

Particulate Matter Speciation



RTI International provides quality support for all particulate matter air monitoring operations, from sampler set-up and training to data processing and management. Using advanced facilities and instrumentation, RTI's experienced scientists perform rigorous analysis and provide logistical support tailored to client monitoring network needs.

Chemical Speciation and Gravimetric Analysis of Filters

- **High-volume supplies distribution and sample receiving facility** capable of handling up to 50,000 sample requests per year
- **Gravimetric mass analysis** using unique walk-in weighing chambers to meet U.S. Environmental Protection Agency (EPA) temperature and humidity specifications and microbalances with 0.1 μg readability and 0.25 μg reproducibility
- **Ion analysis** of anions and cations in filter and denuder extracts by ion chromatography
- **Organic carbon/elemental carbon** and carbonate carbon by National Institute for Occupational Safety and Health (NIOSH) method 5040 and IMPROVE a method
- **Elemental analysis** to ultra-trace levels by ICPMS and EDXRF
- **Microscopy** for physical and chemical particle characterization by transmission electron microscopy and variable-pressure scanning electron microscopy
- **Organic analysis** of semivolatile compounds in filter and denuder extracts by gas chromatography-mass spectroscopy
- **Black carbon analysis** by laser-induced incandescence (LII) and optical density

Field, Database, and Quality Assurance Support

- Sampler system support
- Field logistical support
- Data management
- Full quality assurance support



Choose RTI for Total Network Support

RTI has extensive, long-standing experience and capabilities in assisting the nation's particle monitoring networks. We offer services in chemical speciation of both coarse and fine particles and related gases, filter preparation, shipment of prepared sampling media for filter-based air monitoring networks, and quality assurance and training for both field and laboratory studies.

Program personnel are actively working with federal and regional EPA laboratories and offices, state environmental agencies, and commercial firms. Since 1999, when EPA selected RTI to support these activities, we have served as the sole contractor for the chemical speciation of particulate matter filter samples for the nationwide monitoring sites network.



More Information

Prakash Doraiswamy
Research Environmental Scientist
919.990.86483
pdoraiswamy@rti.org

Keith Levine
Research Analytical Chemist
919.541.8886
levine@rti.org

RTI International
3040 E. Cornwallis Road, PO Box 12194
Research Triangle Park, NC 27709-2194 USA
www.rti.org

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