Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 107,2323 (2006)	15-Mar-2006

Q(β^-)=−2.68×10^3 *syst*; S(n)=7.54×10^3 *syst*; S(p)=3.62×10^3 *syst*; Q(α)=6.20×10^3 *syst* 2012Wa38
Note: Current evaluation has used the following Q record −2710 syst 7680 syst 3620 syst 6200 syst 2003Au03.
ΔQ(β^-)=220(syst), ΔS(n)=120(syst), ΔS(p)=60(syst), ΔQ(α)=30(syst) 2003Au03.
For calculation of mass excess by a semiempirical method, see 1988Po04.

Assignment: ^{237}Np(32-MeV ^{3}He,3n) chem, ms (1975Ah05)
^{237}Np(42-MeV a,4n) chem, ms (1975Ah05)
^{239}Pu(d,xn) chem (1952Hi63)

^{237}Am Levels

E(level)	J$^\pi$	T$_{1/2}$	Comments
0.0	5/2$^{(-)}$	73.6 min *8*	%α=0.025 *3*; %ε+%β^+=99.975 *3* (α)/(α+ε)=0.00025 *3* was deduced by measuring the α and γ spectra of the same sample (1975Ah05). Iγ(280.2γ)=0.473 *20* per ε decay was used. In 1952Hi63 an α/ε=9.1×10^{-6} *33* value was determined from ce- and α-counting rates, assuming that ^{239}Pu(d,3n) and ^{239}Pu(d,4n) reactions had equal yields at E(d)=30-50 MeV. J$^\pi$: log *ft* values of 6.8 and 6.9 for the ε decay to the 3/2$^+$ state at 155.45 keV and to the 7/2$^+$ state at 320.97 keV in ^{237}Pu, respectively, limit spin to 5/2. The possible ε decay to the 1/2$^+$ state at 145.544 keV implies J^π=5/2$^-$. Analogy with ^{241}Am suggests 5/2[523] orbital. T$_{1/2}$: Weighted average of 73.0 min *10* (1975Ah05) and 74.4 min *12* (1972PoZS). Other measurement: ≈80 min (1952Hi63).
24.0×10^2 *20*		5 ns *2*	%SF>0 Only SF decay reported. T$_{1/2}$: From 1970Po01. E(level): From 1971Br39, a value of E=2400 ±*200* was deduced from the fit to ^{238}Pu(p,2n) reaction excitation function reported in 1970Po01. In 1970Po01 a value of E=3000 ±*300* was deduced from the difference between the Q values for ^{238}Pu(p,2n) reaction for production of the isomeric and the ground states; E=2100 *200* was suggested in 1973Br38. E=2400 *200* keV was recommend in 1980Bj02. Assignment: ^{238}Pu(p,2n) excit (1970Po01); ^{237}Np(α,4n) excit (1973Fl03); systematics of fissioning isomers. See 1984Bl06 for calculated excitation function for (α,4n) reaction. For theoretical calculations of E(level), T$_{1/2}$(SF) and T$_{1/2}$(γ), see 1972We09. For calculations of fission barrier see 1984Ku05.