

¹⁰²Mo

¹⁰²Mo was discovered by Wiles and Coryell as described in the 1954 paper “Fission yield fine structure in the mass region 99-106” (1954Wi32). Thermalized neutrons from the Be(d,n) reaction produced with 15 MeV deuterons from the M.I.T. cyclotron irradiated uranium targets. Beta-decay curves were recorded following chemical separation. ¹⁰²Mo was also produced in photo-fission and deuteron induced fission of enriched U²³⁸. “Fission yields have been determined for 14.6-min Mo¹⁰¹ and 11.0-min Mo¹⁰² relative to 67-hr Mo⁹⁹, and for 67-hr Mo⁹⁹, 43-day Ru¹⁰³, 4.5-hr Rh¹⁰⁵, and 1.0-yr Ru¹⁰⁶, all relative to 12.8-day Ba¹⁴⁰.” Wiles and Coryell did not consider this the discovery of ¹⁰²Mo referring to a paper by themselves listed as ‘to be published’. Previously a half-life of 12 min was reported without a mass assignment (1941Ha16, 1941Ha07). Less than a month after the submission by Wiles and Coryell, Flegenhaimer and Seelmann-Eggebert assigned the 11.5(5) min half-life tentatively to ¹⁰²Mo (1954FI21).

Adapted from reference (2012Pa21)

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