

An inter-laboratory calibration of Si isotope reference materials

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Three Si isotope materials have been used for an interlaboratory calibration exercise to ensure reproducibility between international laboratories investigating natural Si isotope variations using a variety of chemical preparation methods and mass-spectrometric techniques. These proposed standard reference materials are (i) IRMM018, a SiO₂ standard, (ii) a fractionated SiO₂ material prepared at the University of California at Santa Barbara, and (iii) a natural diatomite sample (originally deposited as marine biogenic opal). The average $\delta^{29}\text{Si}$ values for Diatomite, IRMM018, and Big Batch are +0.65‰, -0.88‰ and -5.35‰, respectively. All laboratories reproduced these values to within ~0.1‰. A more detail investigation of these data will be presented and discussed in order to investigate any systematic offsets between measurements or sample heterogeneity.

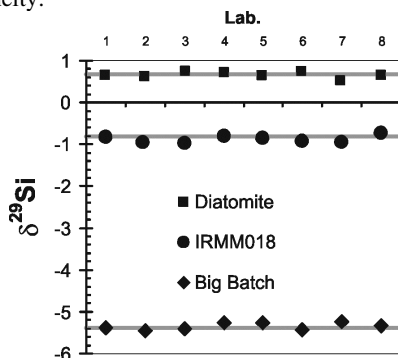


Fig. 1. Average measured Si isotope composition (in ‰ $\delta^{29}\text{Si}$) for each laboratory, relative to NBS28 (SRM-8546).