



# Analytical Sciences at RTI International

## Analytical Instrumentation and Equipment

- GC with FID, ECD, NPD, FPD, TCD, and head space analysis available
  - GC-MS (MS and MS/MS)
  - High-resolution GC-MS and MS/MS
- UHPLC, HPLC, IC, CIC with PDA, UV, CAD, ELSD, conductivity, electrochemical, fluorescence detection
  - LC-MS/MS and UHPLC-MS/MS systems with ESI, APCI, and APPI ion sources
  - LC-high-resolution MS and MS/MS
- Elemental analysis (ICP-OES, ICP-MS, SF-ICP-MS, EDXRF, CHNS)
- Phase imaging and identification by optical microscopy (stereomicroscopy and PLM), electron microscopy (ESEM-EDX, TEM), AFM, XRF, and XRD
- Physicochemical characterization (particle counting, melting point, surface area, porosity, physisorption, chemisorption, TGA)
- Spectroscopy (NMR,  $\mu$ -FTIR, CD, fluorescence, energy dispersive, polarimetry, refractometry)
- Automated colorimetric measurements (SFA)
- Particle sizing (SEC, laser light diffraction, DLS, MALS, optical and electron microscopy)
- Moisture analysis (Karl Fischer, coulometric)
- Dissolution and disintegration testing
- Sample preparation (Class 100 clean hoods, contamination-controlled facilities)
- Monitored cold storage and environmental stability and photostability chambers
- Ancillary prep equipment item (ball mill, cryomill, vacuum evaporator, and sputter coater)

RTI International offers a comprehensive suite of capabilities that can be leveraged to solve your most challenging analytical problems. Our experts have decades of experience developing novel and unique methods to study chemical composition, physical structure and morphology, identification of unknowns, and trace level analysis. Our collective decades of experience can also be brought to bear for novel method development and validation projects. We have successfully supported and collaborated with hundreds of public- and private-sector clients, including those in the pharmaceutical and life sciences, personal care, food and beverage, environmental, and oil and gas industries.

## The RTI Advantage

RTI has a team of more than 80 analytical scientists with extensive capabilities built over 5 decades. Areas of expertise include separations, spectroscopy, microscopy, and physical testing. In addition to technical expertise, our scientists are well-versed in project management systems that will ensure your projects are completed on time and within budget.

# Analytical Sciences: Custom Solutions to Real-World Challenges

## In Vivo, In Vitro, and In Silico Toxicology Analysis



RTI provides a comprehensive range of in vivo, in vitro, and in silico preclinical testing services for emerging chemicals of concern. Our in vitro labs are GIVIMP-certified to provide the highest confidence in our results.

## Air and Water Quality Assessment



RTI has a comprehensive suite of analytical instrumentation to measure nutrients as well as ionic and polar organic contaminants in urban and rural environments.

## Bioanalytical Method Development and Validation



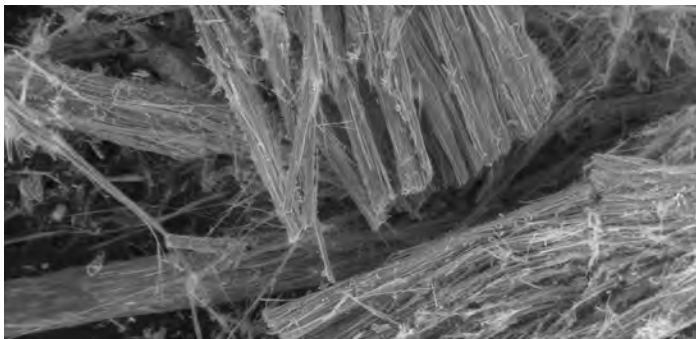
Our scientists develop, validate, and apply Good Laboratory Practice (GLP) methods for analysis of foods, cosmetics, and pharmaceuticals in complex biological matrices, in support of preclinical and clinical studies.

## Testing Lead and PFAS in Drinking Water (Safe Drinking Water for Kids and Schools)



RTI has implemented the Clean Water for US Kids™ program, which assists local and state governments in monitoring lead and per- and polyfluoroalkyl substances (PFAS) in drinking water within schools and child care facilities.

## Proficiency Testing and Industrial Hygiene



We ensure the competence of other laboratories through our subject matter expertise and technical support of client-administered programs such as the AIHA Beryllium, Bulk Asbestos, and Industrial Hygiene Proficiency Analytical Testing Programs.

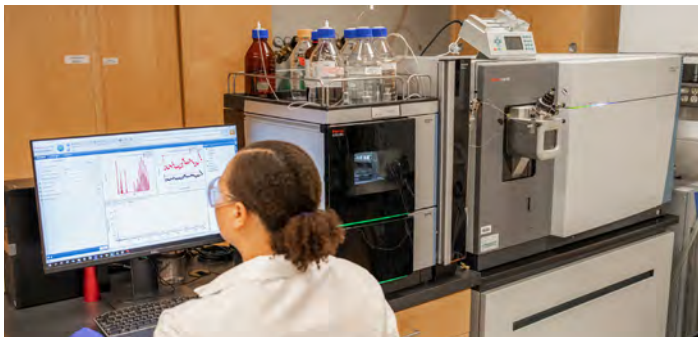
## Novel Biopesticides



RTI collaborates with agricultural researchers to discover novel pesticides and biopesticides for sustainable agriculture through advanced analytical characterization.



