Goldschmidt 2025 Abstract
https://doi.org/10.7185/gold2025.29004

Li and B Isotope Ratio of Seven Glass Reference Materials (OJY-1, OH-1, OA-1, CGSG-1, CGSG-2, CGSG-4 and CGSG-5): New Reference Materials for *in situ* δ^7Li and δ^{11}B Microanalysis

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Lithium and boron isotope geochemistry are widely applied to a variety of Earth Science disciplines. *In situ* micro analysis of Li and B isotope ratios requires matrix-matched reference materials for calibration, method validation and inter-laboratory data comparison. In this study, we characterized the Li and B isotope ratios (δ^7Li and δ^{11}B) of the seven glass reference materials OJY-1, OH-1, OA-1, CGSG-1, CGSG-2, CGSG-4 and CGSG-5. These seven materials exhibit relative homogenous δ^7Li and δ^{11}B values at the spatial resolution of 10-120 mm, as revealed by multiple spot analyses using LA-MC-ICP-MS (n = 80-100) and SIMS (n = 8-12) on different grains. The 2SD of δ^7Li and δ^{11}B in these materials as determined by LA-MC-ICP-MS and SIMS analysis range from 0.4 to 1.5 ‰. Recommended δ^7Li and δ^{11}B values were determined using solution MC-ICP-MS techniques, and data from independent laboratories showed high precision with discrepancies within ~1.50 ‰. The Li and B mass fractions of the various glasses differ, ranging from ~40 mg g^{-1} to 2000 mg g^{-1} and ~40 mg g^{-1} to 5000 mg g^{-1}, respectively. The various glasses also have different δ^7Li and δ^{11}B values. The δ^7Li and δ^{11}B values range from +0.99 to +5.69 ‰and -10.92 to +0.25 ‰, respectively. Notably, OA-1 and OH-1 are high-silica glasses (SiO_2 > 75 wt%) and may be beneficial for research in lithium and boron isotope geochemistry on highly evolved magmatic rocks. These investigated glasses have great potential as reference materials for the *in situ* microanalysis Li and B isotope ratios.