

AGAT Laboratories



Environmental Toxicology

Toxicology is the science that studies toxic substances, their etiology (origin), their contact and effects on organisms (target organs) and on the environment (ecotoxicology), and the means to detect and eliminate or reduce them.

Ecotoxicology, a scientific discipline at the interface between ecology and toxicology, studies the behavior (fate) and the effects of artificial or natural pollutants on ecosystems.

Ecotoxicological tools are used for the fate and effects (toxicity) assessment of contaminants present in wastewater, municipal and industrial effluent, receiving water, groundwater, landfills, soils, sediments, sludge, chemical substances, and products.

AGAT Laboratories provides full-service environmental toxicology analyses (toxicity tests) of water, soils, and sediments, including effluent testing for industries to meet provincial and federal government compliance regulations. Our Ecotoxicology department, based in Montreal (QC) offers analytical services to our clients across the country. Our laboratory can test according to the daily, weekly, monthly and yearly requirements of key regulatory bodies. Our strong and diversified world-class team includes senior environmental toxicologists, biologists, and chemists who provide a range of services from routine toxicity testing to special projects that require toxicological or chemical tools, customized assessment methods, technical / scientific

reports, or research / development. **AGAT is your best choice for routine and specialized toxicity testing.**

Environmental: Toxicology - Ecotoxicology

Analytical services for water, sediment, soil, and chemical substances.

AGAT offers multiple analytical solutions for routine environmental monitoring and customized toxicological assessments, such as:

- Acute, Sublethal, and Chronic Toxicity Assessments
- Standard toxicity tests (CEAEQ, Environment Canada, US EPA, ISO, ASTM, OECD)
- Genotoxicity Testing (Environment Canada, ASTM, OECD)
- Bioaccumulation Tests (ASTM, US EPA, OECD)
- Biodegradation Tests (OECD)
- Ecotoxicology Assessment (toxicology, fate, hazard, risk)
- Toxicology Identification/Reduction Evaluation (TIE/TRE) Studies
- Chemical Product Testing (for registration with agencies)
- Biomarkers of exposure and effects using aquatic and terrestrial organisms
- Tissue analysis for metals and organic compounds

Standard Toxicity Tests

AGAT can perform toxicity tests with substances, single contaminants, mixtures, or samples in different matrices (water, soil, sludge, and sediment) including:

- **Aquatic Toxicity:**

Microtox, Respiration test, Algae (*Raphidocelis subcapita*), Duckweed (*Lemna minor*), Daphnia (*D. magna*), Ceriodaphnia (*C. dubia*), Fathead Minnow (*Pimephales promelas*), Rainbow Trout (*Oncorhynchus mykiss*)

- **Terrestrial Toxicity:**

Plants, Earthworm (*Eisenia andrei*), Springtail / Collembola (*Folsomia candida*), Mite (*Oppia nitens*)

- **Freshwater Sediment Toxicity:**

Solid Phase Microtox, Amphipod (*Hyaella azteca*), Midge (*Chironomus dilutus / riparius*), Blackworm (*Lumbriculus variegatus*), Amphibians (*rana pipiens*, *Xenopus leavis*)



Specialty Services

Our Specialty Services Division based in Montreal, Quebec, offers Environmental Toxicology analysis and ecotoxicological assessment services, Ultra-Trace analysis, Food Chemistry, and Environmental Microbiology testing. Ultra-Trace analytical services use Gas Chromatography / High Resolution Mass Spectrometry (HRGC/HRMS), Gas Chromatography / Tandem Mass Spectrometry (GC-MS/MS), Liquid Chromatography / Tandem Mass Spectrometry (LC-MS/MS), and Ultra Performance Liquid Chromatography (UPLC) technologies.

HRGC /HRMS

- Dioxins and Furans
- PCBs
- PAHs
- Polybrominated Diphenyl Ethers (PBDEs)

LC-MS/MS

- Explosives (EPA 8330b)
- Perfluorinated Organics (Carboxylic and Sulfonic Acids)
- Perchlorate
- Hydrazine
- Nonylphenol
- Nonylphenol Ethoxylates
- Octylphenol
- Octylphenol Ethoxylates
- Bisphenol A

GC-MS/MS

- Pesticide Residue
- Steroids
- SVOCs in Air (PAHs, PCBs, Phenols, Chlorobenzenes)

Ecotoxicology Department /Environmental Toxicology

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