Analysis requirements for the Q-ICPMS laboratory, Department of Geosciences, University of Oslo

LA-QICPMS element concentration analysis:

For mineral separates the minerals must be in polished, 2.5 cm diameter epoxy mounts. The minerals should not be placed near the rim of the mount as there is a small lip in the sample holder which covers (and casts a shadow over) a part of the epoxy mount. A safety margin of 4 mm from the edge of the mount should suffice.

Minerals which are to be analysed can be in standard thin sections.

Since in-situ U-Pb dating is run semi-routinely in the Q-ICPMS lab epoxy mounts and thin sections must be free of any contamination, Hg-contamination is especially a concern in U-Pb analysis since ^{204}Hg is an isobaric overlap on ^{204}Pb which is used as an indicator of the level of common-lead contamination in the zircon. Sources of contamination might be residue of adhesive used during picking, the epoxy itself, the grinding/polishing equipment etc.

Samples should be imaged - where an overview map and individual images of minerals (or images of clusters) are produced - prior to the laser-ablation-Q-ICPMS analysis.

Solution-QICPMS element concentration analysis:

The samples should be prepared following clean room laboratory practices. All reagents used, water, acid etc., should be ultra-pure. 1% nitric acid is the preferred matrix. Appropriate blanks - reagent, procedural, field etc. - must also be included for analysis.

As mentioned above U-Pb dating is run semi-routinely, hence samples containing significant amounts of Hg cannot be analysed as there is a chance of contaminating the instrument.

To evaluate if it is possible to analyse your samples in our Q-ICPMS laboratory please contact Tom Andersen (tom.andersen@geo.uio.no) and Magnus Kristoffersen (magnus.kristoffersen@geo.uio.no) with (where appropriate) the following information:

- Type of original material – e.g. rock, mineral, water etc.
- Elements of interest
- Dissolution procedure

NB! The sample introduction system is made of quartz parts, hence HF containing solutions cannot be analysed. Any HF used during dissolution must be removed prior to analysis.

A booking to our lab provides access to the instrument, guidance in its usage and guidance in data interpretation. We do not, however, have the resources to produce the data for you. Bookings are made at the discretion of Tom Andersen and Magnus Kristoffersen.

The requirements stated herein are subject to change.

For bookings please contact Magnus Kristoffersen (magnus.kristoffersen@geo.uio.no).