

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. Morse	NDS 189,111 (2023)	23-Sep-2022

Q(β^-)=-4981 *syst*; S(n)=6788 *syst*; S(p)=2839 *syst*; Q(α)=8752 4 [2021Wa16](#)
 $\Delta Q(\beta^-)$ =270, $\Delta S(n)$ =270, $\Delta S(p)$ =202 ([2021Wa16](#)).
 S(2n)=15080 SY 333, S(2p)=5248 SY 181, Q(ϵp)=1488 SY 181 ([2021Wa16](#)).
 α : [Additional information 1](#).

²⁵¹No Levels

Cross Reference (XREF) Flags

- A ²⁵⁵Rf α decay
- B ²⁰⁶Pb(⁴⁸Ca,3n)

E(level)	J π	T _{1/2}	XREF	Comments
0 [†]	(7/2 ⁺)	0.80 s 1	AB	% α =91 +9-22; %SF=0.0014 +31-12; % ϵ +% β^+ >0 configuration=7/2 ⁺ [624] (2006He27) T _{1/2} : From 2006He27 . Others: 0.8 s 3 (1967Gh01), 1.0 s 3 (1997He29), 0.76 s 3 (2001He35), 0.78 s 2 (2004He28), 0.78 s +38-22 (2009Fo02). %SF: Estimated by 2006He27 from detection of one fission event following α decay of ²⁵⁵ Rf. % α : From 2001He35 . % ϵ + β^+ : One electron capture event has been observed (2009Fo02). J π : Based on favored α decay to (7/2 ⁻) state in ²⁴⁷ Fm (2006He27).
(60.3 [†] 3) 106 6	(9/2 ⁺) (1/2 ⁺)	1.00 s 4	AB B	J π : Band member. % α \approx 100 configuration=1/2 ⁺ [631] (2006He27) % α : Based on non-observation of γ rays from this state. E(level): From difference of Q(α) values from decay from this state and the ground state into ²⁴⁷ Fm. J: Based on favored α decay to (1/2 ⁻) state in ²⁴⁷ Fm. T _{1/2} : Weighted average 0.93 s 6 (2004He28) and 1.02 s 3 (2006He27).
203.6 2	(9/2 ⁻)		AB	configuration=9/2 ⁻ [734] (2006He27) J π : Based on favored α decay from ²⁵⁵ Rf (9/2 ⁻) ground state.
917.2? 5	(7/2 ⁺)		B	configuration=7/2 ⁺ [613] (2006He27) J π : Suggested in 2006He27 based on systematics in nearby nuclei. E(level): Two γ rays with energy 782.5 and 713.6 keV were observed in 2006He27 , but the ordering could not be established. If the ordering is reversed, the excitation energy is 986.1 6.
\geq 1699.2?		\approx 2 μ s	B	E(level): 2006He27 indicate that the 203.6, 713.6, and 782.5-keV transitions are in cascade, but it is not certain that there are no other unobserved transitions in the sequence, hence the lower limit on the level energy. T _{1/2} : From 2006He27 .

[†] Band(A): 7/2⁺[624].

Adopted Levels, Gammas (continued)

$\gamma(^{251}\text{No})$								
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α	Comments
(60.3)	(9/2 ⁺)	(60.3 3)	100	0	(7/2 ⁺)			E_γ : From difference of parallel γ -rays depopulating excited state in ^{255}Rf α decay.
203.6	(9/2 ⁻)	143.3 2	100 12	60.3?	(9/2 ⁺)	E1	0.0669	$\alpha(\text{L})=0.0499$ 8; $\alpha(\text{M})=0.01248$ 18; $\alpha(\text{N})=0.00348$ 5; $\alpha(\text{O})=0.000905$ 13; $\alpha(\text{P})=0.0001546$ 23
		203.6 2	96 12	0	(7/2 ⁺)	E1	0.1143	$\alpha(\text{Q})=5.14 \times 10^{-6}$ 8
917.2?	(7/2 ⁺)	713.6 [†] 5	100	203.6	(9/2 ⁻)			$\alpha(\text{K})=0.0857$ 13; $\alpha(\text{L})=0.0213$ 3; $\alpha(\text{M})=0.00530$ 8; $\alpha(\text{N})=0.001482$ 21; $\alpha(\text{O})=0.000388$ 6
								$\alpha(\text{P})=6.84 \times 10^{-5}$ 10; $\alpha(\text{Q})=2.52 \times 10^{-6}$ 4

[†] Placement of transition in the level scheme is uncertain.

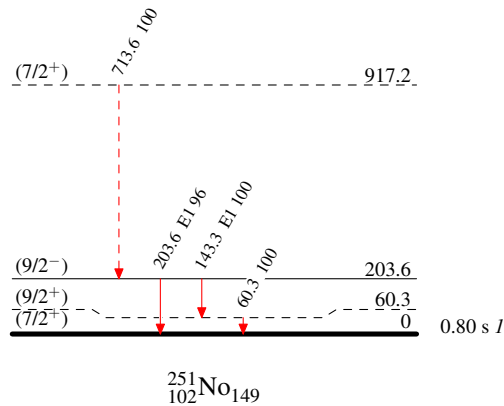
Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

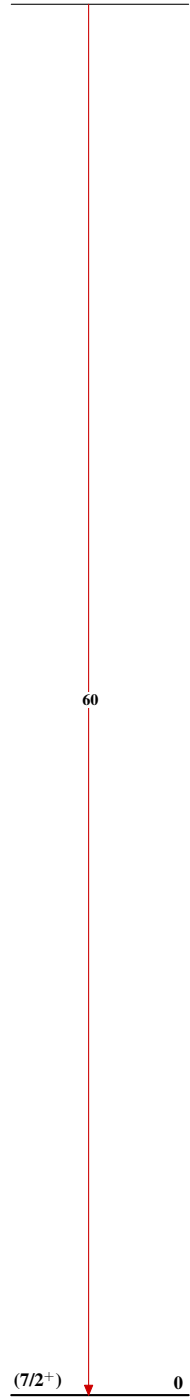
Legend

- ▶ $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- ▶ $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- ▶ $I_\gamma > 10\% \times I_\gamma^{\text{max}}$
- - - -▶ γ Decay (Uncertain)



Adopted Levels, GammasBand(A): $7/2^+$ [624]

<u>$(9/2^+)$</u>	<u>60.3</u>
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 $^{251}_{102}\text{No}_{149}$