Adopted Levels, Gammas   1988Aj01,2002Ti10

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Hu, Tilley, Kelley, Godwin et al.	NP A708, 3 (2002)	23-Aug-2001

$Q(\beta^{-}) = -861.89$ *8*; $S(n) = 7251$; $S(p) = 9973.96$ *5*; $Q(\alpha) = -2468$ 2012Wa38
Note: Current evaluation has used the following Q record.
$Q(\beta^{-}) = -861.8$ *7*; $S(n) = 7249.9$ *7*; $S(p) = 9975.4$ *11*; $Q(\alpha) = -2467.0$ *5*   1995Au04
See 1984Aj01 for ^{6}Li+n resonance parameters.

^{7}Li Levels

Cross Reference (XREF) Flags

A	^{7}Be ε decay	K	^{7}Li(n,n)	U	^{10}B(n,α)
B	^{3}H(α,n)	L	^{7}Li(p,p)	V	^{11}B(α,^{8}Be)
C	^{3}H(α,α)	M	^{7}Li(^{3}He,^{3}He),(^{3}He,pd)	W	^{14}N(n,2α)
D	^{4}He(^{3}He,π^{+})	N	^{7}Li(α,α),(α,α')	X	^{6}Li(n,γ) E=thermal
E	^{6}Li(n,n)	O	^{7}Li(α,2α)	Y	^{7}Li(γ,γ')
F	^{6}Li(p,π^{+})	P	^{7}Li(^{12}C,^{12}C)	Z	^{7}Be(n,p)
G	^{6}Li(d,p)	Q	^{9}Be(π^{-},2n)	Others:	
H	^{7}Li(γ,n),(γ,2n)	R	^{9}Be(p,^{3}He),(p,pd)	AA	^{11}Be $\beta^{-}\alpha$ decay
I	^{7}Li(e,e'),(e,ep)	S	^{9}Be(d,α)		
J	^{7}Li(π^{+},$\pi^{+'}$),(π^{-},$\pi^{-'}$)	T	^{9}Be(d,tα)		

E(level)	J$^{\pi}$	T$_{1/2}$	XREF	Comments
0.0	3/2^{-}	stable	AB D FGHIJKLMN PQRS UVWXYZ	XREF: Others: AA T=1/2; μ=+3.2564268 *17* (1996FiZY); Q=−0.0406 *8*

477.612 *3*	1/2^{-}	73 fs *2*	A D FG IJKLMN PQRS UVWXYZ	XREF: Others: AA
				T=1/2; B(E2)↑=8.3×10^{-4} *5*
				T$_{1/2}$: see table 7.2: energy levels of ^{7}Li
				  (1979Aj01), and table 7.5: levels of ^{7}Li
				  from ^{7}Li(e,e') (1988Aj01) and the
				  reaction: ^{9}Be(d,α), (d,2α).

4630 *9*	7/2^{-}	93 keV *8*	CD FG IJKLMNOP RSTUVW	%^{3}H=?; %α=?
				T=1/2
				a R-matrix fit to ^{6}Li(n,n),(n,t),
				  ^{4}He(t,n),(t,t) data indicates E$_{x}$=4652
				  +/-≈5% and Γ = 69 keV (2002Ti10).

6680 *50*	5/2^{-}	0.88 MeV *+20−10*	C FG IJK NO T VW	%^{3}H=?; %α=?
				T=1/2
				a R-matrix fit to ^{6}Li(n,n),(n,t),
				  ^{4}He(t,n),(t,t) data indicates E$_{x}$= 6604
				  +/-≈5% and Γ = 918 keV (2002Ti10).

7459.5 *10*	5/2^{-}	89 keV *7*	BC EFGHIJKL NO QRST V	%n=?; %^{3}H=?; %α=?
				T=1/2
				a R-matrix fit to ^{6}Li(n,n),(n,t),
				  ^{4}He(t,n),(t,t) data indicates E$_{x}$= 7454
				  +/-≈5% and Γ = 80 (2002Ti10).

9.67×10^{3} *10*	7/2^{-}	≈400 keV	BC G J L N T	%n=?; %^{3}H=?; %α=?
				T=1/2
				a R-matrix fit to ^{6}Li(n,n),(n,t),
				  ^{4}He(t,n),(t,t) data indicates E$_{x}$= 9.57×10^{3}
				  +/-≈5% and Γ = 437 (2002Ti10).

Adopted Levels, Gammas   1988Aj01,2002Ti10 (continued)

^{7}Li Levels (continued)

E(level)	J^{π}	$T_{1/2}$	XREF			Comments
9850	$3/2^-$	$\approx$1200 keV	E		Q	%n=?; %α=? T=1/2 a R-matrix fit to ^{6}Li(n,n),(n,t), ^{4}He(t,n),(t,t) data indicates E_x=8750 +/-$\approx$5% and Γ = 4712 keV (2002Ti10). In addition, this R-matrix fit suggests a level at E_x=9.09 MeV with J^{π}=1/2$^-$, T=1/2 and Γ=2752 keV.
11240 30	$3/2^-$	260 keV 35	E	I	R	%n=?; %p=? T=3/2
13700		$\approx$500 keV	H			%n=?
14700		$\approx$700 keV	H			%n=? E(level): see also reactions: ^{6}Li(n,n); ^{6}Li(n,α); ^{7}Li(γ,n), (γ,2n), (γ,p), (γ,pn), (γ,d), (γ,t); ^{7}Li(^{3}He,^{3}He), (^{3}He,pd); and ^{9}Be(n,t) for additional states.

γ(^{7}Li)

E_i(level)	J_i^{π}	$E_{\gamma}^{\dagger}$	E_f	J_f^{π}	Mult.	Comments
477.612	$1/2^-$	477.595	0.0	$3/2^-$	M1(+E2)	Γ_{γ}=6.30$\times 10^{-3}$ eV 31; B(M1)(W.u.)=2.75 14; B(E2)(W.u.)=19.7 12
4630	$7/2^-$	4628	0.0	$3/2^-$	E2	Γ_{γ}=6$\times 10^{-3}$ eV; B(E2)(W.u.)=4.3

† From E(level) difference; recoil correction applied.

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Level Scheme

$_{3}^{7}$Li$_{4}$