

ICPMS Usage Estimator

-The instrument costs \$5/hr for internal users to operate. Each internal user must have a grant/fund to charge to before analysis can take place. External users should contact AMSEC for pricing and agreement or contract set up.

-Please use this guide to help you estimate costs for utilizing the AMSEC ICP-MS. All consumables (centrifuge tubes, microscope slides, acid, filters, polish, etc.) as well as primary standards (used for calibration curves) must be supplied by the user. External users will be charged back for said consumables.

Typical Liquid Analysis (recommended 2 – 5% acid, no more than 5% and no hydrofluoric acid)

-A typical liquid analysis takes 2 hours of startup time and tuning.

-Each sample and standard take ~5 minutes to run.

-A typical standard set includes a blank (just dilute acid used to make standards) and 6 – 9 standards. Make standards to include all possible concentrations of analyte. Recommended standard concentrations are 1, 0.50, 0.25, 0.10, 0.010, 0.0010, 0.00010, 0.000010, 0.0000010 ppm. Samples over 1ppm should be diluted. They will dirty up the system and you can get a trailing washout signal.

-Therefore, a set of 10 standards including the blank will take about an hour plus ~5 minutes for each sample.

Example: A set of ten standards and 50 samples typically takes 5 – 6 hours plus 2 hours of warmup and tuning.

Typical Laser Analysis

-Laser analyses can be quite variable due to the large number of ways that the laser can be employed for elemental analysis.

-Typical startup and tuning times range from 1 – 2 hours.

-A single spot/line analysis typically takes 2-10 minutes to complete. A two-minute washout between lines/spots is required. Depending on the number of replicates and number of unique spots to test, this can make a single sample take anywhere from 30 minutes to 2 hours.

-Usually laser ablation users should reserve the instrument for 4 – 8 hours.

Example: A laser user requiring 5 lines per sample of 3 minutes per line will take 30 – 45 minutes per sample. If they have 5 samples then the reservation will take 5 – 6 hours to complete.

Note: times may change with sample requirements. These guidelines are to help with planning and may not be correct for the user's intended purpose. Speak to the lab manager for more detailed/special use cases.