^{19}Mg

^{19}Mg was observed by Mukha et al. in the 2007 paper "Observation of two-proton radioactivity of ^{19}Mg by tracking the decay products" (2007Mu15). A primary 591 MeV/nucleon ^{24}Mg from the GSI SIS facility was used to produce a secondary beam of ^{20}Mg. ^{19}Mg was then produced in a neutron removal reaction and decayed by the emission of two protons in flight. The lifetime was measured by reconstructing the vertex of the decay to ^{17}Ne and two protons. "For the first time, the trajectories of the 2p-decay products, ^{17}Ne+p+p, have been measured by using tracking microstrip detectors which allowed us to reconstruct the 2p-decay vertices and fragment correlations. The half-life of ^{19}Mg deduced from the measured vertex distribution is 4.0(15) ps in the system of ^{19}Mg. The Q value of the 2p decay of the ^{19}Mg ground state inferred from the measured p−p−^{17}Ne correlations is 0.75(5) MeV."

In 2003, Frank et al. determined an upper limit for the ^{19}Mg half-life of 22 ns (2003Fr31).

Adapted from reference (2012Th10)

2003Fr31 N. Frank, T. Baumann, D. Bazin, R. R. C. Clement *et al.*, Phys. Rev. C **68**, 054309 (2003).

2007Mu15 I. Mukha, K. Summerer, L. Acosta, M. A. G. Alvarez *et al.*, Phys. Rev. Lett. **99**, 182501 (2007).

2012Th10 M. Thoennessen, At. Data Nucl. Data Tables **98**, 933 (2012).

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