Geophysical Research Abstracts
Vol. 12, EGU2010-10449-1, 2010
EGU General Assembly 2010
© Author(s) 2010

Isotopic delta values of molybdenum reference solutions

Hanjie Wen (1), Jean Carignan (2), Christophe Cloquet (2), Xiangkun Zhu (3), and Yuxu Zhang (1)

(1) State Key Laboratory of Ore Deposit Geochemistry, Institute of Geochemistry, Chinese Academy of Sciences, Guiyang, 550002, China , (2) CNRS, CRPG, Vandoeuvre-les-Nancy, France (carignan@crpg.cnrs-nancy.fr; Cloquet@crpg.cnrs-nancy.fr), (3) Laboratory of Isotope Geology; Ministry of Land and Resources, Beijing, China. (xiangkun@cags.net.cn)

We report the isotopic composition of five molybdenum (Mo) standard reference solutions and four fractions from one of these solutions eluted through anion resin column relative to a sixth reference solution. Measurements were conducted using Isoprobe multi collector inductively coupled plasma mass spectrometer (MC-ICP-MS) at the Centre de Recherches Pétrographiques et Géochimiques (France) and Nu Plasma MC-ICP-MS at either the Ecole Normale Supérieure de Lyon (France) or the Laboratory of Isotope Geology in the Ministry of Land and Resources (China). The sample-standard bracketing method was employed to correct the mass bias for Mo isotopes during instrumental measurement. Except for the Merck Mo solution, all the Mo solutions were identical in isotopic composition within error. Although the JMC Mo solution has been used as the internal reference material by various groups, uncertainty may still occur with different lot numbers and availability might be limited. Here, we propose the NIST 3134 Mo solution as a new candidate for delta zero reference material, used for reporting Mo isotopic composition of natural samples. Isotopic compositions for four eluted fractions of the Sigma-Aldrich Mo solution range from 2.2 ‰ to –2.0 ‰ for δ97/95Mo relative to the NIST Mo standard. These values span the range of reported isotopic composition for natural terrestrial and experimental samples (approximately –0.5‰ to 1.6‰ for δ97/95Mo). We propose these eluted fractions to be used as secondary reference for Mo isotope measurements.