^{7}Li(^{3}He,p),(^{3}He,pγ) 2004Ti06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, C. G. Sheu, J. L. Godwin, et al.	NP A745 155 (2004)	31-Mar-2004

1965Gr08: ^{7}Li(^{3}He,pγ) E=4.6-10 MeV, measured σ(E,E$_\gamma$). ^{7}Li(^{3}He,pγ) E=7.5 MeV, measured σ(E$_\gamma$,θ). ^{9}Be deduced levels, Γ.
1965Ly01: ^{7}Li(^{3}He,p) E=6.5-10 MeV, measured σ(E,E$_P$,θ),Q. ^{9}Be deduced level, Γ.
1968Co07: ^{7}Li(^{3}He,p) E=0.9-12 MeV, measured σ(E$_P$,θ). ^{9}Be deduced levels, Γ.
1968Kr02: ^{7}Li(^{3}He,p) E=1.25 MeV, measured σ(E$_P$,θ). ^{9}Be deduced levels, Γ.
1969Sa04: ^{7}Li(^{3}He,p) E=1.8-3.2 MeV, measured σ(E), σ(E$_P$,θ). ^{9}Be deduced levels, J, π.
1970Di12: ^{7}Li(^{3}He,p) E=10 MeV, measured σ(E$_P$,θ).
1971Ad01: ^{7}Li(^{3}He,pγ) E=10 MeV, measured σ(E$_P$,E$_\gamma$,θ(P)). ^{9}Be levels deduced Γ, γ-branching.
1971St35: ^{7}Li(^{3}He,p) E=600-1250 keV, measured σ(E,θ).
1972Li31: ^{7}Li(^{3}He,p) E=2.2-3.2 MeV, measured σ(θ). ^{9}Be levels deduced J, π.
1975Bo55: ^{7}Li(^{3}He,p) E=1.0-2.5 MeV, measured σ(E,E$_P$,θ).
1975St16: ^{7}Li(^{3}He,p) E=3.2, 4.5, 10 MeV, analyzed data. Deduced reaction mechanism.
1976Ir02: ^{7}Li(^{3}He,p) E=14 MeV, measured σ(θ), proton polarization.
1976Mc10: ^{7}Li(^{3}He,p) E=8.25, 11 MeV, measured np-coin. ^{9}Be deduced Γ_n/Γ.
1978Di08: ^{7}Li(^{3}He,pγ) E=7.5 MeV, measured pγ-coin. ^{9}Be levels deduced γ-branching, Γ.
1981Sl03: ^{7}Li(^{3}He,p) E=14 MeV, measured P(θ). Deduced time-reversal invariance.
1983Le17: ^{7}Li(pol. ^{3}He,P) E=14, 33 MeV, measured σ(θ), A(θ).
1983Ri01: ^{7}Li(^{3}He,p) E=14 MeV, measured polarization.
1983Ro22: ^{7}Li(pol. ^{3}He,P) E=14 MeV, measured analyzing power vs θ. Deduced reaction mechanism, time reversal invariance validity.
1984Me11: ^{7}Li(^{3}He,p) E=14 MeV, measured proton polarization. Deduced polarization, analyzing power equality, No evidence for time reversal invariance violation.
1984Tr03: ^{7}Li(^{3}He,p) E=13.5 MeV, measured proton polarization vs θ. Deduced No evidence for time reversal invariance violation.
1986Ab10: ^{7}Li(^{3}He,p) E=5-13 MeV, analyzed σ(E).
1990Ra16: ^{7}Li(^{3}He,p) E(C.M.)=0.5-2 MeV, measured σ(E$_P$,θ). Deduced astrophysical S-factor, other quantities.
1995Ba24: ^{7}Li(pol. ^{3}He,P) E=4.6 MeV, measured σ(θ), analyzing power vs θ. DWBA analysis.
2002Ya06: ^{7}Li(^{3}He,p) E=160, 170 keV, measured E$_P$. Deduced astrophysical S-factors. ^{7}Li(^{3}He,p) E(C.M.)≈0.1-7 MeV, analyzed data. Deduced astrophysical reaction rates.

^{9}Be Levels

E(level)	$T_{1/2}$	Comments
0.0		
1.83×10^{3} *3*		E(level): measurements indicate 1.80 MeV *10* (see 1966La04), 1.83 MeV *4* (1958Mo99), 1.70 MeV *30* (1963Ca02, and private communications to 1966La04). Γ: measurements indicate Γ<400 keV (see 1966La04), 340 keV (1963Ca02, and private communications to 1966La04).
2429.2 *17*	<8 keV	E(level): Γ: from (1968Kr02). Also see (1966La04) where E$_x$=2.39 MeV *8* and Γ<200 keV are reported. (1963Ca02, and private communications to 1966La04) reported E$_x$=2430 keV *9*. (a private communication to 1966La04) reported E$_x$=2428 keV *6* and Γ<35 keV. (1968Co07) reported E$_x$=2429 keV *12* and Γ<35 keV.
2.90×10^{3} *25*	1.00 MeV *25*	E(level): Γ: from (1971Ad01).
3076. *15*	289 keV *22*	E(level): from E=3031 keV *10* (1968Co07) and E=3076 keV *15* (1968Kr02). Also see (1966La04) who reported E$_x$=3.06 MeV *8* and Γ<300 keV. (1958Mo99) who reported 3.10 MeV *4*, (1963Ca02, and private communications to 1966La04) who reported E$_x$=3.01 MeV *9* and Γ=190 keV and (a private communication to 1966La04) reported E$_x$=3.03 MeV *2* and Γ=270 keV *30*. Γ: from Γ=274 keV *15* (1968Co07) and Γ=289 keV *22* (1968Kr02).
4704. *25*	743 keV *55*	E(level): from E=4.57 MeV *10* (1968Co07) and E=4704 keV *25* (1968Kr02). Γ: from Γ=0.80 MeV *20* (1968Co07) and Γ=743 keV *55* (1968Kr02). also see (a private communication to 1966La04) which reports E$_x$=4.51 MeV *10* and Γ=0.73

