

CHEMICAL SAFETY AND ASSESSMENT



DEVELOPMENT OF TEST AND ANALYTICAL METHODS

Providing tailored solutions based on aerosol physics, bio and environmental analytics

We offer our clients comprehensive consulting and expert opinions in analytical issues that are often beyond the scope of commercially available routine analyses. In close contact with our clients we develop customized analytical strategies, which in most cases we lead to the desired success by means of defined sub-projects. The success is guaranteed by the broad expertise of our experienced staff and the use of state-of-the-art analytical technologies and methods.

In addition, we offer research and development projects in the field of aerosol research, employing methods of physics, process engineering, and physical chemistry. We are equipped with a comprehensive range of state-of-the-art aerosol instrumentation and have access to special units such

as the institute's mechanical and electronics workshops, enabling flexible and quick responses to clients' specific needs. Novel customized instruments and methods can thus be developed and manufactured on site.

Key topic

Besides the development of analytical methods and their validation in compliance with the relevant guidelines (GLP and non-GLP), we study health-relevant aspects of airborne substances: physical and chemical characterization of emissions, research on aerosols and vapors in connection with inhalation exposure, and support in the development of safe products in view of inhalation exposure.

Contact

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Nuclear magnetic resonance spectroscopy is used for chemical analysis and structural elucidation of metabolites and organic compounds.

Our services and expertise

Analytical chemistry

- Detection of indoor air pollutants and airborne particles
- Identification and quantification of contaminants and their degradation products in the environment
- Biomonitoring – determination of the bioavailability of pharmaceuticals and food contaminants and, if applicable, their metabolites, (heavy) metals and other chemicals, and test substances from production and development scenarios
- Analyses of substances and products required for registration and authorization (REACH, BPD/BPR etc.)
- Targeted metabolomics and both target and non-target analysis of inorganic and organic compounds
- Monitoring of airborne substances at workplaces
- Characterization of complex mixtures in environmental samples and biological matrices
- Structural elucidation of drug substances and natural products and of their metabolites

Aerosol research

- Development of instruments and methods for measurement, collection, and generation of aerosols
- Development of methods and technologies for controlled inhalation studies with different atmospheres

Your benefits

- Development of custom-tailored test methods and analytical procedures
- “One-stop shop” for the development of test methods and analytical procedures based on a broad spectrum of in-house expertise: toxicology, clinical trials, chemical risk assessment
- Efficient and on-time project work benefiting from the expertise of our experienced team

Fraunhofer ITEM

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The Fraunhofer Institute for Toxicology and Experimental Medicine ITEM is one of about 70 institutions of the Fraunhofer-Gesellschaft, Europe's leading organization for applied research. Protecting man from health hazards in our industrialized world and contributing to the development of novel therapeutic approaches are the aims Fraunhofer ITEM is pursuing with its contract research, with a focus on airway research.

In the area of chemical safety we assess the risks from potentially harmful substances and support the development of novel products with an eye on human health and the environment. We can draw upon a broad spectrum of expertise, covering toxicology testing, exposure assessment, analytical methods, regulatory research, and chemical risk assessment.

From compound to safe products

Development of test and analytical methods

Toxicology testing

Exposure characterization

Regulatory research and risk assessment