

## <sup>86</sup>Br

Stehney and Steinberg discovered <sup>86</sup>Br in 1962 as reported in “Br<sup>86</sup>-A New Nuclide” (1962St13). Neutrons with a maximum energy of 25 MeV were produced by bombarding 21.5 MeV deuterons from the Argonne 60-in. cyclotron on a beryllium target. <sup>86</sup>Br was then produced in the (n,p) charge exchange reaction on an enriched <sup>86</sup>Kr target. The half-life was determined by  $\beta$ - and  $\gamma$ -ray spectroscopy following chemical separation. “The assignment of the 54-sec activity to Br<sup>86</sup> produced by the (n,p) reaction on Kr<sup>86</sup> is made on the basis of the following argument: (1) It cannot be Br<sup>87</sup>, since the formation of Br<sup>87</sup> by neutron bombardment of Kr would require double neutron capture. (2) It is a new nuclide, differing in half-life and decay energy from other bromine products of the neutron bombardment of krypton. (3) The  $Q_{\beta}$  observed is consistent with that expected for Br<sup>86</sup>. (4) It is probably not an isomer of Br<sup>85</sup> since isomerism in this region is very unlikely.”

Adapted from reference (2012Gr02)

- 1962St13    A. F. Stehney and E. P. Steinberg, Phys. Rev. **127**, 563 (1962).  
2012Gr02    J. L. Gross, J. Claes, J. Kathawa, and M. Thoennessen, At. Data Nucl. Data Tables **98**, 75 (2012).

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