

**Adopted Levels, Gammas**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, E. Browne		NDS 109,2439 (2008)	31-Jul-2008

Q(β<sup>-</sup>)=-3.94×10<sup>3</sup> syst; S(n)=7.49×10<sup>3</sup> 6; S(p)=4955.6 24; Q(α)=6397.8 6 2012Wa38

Note: Current evaluation has used the following Q record \$ -3940 syst 7540 syst 4955.5 24 6397.8 6 2003Au03.

ΔQ(β<sup>-</sup>)=150, ΔS(n)=100 (syst,2003Au03).

[Additional information 1.](#)

2004Na01: Measured yields of fission fragments and deduced charge distribution.

<sup>240</sup>Cm Levels

Cross Reference (XREF) Flags

- A <sup>240</sup>Bk ε decay (4.8 min)
- B <sup>244</sup>Cf α decay (19.4 min)

E(level)	J <sup>π</sup>	T <sub>1/2</sub>	XREF	Comments
0	0 <sup>+</sup>	27 d 1	AB	%α>99.5; %ε<0.5; %SF=3.9×10 <sup>-6</sup> 8 %ε<0.5 since no <sup>240</sup> Am detected (1952Hi11). T <sub>1/2</sub> : average of 26.8 d (1949Se01) and 28 d (1967Ba42). T <sub>1/2</sub> (SF)=1.9×10 <sup>6</sup> y 4 (1952Gh27) and recommended by 2000Ho27.
38.5	(2 <sup>+</sup> )	132 ps 9	B	J <sup>π</sup> : systematics of even-even nuclides. T <sub>1/2</sub> : the value is as quoted by 2001Ra27 evaluation, based on recoil-distance method (1978UI01) in <sup>239</sup> Pu(α,3n) E=27, 33 MeV, where Q <sub>0</sub> =12.0 5 was deduced from measured percentage of highly charged <sup>240</sup> Cm recoil ions as a function of the distance between target and a carbon catcher foil. From Q <sub>0</sub> , 1978UI01 deduced half-lives of 154 ps for 2 <sup>+</sup> , 71 ps for 4 <sup>+</sup> and 41 ps for 6 <sup>+</sup> members of the ground-state band with an estimated feeding lifetime of 32 ps from higher members of the rotational band. The spectroscopic details of the work by 1978UI01 are not available.
≈2000		10 ps 3		%SF≤100
≈3000		55 ns 12		T <sub>1/2</sub> : fission isomer (1976SI01); tentative assignment in <sup>238</sup> Pu(α,2n). %SF≈100
				T <sub>1/2</sub> : fission isomer (1976SI01); tentative assignment in <sup>238</sup> Pu(α,2n). Others: 10 ns-100 ns (1978UI01), 1970Po01.

γ(<sup>240</sup>Cm)

E <sub>i</sub> (level)	J <sub>i</sub> <sup>π</sup>	E <sub>γ</sub>	E <sub>f</sub>	J <sub>f</sub> <sup>π</sup>	Mult.	α <sup>†</sup>	Comments
38	(2 <sup>+</sup> )	(38.5)	0	0 <sup>+</sup>	[E2]	2.4×10 <sup>3</sup> 14	α(L)=1.7×10 <sup>3</sup> 10; α(M)=4.9×10 <sup>2</sup> 28; α(N)=1.4×10 <sup>2</sup> 8; α(O)=33 19; α(P)=5 3; α(Q)=0.010 9 B(E2)(W.u.)=2.5×10 <sup>2</sup> 23

† Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.

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Legend

Level Scheme-----▶  $\gamma$  Decay (Uncertain)