



CANMET MINING AND MINERAL SCIENCES LABORATORIES

Ecosystem Risk Management



Program objectives

The Ecosystem Risk Management Program conducts leading-edge research on environmental effects related to metals and links environmental science to policy. It contributes to knowledge and technologies required for metal product stewardship and to the management of environmental risks related to mining and metallurgical activities. The Program influences metals-related domestic and international environmental policies, guidelines, protection measures and regulations.

Expertise

The Program has developed multidisciplinary metals-related expertise that is recognized world-wide in the areas of environmental toxicology, environmental chemistry, hazard identification and risk and life cycle assessment (LCA).

Key issues

Metal product stewardship

- research and development of the reactivity of metals, metal compounds and alloys in environmental aquatic systems
- development, validation and implementation of the Transformation/Dissolution (T/D)

Protocol for metals and metal compounds. This protocol from the Organization for Economic Co-operation and Development is incorporated as a section of the United Nations Globally Harmonized System of Classification and Labelling of Chemicals.

- new approaches on T/D studies of alloys for hazard identification
- development and application of LCA methodologies for assessing environmental impacts of products from cradle to grave

Risk assessments for metals

- determination and prediction of trace metal fate, bioavailability and toxicity in receiving waters and mine effluents
- data analysis and development of tools for metal mining effluent environmental effects monitoring
- speciation and chemical characterization of base metal stack particulates for the prediction of their behaviour upon release to the atmosphere
- ecotoxicity testing related to performance evaluation for acid mine drainage prevention and treatment technologies such as shallow-water covers and bioreactors

Contact Us

This research is part of CANMET-MMSL's broader plan to foster sustainable growth in Canada's mining and mineral industry. To work with us, contact

www.nrcan-rncan.gc.ca/mms-smm/tect-tech/index-eng.htm

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