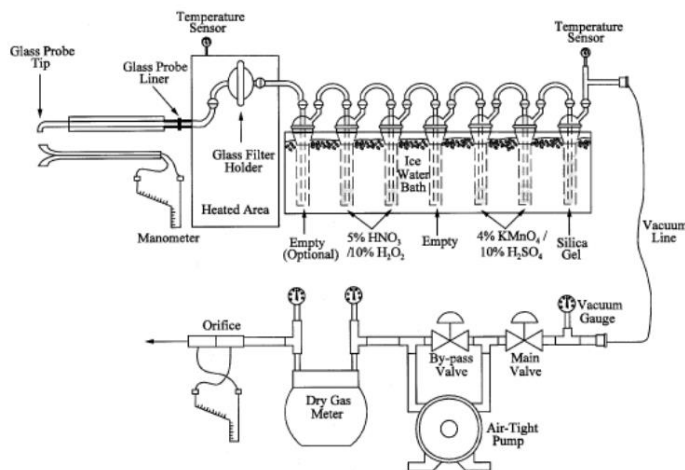


METHOD 29—DETERMINATION OF METALS EMISSIONS FROM STATIONARY SOURCES

- ✓ Complete set of base equipments & all accessories
- ✓ Modular design for easy setup on site
- ✓ Technical assistance
- ✓ Training on Methods
- ✓ Training on sampling & collection
- ✓ Lab analysis
- ✓ Quick turn-around Emissions reports
- ✓ Low cost & reliable



[Metals Sampling Train]

MAJOR APPLICATIONS

- ✓ Stack gas sampling
- ✓ EPA Emissions reporting
- ✓ Backup for CEMS
- ✓ Baseline studies
- ✓ Process improvements

A stack sample is withdrawn isokinetically from the source, particulate emissions are collected in the probe and on a heated filter, and gaseous emissions are then collected in an aqueous acidic solution of hydrogen peroxide (analyzed for all metals including Hg) and an aqueous acidic solution of potassium permanganate (analyzed only for Hg). The recovered samples are digested, and appropriate fractions are analyzed for Hg by cold vapor atomic absorption spectroscopy (CVAAS) and for Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, P, Se, Ag, Tl, and Zn by inductively coupled argon plasma emission spectroscopy (ICAP) or atomic absorption spectroscopy (AAS). Graphite furnace atomic absorption spectroscopy (GFAAS) is used for analysis of Sb, As, Cd, Co, Pb, Se, and Tl if these elements require greater analytical sensitivity than can be obtained by ICAP. If one so chooses, AAS may be used for analysis of all listed metals if the resulting in-stack method detection limits meet the goal of the testing program. Similarly, inductively coupled plasma-mass spectroscopy (ICP-MS) may be used for analysis of Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, Ag, Tl and Zn

Bill of Material for IILLCS-21 Method 29 Add-on Kit

Basic Kit	Union, straight, 16 mm, body, PTFE	Bottle, glass wide mouth w/ PTFE cover	
Impinger bottle, 500 ml glass bottle	Nut, 16 mm, PTFE	Tape, PTFE	Funnel, glass
Impinger insert, plain, kit	Filter, quartz, round, 82mm	Tweezer, PP	Nozzle brush, PTFE
Impinger insert, short kit	Ball joint clamp, #28	Impinger connector, glass	

[USEPA Method 29 Link](#)