^{248}Bk β^- decay (23.7 h) 1978Gr10

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. J. Martin	NDS 122, 377 (2014)	1-Sep-2014

Parent: ^{248}Bk: E=0.0+x; $J^\pi=1^{(-)}$; $T_{1/2}$=23.7 h *2*; Q(β^-)=860 *20*; %β^- decay=70 *5*

^{248}Bk-Q(β^-): Authors′ average of β^- end point measurements of 870 *20* to the g.s. and 257 *20* to the 592 level. 2012Wa38 quote a systematics value of 840 *70*.

^{248}Cf Levels

E(level)	J^π
0.0	0^+
41.53 *6*	2^+
592.2 *2*	$(2)^-$

β^- radiations

E(decay)	E(level)	Iβ^-[†][‡]	Log *ft*	Comments
257 *20*	592.2	5.0 *4*	6.85 *12*	av Eβ=73 *6* E(decay): obtained by 1978Gr10 from the Fermi-Kurie end point energy of the β-spectrum taken in coincidence with the 550.7γ.
818 *20*	41.53	20 *10*	7.83 *23*	av Eβ=252 *7* E(decay): from Q(β^-) and E(level).
870 *20*	0.0	45 *10*	7.55 *11*	av Eβ=267 *7* E(decay): measured by 1978Gr10 (the Fermi-Kurie endpoint energy of singles β spectrum).

[†] β intensity per 100 *23*.7-h ^{248}Bk decays, measured by 1978Gr10.

[‡] Absolute intensity per 100 decays.

$\gamma(^{248}Cf)$

Kα_1 x ray(Cf)/I(550γ)=0.0055 *8* (1978Gr10).

Eγ	Iγ[†]	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.	α[‡]	Comments
(41.53 *6*)		41.53	2^+	0.0	0^+			Transition was not observed, Eγ is from ^{252}Fm α decay.
550.7 *1*	7.1 *5*	592.2	$(2)^-$	41.53	2^+	E1	0.01365	α(K)=0.01086 *16*; α(L)=0.00209 *3*; α(M)=0.000508 *8* α(N)=0.0001398 *20*; α(O)=3.59×10^{-5} *5*; α(P)=6.70×10^{-6} *10*; α(Q)=3.47×10^{-7} *5* Iγ: Iγ per 100 b- decays from Iγ/Σ I(β^-) and also from Iγ/Iα(^{248}Bk). Mult.: α(K)exp=0.009 *2* deduced by 1978Gr10 from Cf K x ray/Iγ(550.7γ).

[†] For absolute intensity per 100 decays, multiply by 0.70 *5*.

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

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

Legend

γ Decay (Uncertain)