 1356 Terminology Relating to Sampling and Analysis of Atmospheres³

¹ This test method is under the jurisdiction of ASTM Committee D22 on Sampling and Analysis of Atmospheres and is the direct responsibility of Subcommittee D22.03 on Ambient Atmospheres and Source Emissions.

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² Annual Book of ASTM Standards, Vol 11.01.

³ Annual Book of ASTM Standards, Vol 11.03.

D 2986 Practice for Evaluation of Air-Assay Media by the Monodisperse DOP (Diethyl Phthalate) Smoke Test³

D 3154 Test Method for Average Velocity in a Duct (Pitot Tube Method)³

D 3685 Test Methods for Sampling and Determination of Particulate Matter in Stack Gases³

E 1 Specification for ASTM Thermometers⁴

2.2 Other Standards:⁵

EPA Method 1 Sample and Velocity Traverses for Stationary Sources

EPA Method 2 Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)

EPA Method 3 Gas Analysis for the Determination of Dry Molecular Weight

EPA Method 4 Determination of Moisture Content in Stack Gases

EPA Method 5 Determination of Particulate Emissions from Stationary Sources

EPA Method 12 Determination of Inorganic Lead Emissions from Stationary Sources

EPA Method 17 Determination of Particulate Emissions from Stationary Sources (In-Stack Filtration Method)

EPA Method 29 Determination of Metals Emissions from Stationary Sources

EPA Method 101A Determination of Particle-Bound and Gaseous Mercury Emissions from Sewage Sludge Incinerators

EPA Method 301 Field Validation of Pollutant Measurement Methods from Various Waste Media

EPA SW 846 7470A Mercury in Liquid Waste—Manual Cold Vapor Technique

EPA Water and Waste 600/4-79-020 Methods for Chemical Analysis of Water and Wastes

3. Terminology

3.1 Definitions other than those given below in 3.2 and 3.3 are listed in Terminology D 1356.

⁴ Annual Book of ASTM Standards, Vol 14.03.

⁵ Available from the U.S. Environmental Protection Agency's Emission Measurement Technical Information Center or Code of Federal Regulations (40 CFR Part 60, Appendix A or 40 CFR Part 61, Appendix B).