### Characterization of Emerging Contaminants of Concern



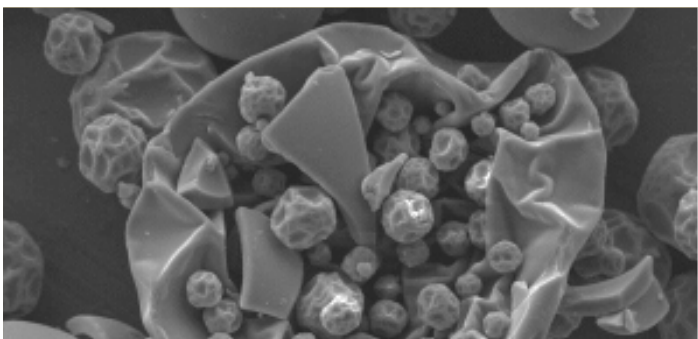
RTI has the experience and high-resolution instrumentation to identify and quantify novel environmental contaminants in a variety of matrices such as PFAS, microplastics, pesticides, flame retardants, pharmaceuticals, and more in a variety of matrices.

### Synthesis and Characterization of Metabolites and Other Compounds



RTI regularly synthesizes metabolites and other labeled/non-labeled compounds and characterizes them using non-targeted, broad spectrum, and targeted analytical approaches.

### Contamination Control



RTI routinely provides measurements to control contamination in the automotive, semiconductor, and pharmaceutical industries.

### Specialty Formulation

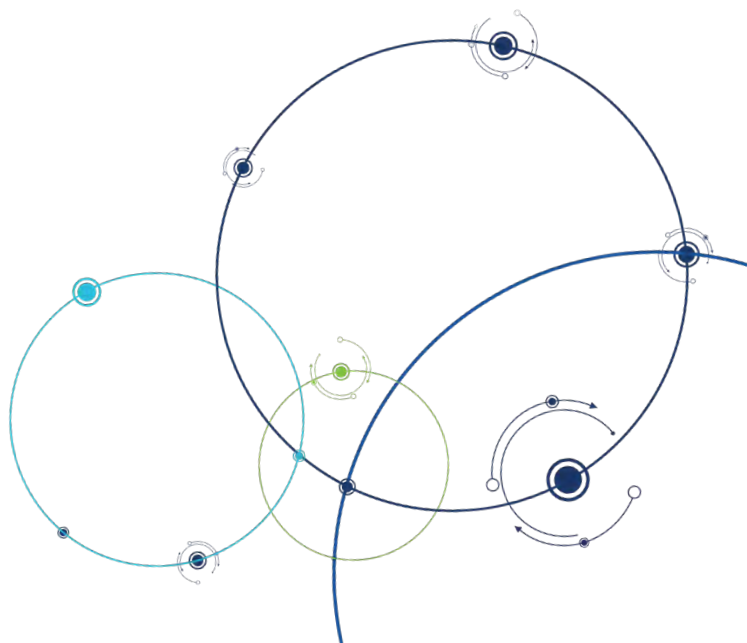


RTI's Materials Handling Facility serves as a GLP chemical repository to aliquot and ship samples worldwide. The facility also provides support for GLP toxicology studies with feed diet, gavage, drinking water, and IV formulations.

### Complex Chemical Characterization



RTI provides time-critical support for multiple product safety studies to characterize complex substances for commercial clients in compliance with GLP and EPA FIFRA regulations.



## Accreditations

RTI's numerous accreditations are evidence of our robust quality systems and adherence to established U.S. and international quality standards:

- Accredited air emissions laboratory—Louisiana Environmental Laboratory Accreditation Program/National Environmental Laboratory Accreditation Program (LELAP/NELAP) accreditation for the determination of particulate matter and trace metals in ambient air. LELAP Certificate #04017
- North Carolina Department of Health and Human Services Laboratory certification, in accordance with the provisions of regulations 10A NCAC 42D 0.200 certification for the analysis of drinking water for analyte group – inorganic chemistry.
- Georgia Department of Natural Resources Environmental Protection Division certification by reciprocity in accordance with the Georgia Safe Drinking Water Act of 1977 (Sections 12-5-170 through 12-5-193, O.C.G.A.) and the Rules for Safe Drinking Water (Chapter 391-3-5) for the analysis of drinking water for analyte group – inorganic chemistry.
- Florida Department of Health, Bureau of Public Health laboratory accreditation in accordance with Florida Administrative Code 64E-1 for analyte groups primary and secondary inorganic contaminants.

In addition, our familiarity and compliance with regulatory requirements, such as GLP and (current) Good Manufacturing Practices (GMP and cGMP), engenders confidence in our analytical data.



## Accreditation List



RTI International (Laboratory ID 100600) is accredited by the AIHA Laboratory Accreditation Programs, LLC (AIHA LAP) in the Industrial Hygiene and Environmental Lead laboratory accreditation programs for:

- Asbestos and other fibers in air
- Asbestos in bulk materials
- Anions and cations in particulates and aerosols in air
- Anions and cations extracted from sorbent pads
- Particulates in air
- Metals in air
- Respirable silica
- Lead in airborne dust
- Lead in paint
- Lead in settled dust by wipe
- Lead in soil

## More Information

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[www.rti.org](http://www.rti.org)

RTI International is an independent, scientific research institute dedicated to improving the human condition. Our vision is to address the world's most critical problems with technical and science-based solutions in pursuit of a better future. Clients rely on us to answer questions that demand an objective and multidisciplinary approach—one that integrates expertise across social, statistical, data, and laboratory sciences, engineering, and other technical disciplines to solve the world's most challenging problems. For more information, visit [www.rti.org](http://www.rti.org).

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RTI 9696 R6 0425