^{252}Cf SF decay   **2004Jo17**

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen[#]	NDS 147, 1 (2018)	30-Nov-2017

Parent: ^{252}Cf: E=0.0; J^{π}=0$^+$; $T_{1/2}$=2.645 y 8; %SF decay=0.0008 5

^{252}Cf-%SF decay: From %SF=3.092 8 for ^{252}Cf decay, and fission yield of 0.00026 17 for ^{164}Gd (from NuDaT 2.6 database).

2004Jo17 (also 2005Jo24, 2002Ha46): Measured Eγ, Iγ, $\gamma\gamma$ coin using Gammasphere array with 102 Ge detectors and 62 μCi source of ^{252}Cf.

^{164}Gd Levels

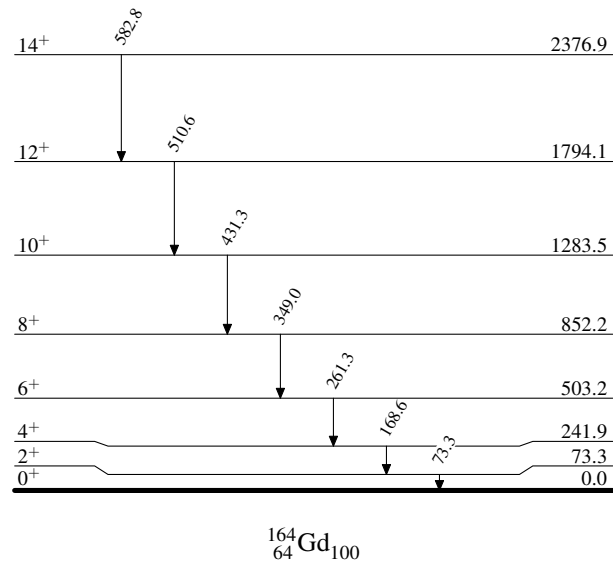| E(level)[†]	J^{π}[‡]
0.0[#]	0$^+$
73.3[#] 3	2$^+$
241.9[#] 4	4$^+$
503.2[#] 5	6$^+$
852.2[#] 6	8$^+$
1283.5[#] 7	10$^+$
1794.1[#] 7	12$^+$
2376.9[#] 8	14$^+$

[†] From Eγ data, assuming Δ(Eγ)=0.3 keV for each γ ray.

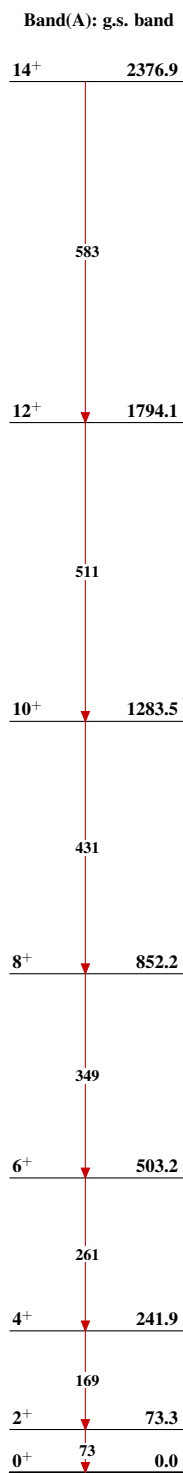[‡] As proposed by 2004Jo17 based on assignment to g.s. yrast band, but no supporting data are available.

[#] Band(A): g.s. band.

$\gamma(^{164}$Gd)

E$_\gamma$	E$_i$(level)	J^{π}_i	E$_f$	J^{π}_f
73.3	73.3	2$^+$	0.0	0$^+$
168.6	241.9	4$^+$	73.3	2$^+$
261.3	503.2	6$^+$	241.9	4$^+$
349.0	852.2	8$^+$	503.2	6$^+$
431.3	1283.5	10$^+$	852.2	8$^+$
510.6	1794.1	12$^+$	1283.5	10$^+$
582.8	2376.9	14$^+$	1794.1	12$^+$

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Level Scheme

14^+	582.8	2376.9
12^+	510.6	1794.1
10^+	431.3	1283.5
8^+	349.0	852.2
6^+	261.3	503.2
4^+	168.6	241.9
2^+	73.3	73.3
0^+		0.0

$^{164}_{64}\text{Gd}_{100}$

^{252}Cf SF decay   2004Jo17

Band(A): g.s. band

14$^+$		2376.9
	583	
12$^+$		1794.1
	511	
10$^+$		1283.5
	431	
8$^+$		852.2
	349	
6$^+$		503.2
	261	
4$^+$		241.9
	169	
2$^+$		73.3
0$^+$	73	0.0

$^{164}_{64}$Gd$_{100}$