



# Trace and ultra-trace analyses with extended elemental coverage

The Luleå laboratory provides the analytical technology, knowledge and experience of quantifying elemental concentrations of more than 70 elements in a large number of materials and matrices, i.e. screening analyses. These extended state-of-the-art analyses provide ultra-trace elemental analyses for high purity water down to pg/l levels by ICP-SFMS.

To meet our customers' specific requirements, we develop client-specific methods in-house, as well as perform routine quality control of novel products and raw materials.

Routine ultra-trace analyses of complex matrices are often extended to our comprehensive **screening package**, providing semi-quantitative or quantitative analytical data for up to 72 elements.

Trace and ultra-trace elemental analyses with extended elemental coverage and state-of-the-art limits of detection (e.g. screening analyses) are useful for a number of applications such as:

- Estimating background levels in environmental samples such as water, biota, sediment, etc.
- Identifying elemental pattern of an extended number of trace and ultra-trace elements (i.e. full elemental content) if unknown. Data from our screening analyses are often used in the process of selecting elements for routine monitoring.
- Elemental impurity analysis for a broad range of matrices, ranging from metals to ultra-pure chemicals.
- Together with stable isotope analysis, screening analyses are used for authentication of food origin, as well as for identifying geographic origin of forensic or archeological matrices.
- The application of screening analyses has dramatically increased within the research field Environmental forensics, with a specific increase for PGE (platinum group elements)

Since screening analyses are utilized for a large variety of applications, it is of utmost importance that information about the main purpose for the analysis is provided to the laboratory prior to order fulfillment. This will allow the laboratory to offer the best possible analytical methodology based on client demand.

The screening analysis can be offered either as semi-quantitative analyses or as full quantitative analyses for all elements included, or as a combination of the two alternatives. Please contact us for more information or to request a quotation.

## Our elemental screening analyses include the following elements:

Aluminium, Al	Holmium, Ho	Ruthenium, Ru
Antimony, Sb	Iodine, I	Samarium, Sm
Arsenic, As	Iridium, Ir	Scandium, Sc
Barium, Ba	Iron, Fe	Selenium, Se
Beryllium, Be	Lanthanum, La	Silicon, Si
Bismuth, Bi	Lead, Pb	Silver, Ag
Boron, B	Lithium, Li	Sodium, Na
Bromine, Br	Lutetium, Lu	Strontium, Sr
Cadmium, Cd	Magnesium, Mg	Sulfur, S
Caesium, Ce	Manganese, Mn	Tantalum, Ta
Calcium, Ca	Mercury, Hg	Tellurium, Te
Cerium, Ce	Molybdenum, Mo	Terbium, Tb
Chlorine, Cl	Neodymium, Nd	Thallium, Tl
Chromium, Cr	Nickel, Ni	Thorium, Th
Cobalt, Co	Niobium, Nb	Thulium, Tm
Copper, Cu	Osmium, Os	Tin, Sn
Dysprosium, Dy	Palladium, Pd	Titanium, Ti
Erbium, Er	Phosphorus, P	Tungsten, W
Europium, Eu	Platinum, Pt	Uranium, U
Gadolinium, Gd	Potassium, K	Vanadium, V
Gallium, Ga	Praseodymium, Pr	Ytterbium, Yb
Germanium, Ge	Rhenium, Re	Yttrium, Y
Gold, Au	Rhodium, Rh	Zinc, Zn
Hafnium, Hf	Rubidium, Rb	Zirconium, Zr



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