^{202}Fr

The first observation of ^{202}Fr was reported in "Alpha decay studies of new neutron-deficient francium isotopes and their daughters" by Ewan et al. in 1980 (1980Ew03). A uranium target was bombarded with 600 MeV protons from the CERN synchrocyclotron producing ^{202}Fr in spallation reactions. Alpha-particle spectra were measured with a silicon surface-barrier detector following mass separation with the isotope separator ISOLDE. "The singles alpha spectrum observed from the decay of a source collected at mass 202 is shown in the lower part of [the figure]. In addition to previously known lines, mainly coming from heavier francium isotopes in analogy with the A=201 spectrum, a strong alpha line with an energy of 7251$\pm$10 keV is present... The new line is assigned to ^{202}Fr, and the half-life was deduced to be 0.34$\pm$0.04 s." This half-life probably corresponds to the decay of the ground state as well as an isomeric state (1992Hu04).

Adapted from reference (2013Fr09)

1980Ew03 G. T. Ewan, E. Hagberg, B. Jonson, S. Mattsson, and P. Tidemand-Petersson, Z. Phys. A **296**, 223 (1980).

1992Hu04 M. Huyse, P. Decrock, P. Dendooven, G. Reusen *et al.*, Phys. Rev. C **46**, 1209 (1992).

2013Fr09 C. Fry and M. Thoennessen, At. Data Nucl. Data Tables **99**, 497 (2013).

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