

# 5 questions about ICP-MS

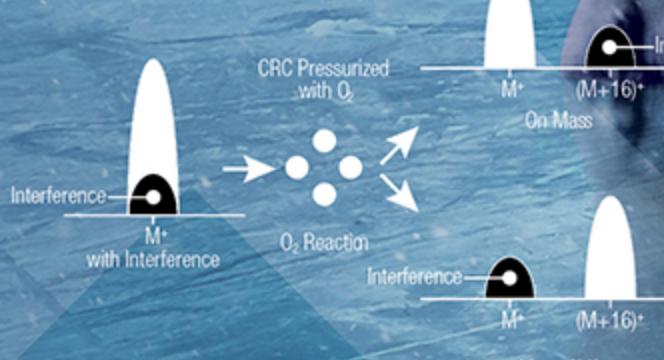
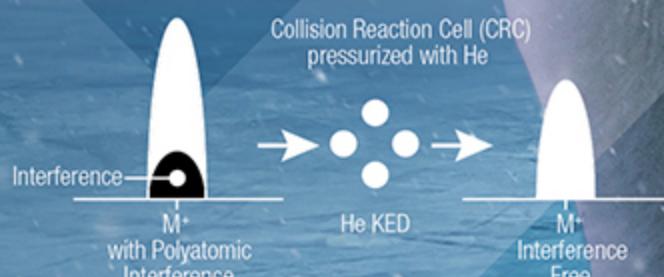
## 1. When is trace elemental quantification important?

When very low levels of metals or elements have a profound effect on material properties or human health and the environment.

- Food and beverage testing
- Environmental monitoring
- Materials manufacturing
- Pharmaceutical monitoring
- Clinical research
- Geological, cosmochemistry and marine sciences

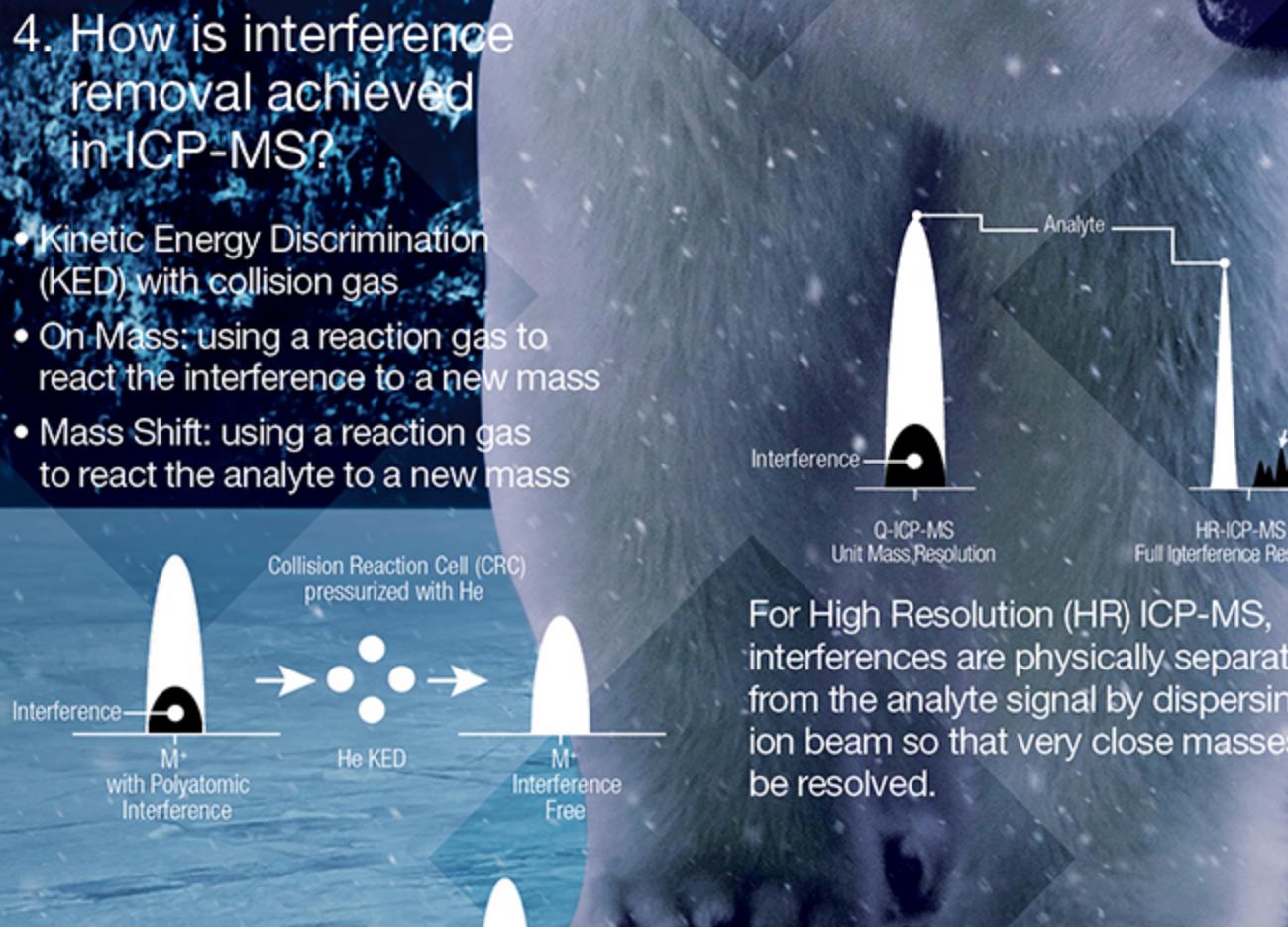
## 4. How is interference removal achieved in ICP-MS?

