

^{139}Gd ε decay (4.8 s):? [1999Xi04](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	P. K. Joshi, B. Singh, S. Singh, A. K. Jain		NDS 138, 1 (2016)	15-Oct-2016

Parent: ^{139}Gd : E=0+x; $T_{1/2}=4.8$ s 9; $Q(\varepsilon)=7770$ SY; % ε +% β^+ decay=100.0

^{139}Gd -E: Uncertain isomer.

^{139}Gd -Q(ε): 7770 200 (syst,[2012Wa38](#)).

The existence of this isomer is treated as uncertain by the evaluators.

Measured $\gamma\gamma(t)$, (x ray) $\gamma(t)$; He-jet; Ge(HP) detectors.

 ^{139}Eu Levels

E(level)	J^π [†]	$T_{1/2}$ [†]	E(level)	E(level)
0.0	(11/2) ⁻	17.9 s 6	468.4 5	675.1 4
121.60 20			507.8 4	690.5 5
148.3 3	(7/2 ⁺)	10 μ s 2	553.0 4	808.6 5
319.4 3			664.1 4	1025.4 5

[†] From the Adopted Levels.

 $\gamma(^{139}\text{Eu})$

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	$E_i(\text{level})$	E_f
26.7 2	148.3	(7/2 ⁺)	121.60		431.4 3	553.0	121.60
121.6 2	121.60		0.0	(11/2) ⁻	489.2 3	808.6	319.4
149.0 3	468.4		319.4		542.5 3	664.1	121.60
197.8 2	319.4		121.60		553.5 3	675.1	121.60
371.1 3	690.5		319.4		903.8 4	1025.4	121.60
386.2 3	507.8		121.60				

^{139}Gd ε decay (4.8 s):? 1999Xi04Decay Scheme