



FAQ, Isotope analysis

Below we have summarized frequently asked questions and answers. We are updating the list of questions and answers continuously. If you do not find the answer to your question below, you are welcome to contact our customer service.

What is included in the price of analysis?

All prices are for single sample analyses. Discounts can be offered for batches and continuous projects. Please contact ALS Scandinavia for more information.

- Sample preparation (acid digestion or alkaline fusion).
- Matrix separation/analyte pre-concentration (if needed).
- ICP-SFMS screening of purified fraction to assess separation efficiency and analyte concentration.
- Two consecutive measurements against bracketing isotope standards with matched analyte concentration.
- Correction for spectral interferences and mass bias.
- Duplicate (entire procedure) for each 10 samples.

What is the major advantage of ALS Scandinavia compared to university labs?

TAT: standard delivery time is a couple of weeks as opposed to several months.

Thanks to access to different MS techniques, and highly efficient introduction systems, we can offer analyses in difficult matrixes and at low analyte concentrations.

Is it possible to supply samples as 'ready-to-run' solutions?

Yes, in order to lower the price of analysis, some customers prefer to perform sample preparation and analyte pre-concentration themselves. Given that information on acid matrix and analyte concentration is supplied with purified sample solutions, substantial (up to 50%) discounts can be available.

However, for such projects there is a risk of non-quantitative analyte recovery during purification stages, which may result in artificial isotope shift that is impossible to compensate for at the measurement stage.

Is it cheaper to order several isotope ratios from the same material?

Yes, as the same sample preparation (and in some cases even the same matrix separation) can be used for several isotope systems (e.g. Sr+Nd, Sr+Pb, B+Pb), ordering 2-3 isotope ratios from the same sample will be cheaper than 2-3 isotope ratios from 2-3 separate samples.

What is LOD (LOQ, LOR) for different isotope analyses?

As analyte isotopes can be separated from substantial sample amounts (hundreds of mls for liquids or tens g for solids), minimum amount of analyte is a better measure of method performance at low concentrations. There are also significant differences in minimum amount needed for ICP-SFMS and MC-ICP-MS.

Do we offer geological age determination (dating)?

Usually no, as we do not have experienced mineralogists. In some cases we can offer simplified 'whole-rock' dating. Alternatively, customer may supply samples in the form of mineral separates and order both radiogenic isotope ratios and concentrations of parent/daughter isotopes used for age calculations. Up to 5-7 mineral separates from single whole rock samples may be needed for reliable dating.

Do we offer isotope ratio measurements for C, N, O?

No, as isotopes of these elements are difficult to measure with atmospheric pressure ICP-MS.

What about elements that are not mentioned on this website (e.g. Cl, S, Ca, Tl etc.)?

In principle, we can offer isotope ratio measurements for such elements. However, unless it is a clean synthetic solution, separation of analyte from sample matrix will be necessary prior to the instrumental stage. Therefore, the price for such analysis will be considerable as we will need to develop (or adopt) and test the separation method.



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version 16-08-2017