In situ, oxide interference corrected Rb-Sr data of meteorite samples using LA-MC-ICP-MS/MS

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The ^{87}Rb-^{87}Sr system is a versatile chronological tool and geochemical tracer. Unlike Rb-Sr measurements by thermal ionization mass spectrometry, *in situ* laser ablation (LA) mass spectrometry offers high sample throughput and minimizes sample destruction. This method, however, is compromised by the presence of multiple isobaric interferences on Sr isotopes. This problem can be overcome using multi-collector inductively-coupled-plasma mass spectrometers (MC-ICP-MS) equipped with the recently developed pre-cell mass filter and collision/reaction cell (CRC), such as the Thermo Scientific™ Neoma™ MS/MS-MC-ICP-MS. This instrument allows the simultaneous measurements of on-mass and mass-shifted Rb and Sr isotopes using SF_6 reaction-gas, to react Sr to SrF, which is instead analyzed. Here we show, however, that for Y- and Zr-bearing phases,YO and ZrO molecules form and interfere with SrF measurements, when O_2/H_2O enters the CRC either from impurities in the reaction gas or molecules that formed in the plasma. A correction for these effects is presented, together with *in situ* Rb-Sr data from meteoritic samples, measured using above method.