Adopted Levels, Gammas

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

Q(β^-)=−3061 *SY*; S(n)=6935 *16*; S(p)=5540 *8*; Q(α)=6361 *5* 2012Wa38
Q(β^-): The systematics uncertainty is 53.

^{248}Cf Levels

Cross Reference (XREF) Flags

- A ^{249}Cf(d,t)
- B ^{252}Fm α decay
- C ^{248}Bk β^- decay (23.7 h)
- D Cf(^{18}O,xnγ)

E(level)†	Jπ‡	$T_{1/2}$	XREF	Comments
0#	0^+	333.5 d *28*	ABCD	%α=99.9971 *3*; %SF=0.0029 *3* $T_{1/2}$,%SF: 1973Hu01 report $T_{1/2}$=333.5 d *28* and α/SF=3.5×10^4 *3*. These data give $T_{1/2}$(SF)=3.2×10^4 y *3* (recommended by 2000Ho27). Other $T_{1/2}$(SF): 4.1×10^4 y *4* (1968Sk01). $T_{1/2}$: from 1973Hu01.
41.53# *6*	2^+		ABCD	Jπ: HF=3.8 from 0^+ (^{252}Fm α decay).
137.81# *9*	4^+		AB D	
287.4# *1*	6^+		AB D	
488.0# *2*	8^+		A D	
592.2@ *2*	$(2)^-$		C	Jπ: E1 γ to 2^+. log *ft*=6.85 from $1^{(-)}$. No feeding to 0^+ or 4^+.
630@ *1*	3^-		A	
677@ *1*	4^-		A	
735@ *1*	5^-		A	
737.3# *5*	10^+		D	
779 *2*			A	
806@ *1*	6^-		A	
885@ *1*	7^-		A	
979@ *2*	8^-		A	
1021 *2*			A	
1048 *2*			A	
1079 *2*			A	
1112 *2*			A	
1179 *2*			A	
1261& *2*	8^-		A	
1293 *2*			A	
1319 *2*			A	
1351& *2*	9^-		A	
1391 *2*			A	
1432 *2*			A	
1463a *1*	5^-		A	
1477b *2*	2^-		A	
1509b *1*	3^-		A	
1530a *1*	6^-		A	
1557b *1*	4^-		A	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{248}Cf Levels (continued)

E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF
1577[c] *1*	7^-	A	1839[a] *3*	(9^-)	A	2161[g] *2*	(5^-)	A	2512[k] *1*	3^+	A
1605[a] *1*	7^-	A	1852[d] *1*	7^-	A	2184[h] *2*	6^-	A	2533 *1*		A
1621[b] *1*	5^-	A	1927[e] *1*	5^+	A	2207[f] *1*	6^+	A	2557[k] *1*	4^+	A
1640[d] *1*	4^-	A	1946[d] *3*	8^-	A	2241[i] *1*	7^+	A	2580 *1*		A
1663[c] *1*	8^-	A	1968 *1*		A	2262[h] *1*	(7^-)	A	2602[l] *1*	6^+	A
1686[b] *3*	6^-	A	1992[e] *1*	6^+	A	2281[j] *2*	2^+	A	2634[k] *2*	(5^+)	A
1698[d] *2*	5^-	A	2018 *3*		A	2314[j] *2*	3^+	A	2682[l] *2*	(7^+)	A
1731[a] *2*	8^-	A	2072[f] *1*	4^+	A	2368[j] *2*	(4^+)	A			
1766[d] *2*	6^-	A	2105[g] *1*	(4^-)	A	2463 *2*		A			
1781[c] *3*	9^-	A	2131[f] *1*	5^+	A	2492 *2*		A			

† Except where noted otherwise, the energies are from (d,t).
‡ Except where noted otherwise, the J^π assignments are from (d,t) based on band assignments which In turn are based on a comparison of experimental and calculated cross sections At 90, 120, and 135 degrees.
# $K^\pi=0^+$ g.s. band.
@ $K^\pi=2^-$ $9/2^-[734],5/2^+[622]\otimes$PHONON.
& $K^\pi=8^-$ $9/2^-[734],7/2^+[624]$.
[a] $K^\pi=5^-$ $9/2^-[734],1/2^+[631]$.
[b] $K^\pi=2^-$ $9/2^-[734],5/2^+[622]\otimes$PHONON.
[c] $K^\pi=7^-$ $9/2^-[734],5/2^+[622]$.
[d] $K^\pi=4^-$ $9/2^-[734],1/2^+[631]$.
[e] $K^\pi=5^+$ $9/2^-[734],1/2^-[501]$.
[f] $K^\pi=4^+$ $9/2^-[734],1/2^-[501]$.
[g] $K^\pi=3-?$ $9/2^-[734],3/2^+[631]$.
[h] $K^\pi=6^-$ $9/2^-[734],3/2^+[631]$.
[i] $K^\pi=7^+$ $9/2^-[734],5/2^-[503]$.
[j] $K^\pi=2^+$ $9/2^-[734],5/2^-[503]$.
[k] $K^\pi=3^+$ $9/2^-[734],3/2^-[501]$.
[l] $K^\pi=6^+$ $9/2^-[734],3/2^-[501]$.

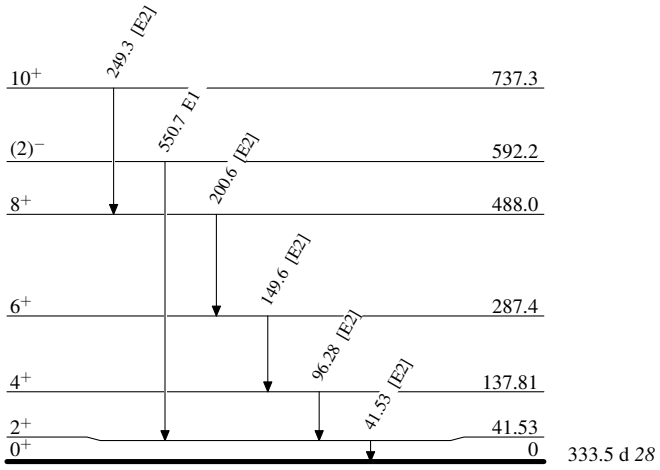
$\gamma(^{248}Cf)$

E_i(level)	J_i^π	E_γ	E_f	J_f^π	Mult.	α†	Comments
41.53	2^+	41.53 *6*	0	0^+	[E2]	1461 *23*	E_γ: from α decay.
137.81	4^+	96.28 *6*	41.53	2^+	[E2]	26.5 *4*	E_γ: from α decay.
287.4	6^+	149.6 *1*	137.81	4^+	[E2]	3.70 *6*	E_γ: from (^{18}O,xnγ).
488.0	8^+	200.6 *1*	287.4	6^+	[E2]	1.129 *16*	E_γ: from (^{18}O,xnγ).
592.2	$(2)^-$	550.7 *1*	41.53	2^+	E1	0.0136 *2*	E_γ,Mult.: from β^- decay.
737.3	10^+	249.3 *5*	488.0	8^+	[E2]	0.507 *8*	E_γ: from (^{18}O,xnγ).

† 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.

Adopted Levels, Gammas

Level Scheme



$^{248}_{98}Cf_{150}$