- Kinetic Energy Discrimination (KED) with collision gas
- On-Mass: using a reaction gas to react the interference to a new mass
- Mass Shift: using a reaction gas to react the analyte to a new mass



## 2. What advanced applications are possible with ICP-MS?

- Nanoparticle characterization
- GC for volatile organometallic species
- IC/LC for speciation of trace elemental species
- Laser ablation for solid sampling



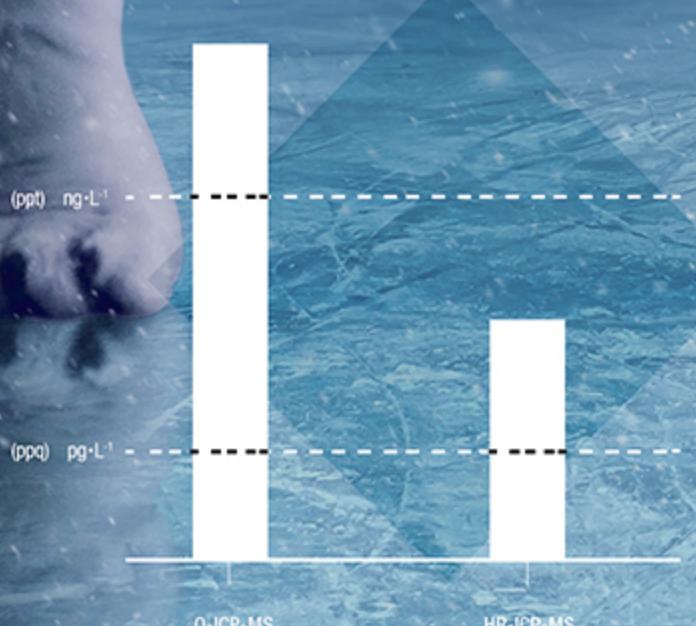
## 3. Why are high precision isotope ratios important?

Isotope ratios 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 to within a smaller time interval
- Higher precision means the final possibilities for geo-location can be narrowed to cover a smaller area
- Isotope ratios can also be used to determine authenticity of food and pharmaceutical products and for forensic applications
- Isotope ratios are integral to nuclear safeguards

## 5. What are the typical detection limits of ICP-MS systems?

Detection limits vary with the application and the sample preparation method, but you can expect mid to low parts per trillion (ppt) with Quadrupole ICP-MS and mid to low parts per quadrillion (ppq) with HR-Q-ICP-MS



# 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 user maintenance. It is important to evaluate productivity, cost per sample and reliability to maximize the return on your investment.

