Laboratory Equipment and Material List

EPA 464: Analytical Methods for Air Quality Standards

Equipment and Instrumentation List

Item #	Quantity	Description
1	1-4	Dynamic Dilution Calibration System(s) (i.e., MFC Calibrator). One of which should be equipped with a permeation oven. May substitute with precision rotameters or Mass Flow Meters/Controllers and flow control valves.
2	1	SO2 ambient air analyzer Note: High Sensitivity Precursor Gas Analyzer acceptable
3	1	NO-NO2-NOX ambient air analyzer
4	1	CO ambient air analyzer (preference for - GFC NDIR Spectrometer) Note: High Sensitivity Precursor Gas Analyzer acceptable
5	1	Ozone ambient air analyzer (UV Photometer)
6	1	Ozone transfer standard
7	1	NOy high sensititvity ambient analyzer - OPTIONAL
8	1-2	Primary Standard Flow Meter(s) (e.g., Gilibrator ™, Dry-Cal™) to troubleshoot and verify dilution system and analyzer flow rates. May substitute with a 1 liter, Class A buret and stopwatch.
9	1-4	Strip chart recorder(s) or DAS(s) Preferably a 3 channel strip chart unit for use with the NO-NO2-NOX analyzer. The others can be single channel.
10	0-2	Voltmeters to measure output and for troubleshooting activities

Material and Supply List

Item #	Quantity	Description
1	4	Zero air sources appropriate for calibration of each of the analyzers. These maybe cylinder gases or zero air generators with appropriate traps and filters. It would be prudent to have on hand more than the required number of cylinders in case of accidental release or atypical demand.
2	1 each	1 each of standard gas sources for CO, SO2, and NO/NO2. The SO2 may be supplied by compressed cylinder gas or permeation tube (must have a permeation system available). The source of maybe generated by GPT using the NO cylinder gas or permeation tube (must have a permeation system available).
3		Teflon tubing
4		Swagelok fittings
5		Graph paper