*Instrument: Thermo Fisher Scientific iCAP Q ICP-MS*

# Guidelines for Submitting Samples for ICP-MS Analysis

## 1. Scope and General Conditions

These guidelines apply to all samples submitted to the instrumentation facility (SIF) for analysis by Inductively Coupled Plasma Mass Spectrometry (ICP-MS). Submission of a sample implies acceptance of these conditions.

1. Users must contact SIF personnel before submission to confirm that the sample type and the analysis requested are suitable for the instrument.
2. Every batch of samples must be accompanied by a duly completed sample submission form stating the number of samples, the elements to be analysed and the expected concentration range.
3. The user must disclose all relevant details of the sample, including its source, chemical matrix and, where the user has digested the sample, the digestion procedure followed. Additional information must be furnished promptly whenever SIF requests it.
4. SIF reserves the right to reject any sample that does not comply with these guidelines.

## 2. Sample Types and Acceptance Criteria

1. Both digested and undigested samples are accepted.
2. Digested samples lose stability with time, which can affect the results. They must therefore be submitted for analysis at the earliest opportunity after digestion.
3. Samples must be non-explosive and non-corrosive.
4. Samples that are highly acidic or alkaline, saline or brackish waters, and samples with high total dissolved solids (TDS) will be rejected.
5. Samples containing organic solvents will be accepted only with prior approval from SIF.

## 3. Sample Preparation Requirements

1. Only Type 1 (ultrapure) water and high-purity, trace-metal-grade acids may be used for digestion and dilution.
2. Samples containing any trace of hydrofluoric acid (HF) must not be submitted, as HF damages the sample introduction components of the instrument.
3. The final acid content of the submitted solution, after digestion and dilution, must be less than 1%.
4. Digested samples must be filtered through a 0.22 µm filter and submitted as clear aqueous solutions, free of particulates.
5. Where the user performs the digestion, a method blank, prepared in the same way as the samples, must be submitted along with them.

## 4. Quantity, Containers and Labelling

1. For undigested samples, 100–500 mg of the sample must be provided.
2. For digested or liquid samples, a minimum volume of 10 mL must be provided, which allows for repeat measurements if required.
3. Samples must be submitted in clean, leak-proof, tightly capped containers, preferably pre-cleaned polypropylene tubes.
4. Each container must carry a unique, legible label that matches the entry in the sample submission form.

## 5. Calibration Standards

1. Standards are available at SIF for the following elements only: Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, Hg, In, K, Li, Mg, Mn, Na, Ni, Pb, Se, Sr, Tl and Zn.
2. For all other elements, the user must supply the required standards.
3. Standards supplied by the user must be certified, traceable standards, accompanied by their certificates of analysis.

## 6. Safety and Hazard Declaration

1. The user must clearly state if the sample contains any hazardous component.
2. For hazardous samples, the Material Safety Data Sheet (MSDS) and all relevant handling information must be attached to the submission form.
3. Radioactive and infectious (biohazardous) samples will not be accepted.

## 7. Liability and Declaration

1. If the user provides false or incomplete information and the equipment is damaged as a result, the full cost of repair or replacement will be charged to the user.
2. SIF is not responsible for unreliable results arising from improper sample preparation, contamination or non-compliance with these guidelines.
3. By submitting a sample, the user confirms that the information provided is accurate and that these guidelines have been read and understood.