

²⁵¹No α decay (1.02 s) [2006He27,2004He28](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 125, 395 (2015)	31-Mar-2014

Parent: ²⁵¹No: E=106 6; J ^{π} =(1/2⁺); T_{1/2}=1.02 s 3; Q(α)=8752 16; % α decay=100.0

²⁵¹No-E: Based upon difference in measured Q(α) values for decays to the 1/2⁺ isomer state in ²⁴⁷Fm from the ground and 1/2⁺ isomer state in ²⁵¹No ([2006He27](#)). Other: \approx 87 keV ([2004He28](#)).

²⁵¹No-J ^{π} : From Adopted Levels in ²⁵¹No ([2013Br09](#)).

²⁵¹No-T_{1/2}: From [2006He27](#). Other: 0.93 s 6 ([2004He28](#)).

²⁵¹No-Q(α): From [2012Wa38](#). Others: 8751 16 from E α =8612 16 ([2006He27](#)).

²⁵¹No-Proposed configuration=1/2[631] ([2006He27,2004He28](#)).

²⁵¹No-% α decay: Assumed % α =100; no γ -rays observed by [2006He27](#).

[2006He27](#): ²⁵¹No produced by the ²⁰⁶Pb(⁴⁸Ca,3n) reaction at E=4.80 MeV/nucleon ⁴⁸ beam at UNILAC accelerator at GSI, and from α decay of ²⁵⁵Rf. Reaction products were separated from the primary beam by the SHIP velocity filter and implanted into a position-sensitive 16-strip PIPS detector.

Measured E γ , I γ , $\gamma\gamma$, α - γ coin, ce, and lifetimes with a clover detector.

[2004He28](#): ²⁵¹No was produced via ²⁰⁶Pb(⁴⁸Ca,3n) reaction at E_{lab}=230.5 MeV ⁴⁸Ca beam at UNILAC accelerator at GSI.

Reaction products were separated from the primary beam by the SHIP velocity filter and implanted into a position-sensitive 16-strip PIPS detector for α measurement.

Measured E γ , I γ , $\gamma\gamma$, α - γ coin, ce, and lifetimes with a clover detector.

²⁴⁷Fm Levels

E(level)	J ^{π}	T _{1/2}	Comments
0.0	(7/2 ⁺)	31 s 1	% α =64 (2006He27) T _{1/2} : From 2006He27 . Other: 29 s 1 (2004He28). Proposed configuration=7/2[624] (2006He27,2004He28).
45 7	(1/2 ⁺)	5.1 s 2	%IT=12 2 (2006He27) E(level): From 2006He27 based on the mean value derived from the α energy in the α K x-ray measurement and the difference in measured Q(α) values for decays from g.s. to g.s and g.s to isomeric states. T _{1/2} : From 2006He27 . Other: 4.3 s 4 (2004He28). Proposed configuration=1/2[631] (2006He27,2004He28).

α radiations

E α [†]	E(level)	I α [#]	HF [‡]	Comments
8625 18		\approx 2	\approx 74	E α : Tentatively assigned to the decay of the 1/2 ⁺ state in ²⁵¹ No as its energy is higher than the g.s. to g.s. α decay from ²⁵¹ No to ²⁴⁷ Fm. Statistical uncertainty=10 keV.
8668 16	45	\approx 98	\approx 1.1	E α : Statistical uncertainty=4 keV. E α =8665 8 (2004He28).

[†] Three types of uncertainties are combined in quadrature: statistical uncertainty of 4-8 keV; systematic uncertainty of 15 keV from calibration methods/standards; uncertainty of 3 keV due to reproducibility of an α peak energy.

[‡] r₀(²⁴⁷Fm)=1.4708 58, unweighted average of r₀(²⁴⁶Fm)=1.465 7 and r₀(²⁴⁸Fm)=1.4765 19 [1998Ak04](#) is used in calculations for hindrance factors.

[#] Absolute intensity per 100 decays.