

Air Testing Capabilities Using Silonite® Canisters



AGAT Laboratories has enhanced its air service capabilities to include Silonite-coated canisters, commonly referred to as SUMMA canisters, for whole-air sampling of Volatile Organic Compounds (VOCs), Reduced Sulphur Compounds (RSCs), and other target compounds. Sampling is now easier and more effective using EPA methods TO-15A and ASTM D5504 for air quality analysis. These contaminants can be released from industrial processes, petroleum and natural gas operations, wastewater treatment, landfills, contaminated sites, and other sources.

Monitoring these compounds helps organizations identify and characterize emissions, assess potential impacts on air quality, support regulatory requirements, investigate odours and complaints, and evaluate environmental and occupational concerns. AGAT Laboratories provides VOC and RSC analytical services for a wide range of applications, including:

- Ambient Air Monitoring
- Source Emissions Testing
- Indoor Air Quality Assessments
- Landfill and Wastewater Applications
- Remediation
- Site Characterization
- Odour Concerns

Silonite® Canisters

6 L Silonite-coated stainless-steel canisters are used to collect, transport, and store air samples containing trace concentrations of volatile organic compounds (VOCs) and reduced sulfur compounds (RSCs). The canister's internal surface is electropolished and chemically deactivated to create an exceptionally smooth, inert surface that minimizes interactions between the collected sample and the vessel walls. This inert surface is critical when sampling compounds at low concentrations (ppb), as active sites on untreated stainless steel can cause adsorption, reactions, or loss of target compounds. Silonite treatment significantly reduces these interactions, helping to preserve sample composition and maximize recovery of target analytes during laboratory analysis. The 6 L canister size is ideal for collecting a large volume of air or sampling over a longer period of time, up to 24 hours.

1.4 L Silonite MiniCans are compact and lightweight, making them well-suited for portable and investigative applications, including indoor air, soil vapour, vapour intrusion and sampling, where space or portability is important. Aside from being smaller, the MiniCans are identical to their 6 L counterparts, holding trace compounds stable within the vessel walls.

VOC Testing by GC-MS

AGAT analyzes whole-air canister samples for volatile organic compounds (VOCs) using gas chromatography–mass spectrometry (GC-MS). This testing identifies and measures individual target compounds to support ambient and indoor air monitoring, emissions investigations, site characterization along with other environmental and industrial applications.

Compounds AGAT can measure include:

- 1,1, Dichloroethene
- 1,1,2, Trichlorotrifluoroethane
- 1,4, Difluorobenzene (ISTD)
- Dichloroethane
- Trichloroethane
- 1,1,2 Trichloroethane
- 1,1,2,2 Tetrachloroethane
- 1,2 Dibromoethane
- 1,2 Dichlorobenzene
- 1,2 Dichloroethane
- 1,2 Dichloropropane
- 1,2,4 Trichlorobenzene
- 1,2,4 Trimethylbenzene
- 1,3, Butadiene
- 1,3 Dichlorobenzene
- 1,4 Dioxane
- 1,3,5 Trimethylbenzene
- 1,4 Dichlorobenzene
- 2, Hexanone
- 2,2,4 Trimethylpentane
- 3 Chloro-1-propene
- Acetone
- Acrolein
- Benzene
- Benzyl Chloride
- Bromochloromethane (ISTD)
- Bromodichloromethane
- Bromofluorobenzene (Surrogate)
- Bromoform
- Bromomethane
- Carbon Disulfide
- Carbon Tetrachloride
- Chlorobenzene
- Chlorobenzene-D5 (ISTD)
- Chloroform
- Chloromethane
- Cis 1,2 Dichloroethene
- Cis 1,3 Dichloropropene
- Cyclohexane
- Dibromochloromethane
- Dichlorodifluoromethane
- Dichloromethane
- Dichlorotetrafluoroethane
- Ethanol
- Ethyl 4, Methylbenzene
- Ethyl Acetate
- Ethylbenzene
- Heptane
- Hexachlorobutadiene
- Hexane
- Isopropyl Alcohol
- Isopropylbenzene
- MTBE
- Methyl Ethyl Ketone
- Methyl Isobutyl Ketone
- Methyl Methacrylate

- m,p-Xylene
- n-Butane
- n-Nonane
- n-Pentane
- Xylene
- o-Chlorotolunene
- Propene
- Propylbenzene
- Styrene
- tert-Butanol
- Tetrachloroethene
- Tetrahydrofuran
- Toluene
- Trans 1,2 Dichloroethene
- Trans 1,3 Dichloropropene
- Trichloroethene
- Trichlorofluoromethane
- Vinyl Acetate
- Vinyl Bromide
- Vinyl Chloride

RSC Analysis by GC-SCD

AGAT uses gas chromatography with sulphur chemiluminescence detection (GC-SCD) to separate and measure individual reduced sulphur compounds (RSCs) in gaseous samples. This testing can help characterize sulphur emissions, investigate odour concerns and assess samples from natural gas operations and other industrial or environmental sources.

Compounds AGAT can measure include:

- 1-Pentanethiol
- 2,5-Dimethylthiophene
- 2-Ethylthiophene
- 2-Methylthiophene
- 3-Methylthiophene
- Butyl Mercaptan
- Carbon Disulphide
- Carbonyl Sulphide
- Diethyl Sulphide
- Dimethyl Disulphide
- Dimethyl Sulphide
- Ethyl Mercaptan
- Hydrogen Sulphide
- Isobutyl Mercaptan
- Isopropyl Mercaptan
- Methyl Mercaptan
- n-Propyl Mercaptan
- Tertiary Butyl Mercaptan
- Thiophene

Note: Additional compounds may be available. Contact AGAT to discuss your target analytes and project requirements.