

**High-Precision Sr-Nd-Hf Isotopic Characterization
of Chinese Geological Standard Glasses (CGSG-1, 2,
4 and 5) Reference Materials by TIMS and MC-
ICP-MS**

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Reference glasses have always been played an important role in microanalysis, using techniques like EPMA, LA-ICP-MS, or SIMS. They are usually used as known or unknown samples for external calibration, method development, quality control and inter-laboratory comparison. For example, the NIST, the USGS and MPI-DING glasses have developed widespread application reference materials. As wide distribution and usage reference materials, not only major, trace elements, but also their isotopic characterizations are significant reference value for microanalysis. In contrast to widely distributed NIST, USGS and MPI-DING series glasses, there are plenty of various publications for their isotopic compositions. However, as secondary reference materials for geochemical work, there are only few isotope reported data for the CGSG glasses since [Hu et al. \(2011\)](#) firstly provided the first analytical data for the CGSG glasses using a variety of analytical techniques and calculated preliminary reference and information values. In order to promote quality assessment and application. In this contribution, in order to assess the homogeneity and give the reference values of CGSG-1, 2, 4 and 5, we firstly report the comprehensive high-precision Sr-Nd-Hf isotopic compositions of CGSG-1, 2, 4 and 5 reference materials based on duplicate measurement with different analytical sessions. The results were mainly obtained by high-precision bulk techniques, such as TIMS and MC-ICP-MS. Our investigation indicates that these standard reference glasses have homogenous Sr-Nd-Hf compositions, which are suitable geochemical certified materials for radiogenic Sr-Nd-Hf isotope measurements. Collectively, we present the first compilation of Sr-Nd-Hf isotope working values for these glasses. These new Sr-Nd-Hf isotope data form a comprehensive reference database that can be used by the geochemical community for evaluating the radiogenic isotope compositions for microanalytical and bulk analytical purposes.