

Adopted Levels

Type	History		Literature Cutoff Date
	Author	Citation	
Full Evaluation	Jean Blachot	ENSDF	1-Mar-2009

S(n)=1.40×10⁴ syst; S(p)=-820 3; Q(α)=2.8×10³ syst [2012Wa38](#)

Note: Current evaluation has used the following Q record -803 112844.0 syst [2009AuZZ](#).

ΔQ(α)=405 ([2009AuZZ](#)).

This data set adopted from Proton Radioactivity in Z>50 Nuclides, A.A. Sonzogni, Nuclear Data Sheets 95, 1 (2002).

Experimental works:

[2001So02](#): ⁶⁴Zn(⁵⁸Ni,p4n) E=310 MeV, recoil mass separator (Legnaro) with PPAC/DDSD detectors at focal plane.

[2001Ma69](#): ⁶⁴Zn(⁵⁸Ni,p4n) E=295-310 MeV, recoil mass separator (FMA) with PPAC/DDSD detectors at focal plane.

Ground-state deformation: from the analysis of the proton radioactivity data, β≈0.3 was deduced ([2001So02,2001Ma69](#)).

Theoretical works:

[2001Go20](#): β₂=0.31, β₄=0.02, S(p)=-0.5 MeV.

[1997Mo25](#): S(p)=-0.50 MeV, S(2p)=1.69 MeV, Q(α)=2.14 MeV, T_{1/2}(β)=0.3883 s, T_{1/2}(α)=5.385×10⁶ y.

[1995Mo29](#): β₂=0.290, β₄=0.100, β₆=-0.002.

[1995Ab38](#): β₂=0.31, β₄=0.08, S(p)=-0.5 MeV.

[1976Li30](#): S(p)=-1.01 MeV, Q(α)=2.68 MeV.

¹¹⁷La Levels

E(level)	J ^π	T _{1/2}	Comments
0.0	(3/2 ⁺ ,3/2 ⁻)	23.5 ms 26	<p>%p=93.9 7; %ε+%β⁺=6.1 7</p> <p>%ε+%β⁺ from measured T_{1/2} and assuming T_{1/2}(ε+β⁺)=388.3 ms (1997Mo25).</p> <p>J^π: 2001So02: J^π=3/2⁺, 2001Ma69: J^π=3/2⁺ or 3/2⁻. 2000Bb02 could not determine any orbital that would account for the experimental values.</p> <p>T_{1/2}: weighted average of 22 ms 5 (2001So02) and 24 ms 3 (2001Ma69).</p> <p>E(p)=806 keV 5, Q(p)=823 keV 5 from 2001Ma69. Other: E(p)=783 keV 6, Q(p)=800 keV 6, (2001So02). The data from 2001Ma69 is adopted here simply because the proton energy spectrum has significantly less background than that from 2001So02.</p> <p>B(p)=0.939 7, T_{1/2}(p)=25.0 ms 28.</p> <p>σ≈200 nb (2001So02) and σ≈240 nb (2001Ma69).</p>
151? 12	(9/2 ⁺)	10 ms 5	<p>%p=97.4 13; %ε+%β⁺=2.6 13</p> <p>Level observed only by 2001So02. It should have been seen by 2001Ma69, but was not.</p> <p>%ε+%β⁺ from measured T_{1/2} and assuming T_{1/2}(ε+β⁺)=388.3 ms (1997Mo25).</p> <p>E(level): from Q(p) difference (2001So02).</p> <p>E(p)=933 keV 10, Q(p)=951 keV 10, B(p)=0.974 13, T_{1/2}(p)=10 ms 5 (2001So02).</p> <p>σ≈70 nb (2001So02).</p>