

Oxygen isotopic distributions in a Fluffy Type A CAI from Allende meteorite

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Textural relationships and chemical compositions in a Fluffy Type A CAI from Allende meteorite have been analyzed by SEM-EDS. For the precise measurements of O isotope ratios in the CAI, we have used a TiTech CAMECA ims-1270 SIMS. Textural relationships suggest that coarse-grained melilite and fassaite grains crystallized from melt. The O isotopic data scatter along the CCAM line with spinel ^{16}O -enriched of -40 permil and other minerals plotting near the ^{16}O -depleted end of the CCAM line. From these results, the coarse-grained melilite and fassaite grains crystallized from condensed melt directly from a solar nebula gas, or crystallized by remelting of the CAI precursors by reheating events. The melting events enhance the O isotopic exchange between the nebular gas and the melt.