

## <sup>81</sup>Kr

Reynolds reported the discovery of <sup>81</sup>Kr in “A New Long-Lived Krypton Activity” in 1950 at Argonne National Laboratory ([1950Re54](#)). The discovery was made by distilling krypton from a sample of sodium bromide, which had gone through prolonged exposure to intense neutron radiation. The isotope was first noticed due to an ion bump at mass 81 and, upon further inspection, was identified to be <sup>81</sup>Kr. “In addition, a small ion peak was observed at mass 81 which, after the usual tests common to mass spectrometric technique, proved to be due to Kr<sup>81</sup> and not due to an impurity element or to a rare krypton compound ion such as KrH<sup>+</sup>.” Reynolds concluded <sup>81</sup>Kr decays by way of K-capture with a half-life of  $2.1(5) \times 10^5$  y. The 13.1 s isomer had been observed by Creutz et al. in 1940; however, they could assign the observed 13(2) s activity only to either <sup>79</sup>Kr or <sup>81</sup>Kr ([1940Cr06](#)).

Adapted from reference ([2010He02](#))

- [1940Cr06](#) E. C. Creutz, L. A. Delsasso, R. B. Sutton, M. G. White, and W. H. Barkas, Phys. Rev. **58**, 481 (1940).  
[1950Re54](#) J. H. Reynolds, Phys. Rev. **79**, 886 (1950).  
[2010He02](#) M. Heim, A. Fritsch, A. Schuh, A. Shore, and M. Thoennessen, At. Data Nucl. Data Tables **96**, 333 (2010).

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