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336 Relative Formation Probabilities for Fluoride and Oxyfluoride Anions Containing U, Np, Pu and Am in Accelerator Mass Spectrometry Measurements at VERA

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The relative formation probabilities for a range of (oxy-)fluoride molecular anions containing uranium, neptunium, plutonium, and americium during the sputtering process in a Middleton type AMS ion source from an iron oxide matrix mixed with PbF_2 have been investigated at VERA. Identifying this distribution is important for the separation of U and Np isobars via element selective photodetachment and reactive gases in the ILIAMS ion-cooler. A suitable choice of extracted molecules can suppress U in the beam by an order of magnitude compared to Np. Finally, the distribution can help identify isobaric contaminations in irradiated material produced during the development of an isotopic spike for ^{237}Np.

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