5 questions about ICP-MS

1. When is trace elemental quantification important?
   - When very low levels of trace elements may have a profound effect on material properties or human health.
   - Food and beverage testing
   - Environmental monitoring
   - Materials manufacturing
   - Pharmaceutical monitoring
   - Clinical research
   - Geological, cosmochemistry, and marine sciences

2. What advanced applications are possible with ICP-MS?
   - Nanoparticle characterization
   - GC for volatile organometallic species
   - ICP-OES for speciation of trace elemental species
   - Laser ablation for solid sampling

3. Why are high precision isotope ratios important?
   - Accurate results enable you to derive different types of information about your sample.
   - Isotope ratios are commonly used in the geosciences and nuclear sector.
   - High precision isotope ratio information allows subtle differences between samples to be resolved.
   - Higher precision means the age of a geological sample can be determined within a smaller time interval.
   - Higher precision means the identification of geologic location can be more accurately pinpointed.

4. How is interference removal achieved in ICP-MS?
   - Precise Energy Dispersion (PED), with collision gas
   - On-column reaction to react the interference to a new mass
   - Mass Shift, using a reaction gas to react the analysis to a new mass

5. What are the typical detection limits of ICP-MS systems?
   - Detection limits vary with the application and the sample preparation method. For example:
     - Traces of Au in water (10 ng/mL)
     - Copper in blood (100 ppb)
     - Lead in blood (10 ppb)

How to Choose Your ICP-MS Solution

When selecting the right ICP-MS solution for your lab, some of the fundamentals to consider are performance, ease of use, and maintenance. It is important to evaluate productivity, cost per sample and reliability to maximize the return on your investment.

Are you aware of all potential interferences?

Yes

Does your application need ultralow detection limits?

No

Do you need high precision isotope ratios?

Yes

For applications that require high precision over a wide range of concentrations, the Triplet Quadrupole ICP-MS can deliver the accuracy and reliability you need.

For applications where complex samples are required, the High Resolution ICP-MS has all-around versatility to improve detection limits and resolve interference.

Learn more at thermofisher.com/icp-ms