

⁸⁴Br

In 1943, Born and Seelmann-Eggebert were the first to identify ⁸⁴Br in their paper “Über die Identifizierung einiger Uranspaltprodukte mit entsprechenden durch ($n\alpha$)- und (np)-Prozesse erhaltenen Isotopen” (1943Bo01). Rubidium and strontium salts were irradiated with neutrons from the high-voltage facility of the Kaiser Wilhelm Institut für Physik in Berlin, Germany and decay curves following chemical separation were measured. “Das 30-Min.-Brom aus Uran ist identisch mit einem aus Rubidium durch ($n\alpha$)-Prozeß erhaltenem Brom. Auf Grund dieser Ergebnisse können folgende Reihen aufgestellt werden: ⁸⁴Br (30 Min.) → ⁸⁴Kr stab., ⁸⁵Br (3 Min.) → ⁸⁵Kr (4,6 Std.) → ⁸⁵Rb stab., ⁸⁷Br (50 Sek.) → ⁸⁷Kr (75 Min.) → ⁸⁷Rb ($6,3 \cdot 10^{10}$ Jahre) → ⁸⁷Sr stab.” [The 30 min. bromine from uranium fission is identical to the bromine produced by the (n,α) process from rubidium. Based on these results we can determine the following decay sequences: ⁸⁴Br (30 min.) → ⁸⁴Kr stable, ⁸⁵Br (3 min.) → ⁸⁵Kr (4,6 h) → ⁸⁵Rb stable, ⁸⁷Br (50 s) → ⁸⁷Kr (75 min.) → ⁸⁷Rb ($6.3 \cdot 10^{10}$ y) → ⁸⁷Sr stable.] The half-life for ⁸⁴Br had been previously reported without mass assignments, 35 min. (1939Ha16), 40 min. (1939Do02), and 30(5) min. (1940St03).

Adapted from reference (2012Gr02)

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Please cite this abstract as: “FRIB Nuclear Data Group, *Discovery of Nuclides Project*, Isotope Database, doi:10.11578/frib/2279152”