

## The measurement of boron isotope for geological standard materials by using MC-ICPMS

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Boron(B) isotope is widely used in reconstructing the pH value of paleocean and tracing the geological process in continental earth, such as subduction, silicate weathering process et al. High-precision of B isotope measurement is fundamental to resolve above issues, however, to date, the data of B isotope reported still exist a big difference between different labs, especially for silicate samples, which is likely resulted due to the contamination, or less B recovery during chemical column or B evaporation process. Here, we present a series of geological standard materials for B isotope measurement by MC-ICPMS.

The samples were dissolved by a mixed reagents of HF+H<sub>2</sub>O<sub>2</sub>+2% mannitol and B was purified by concentrated HF as eluent. After evaporated the above B solution to 0.1-0.2mL, then B contents were measured by ICPMS and B isotope were measured by MC-ICPMS after diluted the above B solution by Milli-Q water to appropriate concentrations. All the samples were replicated three times including chemical column and measurements of B contents and B isotope. The data show that most samples of them are uniform in B contents and B isotope compositions within analytical error. However for these samples evaporated to dryness, the significant B was lost and B isotopes were also changed and heavy <sup>11</sup>B was preferentially evaporated, resulting in the lighter B isotope composition in residue. In this experiment, some data of geological standard materials are consistent with data published previously, such as JB-2, JB-3, B-5 and B-8 et al, while there are also some samples show quite different data with previous data (Wei et al., 2013), such as BHVO-2, AGV-2 and W-2 et al. So it should be cautious to compare the data between different labs.

Reference:

G. Wei, J. Wei, Y. Liu, T. Ke, Z. Ren, J. Ma and Y. Xu, J. Anal. At. Spectrom., 2013, 28, 606-612.