Continued on next page (footnotes at end of table)

^{7}Li(^{3}He,p),(^{3}He,pγ) 2004Ti06 (continued)

^{9}Be Levels (continued)

E(level)	$T_{1/2}$	Comments
		MeV *15*.
6.7×10^{3} *1*	2.0 MeV *2*	E(level): Γ: from (1968Co07). also see (a private communication to 1966La04) which reports E_x=6.67 MeV *10* and Γ=1.4 MeV *2*.
9.1×10^{3}? *2*	1200 keV	E(level): Γ: from (see 1966La04).
11.29×10^{3} *3*	620 keV *70*	E(level): Γ: from (1968Co07). also see (a private communication to 1966La04) which reports E_x=11.29 MeV *5* and Γ=0.64 MeV *7*.
11.81×10^{3} *2*	400 keV *30*	E(level): Γ: from (1968Co07). also see (a private communication to 1966La04) which reports E_x=11.82 MeV *2* and Γ=0.41 MeV *3*.
13.78×10^{3} *3*	590 keV *60*	E(level): Γ: from (1968Co07).
14396. *5*	0.365 keV *29*	E(level): from (1971Ad01). also see (a private communication to 1966La04) which reports E_x=14392 keV *5* and Γ=0.8 MeV. Γ: deduced from the values $\Gamma_{\gamma0}$=6.6 eV *4* (see discussion In ^{9}Be(γ,γ) and $\Gamma_{\gamma0}/\Gamma$=0.0181 *9* (1978Di08)). erroneous values are given In (1966La04) indicating $\Gamma_{\gamma0}/\Gamma_p$=0.023 *5*, $\Gamma_{\gamma1}/\Gamma_p$=0.04 *1*. The state is below the proton emission threshold. (1976Mc10) measured the branching ratios $\Gamma_{n\ 0}/\Gamma$=0.028 *21* and $\Gamma_{n\ 1}/\Gamma$=0.50 *11*; these can Be used with Γ=365 eV *29* to deduce Γ_n=192 eV *43*. Γα: using Γ_γ=16.1 eV *14* and Γ_n=192 eV *43* we can deduce Γα=156 eV *43*.
16671. *8*	41 keV *4*	E(level): Γ: from (1968Co07). also see (a private communication to 1966La04) which reports E_x=16674 MeV *8* and Γ=42 keV *5*.

γ(^{9}Be)

E_γ †	I_γ	E_i(level)	E_f	Mult.	Comments
9683 *25*	11.2 *24*	14396.	4704.	E1	Γ_γ=0.84 eV *19*; B(E1)(W.u.)=3.1×10^{-3} *7* γ-ray branching ratios from (1978Di08).
11336 *9*	16.1 *34*	14396.	3076.	E1	Γ_γ=1.20 eV *27*; B(E1)(W.u.)=2.8×10^{-3} *6*
11954.3 *22*	100 *5*	14396.	2429.2	M1	Γ_γ=7.48 eV *7*; B(M1)(W.u.)=0.208 *20*
14380.0 *18*	88.3 *44*	14396.	0.0	M1	Γ_γ=6.6 eV *4*; B(M1)(W.u.)=0.106 *6*

† From level energy difference; recoil correction applied.

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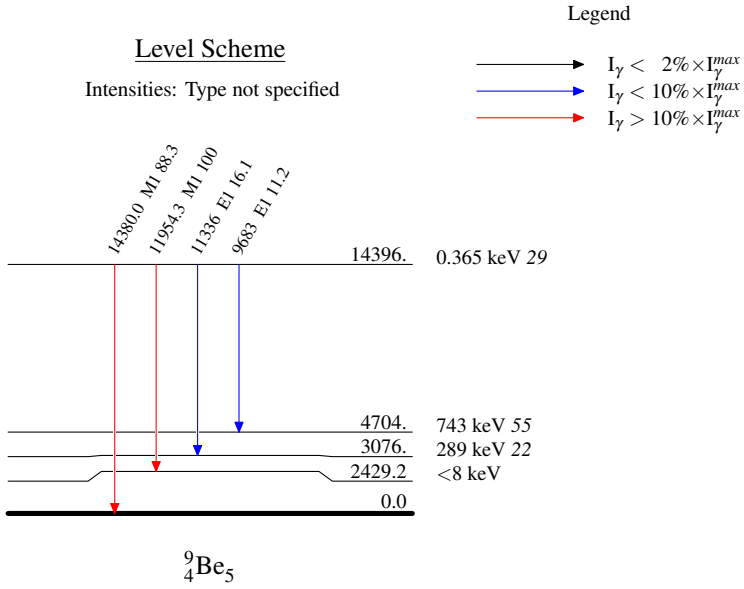
Level Scheme

Intensities: Type not specified



$^{9}_{4}Be_{5}$