Adopted Levels

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen, Balraj Singh	NDS 164, 1 (2020)	15-Feb-2020

Q(β^-)=16060 *SY*; S(n)=2270 *SY*; S(p)=16180 *CA*; Q(α)=−11800 *CA* 2017Wa10,2019Mo01

Estimated uncertainties (2017Wa10): 500 for Q(β^-), 570 for S(n).

Q(β^-) and S(n) from 2017Wa10. S(p) and Q(α) from 2019Mo01 (theory).

Q(β^-n)=11100 *420*, S(2n)=6230 *500* (syst,2017Wa10). S(2p)=35530 (2019Mo01,theory). Evaluators deduce Q(β^-2n)=8690 *400*, Q(β^-3n)=3690 *400* from mass values in 2017Wa10.

2010Oh02: ^{98}Br nuclide identified in ^{9}Be(^{238}U,F) and Pb(^{238}U,F) reactions with a $^{238}U^{86+}$ beam energy of 345 MeV/nucleon produced by the cascade operation of the RBIF accelerator complex of the linear accelerator RILAC and four cyclotrons RRC, fRC, IRC and SRC. Identification of ^{98}Br nuclei was made on the basis of magnetic rigidity, time-of-flight and energy loss of the fragments using BigRIPS fragment separator. Experiments performed at RIKEN facility. Based on A/Q spectrum and Z versus A/Q plot, five counts in one setting and 6 counts in another were assigned to ^{98}Br isotope. See also 2010KuZV for production cross section values. (Q=charge state).

Theory references: consult the NSR database (www.nndc.bnl.gov/nsr/) for only one primary reference dealing with delayed-neutron emission probabilities.

Additional information 1.

^{98}Br Levels

E(level)	Comments
0	%β^-=100; %β^-n=?; %β^-2n=?; %β^-3n=? Only the β^- decay mode is expected, accompanied by delayed neutron decays. Theoretical $T_{1/2}$=26.0 ms, %β^-n=74, %β^-2n=17, %β^-3n=0.0 (2019Mo01). Theoretical $T_{1/2}$=17 ms, %β^-n=64.6, %β^-2n=1.5, %β^-3n=0.1 (2016Ma12). Theoretical %β^-n=48.3, %β^-2n=25.0 (2014Mi23). $T_{1/2}$: half-life of the ^{98}Br activity has not been measured. It is expected to be greater than the time-of-flight of 634 ns (value from priv. comm. with T. Kubo, July 14, 2010) through the beam transport system. From systematics of half-lives of neighboring Br isotopes, the half-life is expected to be <70 ms (70 ms for ^{94}Br, 102 ms for ^{93}Br and 314 ms for ^{92}Br), assuming a decreasing trend of half-life as neutron number increases in neutron-rich nuclei. 2017Au03 give 5 ms from some other systematics. Measured σ=10 pb (2010Oh02), systematic uncertainty≈50%. Probability of misidentification of ^{98}Br isotope<0.001% and <0.094% in two different settings (2010Oh02).