

EPA has recently published two Other Test Methods (OTM) to our website for consideration.

OTM-37 – Measurement of Primary Direct PM_{2.5} and PM₁₀ Emissions at Low Concentrations by Dilution Sampling (Constant Sampling Rate Procedures)

This method combines the particle size separation principles of Method 201A with a system that dilutes and cools the sample gas prior to collection of the PM passing through the cyclone size separation stage, along with condensable PM, on a membrane filter. Sample gas is extracted from the stack or duct at a pre-determined constant sample gas flow rate to achieve near isokinetic sampling rates through in-stack PM₁₀ and/or PM_{2.5} cyclones. The cyclones separate particles with nominal aerodynamic diameters of greater than 10 µm, less than 10µm and greater than 2.5 µm, and allow particles 2.5 µm and smaller entrained in the stack gas sample to continue through the heated sample probe and heated sample venturi. The stack gas sample is diluted with filtered, dehumidified, and temperature-adjusted air prior to and at the mixing cone. After mixing of the dilution air and stack sample gas to allow for particulate condensation and gas-particle interaction, PM_{2.5} is captured on a 47 mm PTFE membrane sample filter.

This method builds upon the previous dilution PM method (CTM-39) with modifications to the sampling system to limit deposition on the sampling surfaces and collect the PM on a PTFE membrane filter using partial flow sampling. The use of a PTFE membrane filter allows for the use of more sensitive gravimetric procedures (i.e., ambient PM_{2.5} analytical procedures) which may improve the overall precision of the method.

This method was submitted by Ramboll Environ, Inc. in conjunction with the American Petroleum Industry (API). This method has yet to be validated on any source category and may only be used in federally enforceable State and local programs (e.g., Title V permits, State Implementation Plans (SIP)) provided the request has been through the EPA Regional SIP approval process or permit veto opportunity and public notice with the opportunity for comment.

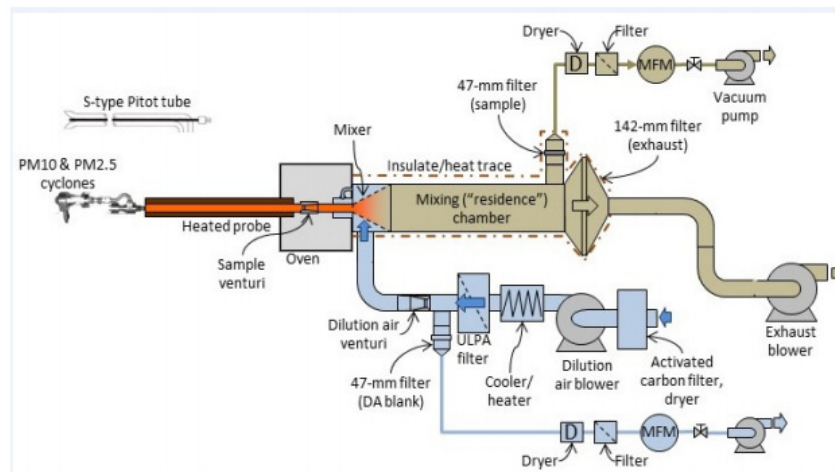


Figure 1: OTM37 dilution sampling train for low PM₁₀ and/or PM_{2.5} concentrations.

MTG contacts – Jason Dewees, Dave Nash, and Ned Shappley

Link: https://www.epa.gov/sites/production/files/2018-05/documents/otm37_v1.0.pdf

OTM – 40 Determination of Hydrogen Chloride Emissions from Coal-Fired Combustion Sources Using Sorbent Traps

This method takes the sampling technique and the approach to performance specifications found in the sorbent based measurement method for mercury emissions (Method 30B, 40 CFR 60, Appendix A) and applies them to the measurement of hydrogen chloride (HCl) emissions. Specifically, known volumes of flue gas are extracted from a stack or duct through paired, in-stack sorbent media traps at an appropriate flow rate. For each test run, paired train sampling and trap spiking are required to determine measurement precision and bias and verify acceptability of the measured emissions data. The sorbent traps are recovered from the sampling system, prepared for analysis as needed, and analyzed by ion chromatography.

This method was submitted by the Energy and Environmental Research Center (EERC) on behalf of the Electric Power Research Institute (EPRI). At this time, the use of this method has been approved for regulatory use at coal-fired electric utility steam generating units subject to 40 CFR Subpart UUUUU, see <https://www.epa.gov/sites/production/files/2018-05/documents/alt129.pdf>.

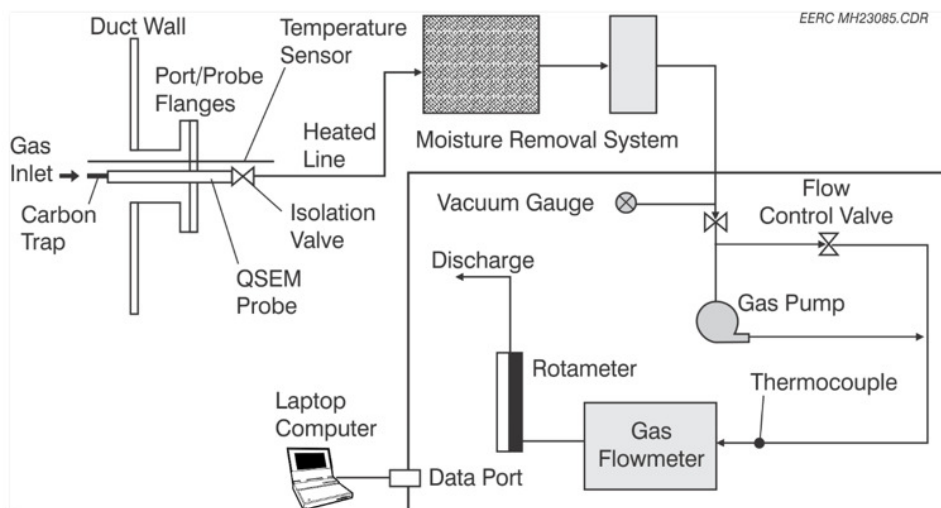


Figure 17-1. Sorbent trap sampling system.

MTG contacts – Robin Segall and Ned Shappley

ORD contact – Jeff Ryan

Link: https://www.epa.gov/sites/production/files/2018-05/documents/otm-40_05-2018.pdf