^{3}H(d,X),^{4}He(n,X) 2002Ti10

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	X. Hu, D. R. Tilley, J. H. Kelley	NP A708,3 (2002)	23-Aug-2001

^{5}He Levels

Levels are based on the complex poles and residues of the S-matrix (extended R-matrix). See 2002Ti10 for a discussion of the adopted (S−matrix) levels. The fits are based on data from all possible reactions for the two−body channels d + ^{3}H and n + ^{4}He at CM energies corresponding to E_x<23 MeV. In addition, n + 4he* channels are included to approximate the effects of three−body breakup processes.

E(level)	J$^{\pi}$	$T_{1/2}$	Comments
0.0	3/2^{-}	0.648 MeV	%n=? T=1/2 Γ_n=66.578 MeV; Γ_{n0}=0.578 MeV Widthd=8.80 MeV. Note that the partial Γ corresponding to excited ^{4}He in the final state is 66 MeV, and (large) partial widths in closed channels have meaning only as asymtotic normalization constants.
1270	1/2^{-}	5.57 MeV	%n=? T=1/2 Γ_n=4.45 MeV; Γ_{n0}=3.18 MeV Widthd=38.0 MeV. Note that the partial Γ corresponding to excited ^{4}He in the final state is 1.27 MeV. (large) partial widths in closed channels have meaning only as asymtotic normalization constants.
16840	3/2^{+}	74.5 keV	%n=?; %d=?; %IT=? T=1/2 Γ_n=40 keV Widthd=25 keV.
19140	5/2^{+}	3.56 MeV	%n=?; %d=? T=1/2 Γ_n=3 keV Widthd=1.62 MeV.
19260	3/2^{+}	3.96 MeV	%n=?; %d=? T=1/2 Γ_n=14 keV Widthd=1.83 MeV.
19310	7/2^{+}	3.02 MeV	%n=?; %d=? T=1/2 Γ_n=45 keV Widthd=1.89 MeV.
19960	3/2^{-}	1.92 MeV	%n=?; %d=?; %p=? T=1/2 Γ_n=865 keV; Γ_{n0}=3 keV Widthd=325 keV. Note that the partial Γ corresponding to excited ^{4}He in the final state is 862 keV.
21250	3/2^{+}	4.61 MeV	%n=?; %d=? T=1/2 Γ_n=98 keV Widthd=2.38 MeV.
21390	5/2^{+}	3.95 MeV	%n=?; %d=? T=1/2 Γ_n=91 keV Widthd=2.12 MeV.
21640	1/2^{+}	4.03 MeV	%n=?; %d=?; %p=?

Continued on next page (footnotes at end of table)

$^{3}H(d,X),^{4}He(n,X)$ 2002Ti10 (continued)

^{5}He Levels (continued)

E(level)	J^{π}	$T_{1/2}$	Comments
			T=1/2 Γ_{n}=776 keV; Γ_{n0}=50 keV Widthd=878 keV. Note that the partial Γ corresponding to excited ^{4}He in the final state is 726 keV.
23970	7/2^{+}	5.44 MeV	%n=?; %d=? T=1/2 Γ_{n}=53 keV Widthd=2.85 MeV.
24060	5/2^{-}	5.23 MeV	%n=?; %d=? T=1/2 Γ_{n}=13 keV Widthd=2.18 MeV.
35.7×10^{3}? *4*		≈2 MeV	%n=?; %d=? T=1/2

$\gamma(^{5}He)$

E_{γ}	E_{i}(level)	J^{π}_{i}	E_{f}	J^{π}_{f}
15544	16840	3/2^{+}	1270	1/2^{-}
16810	16840	3/2^{+}	0.0	3/2^{-}

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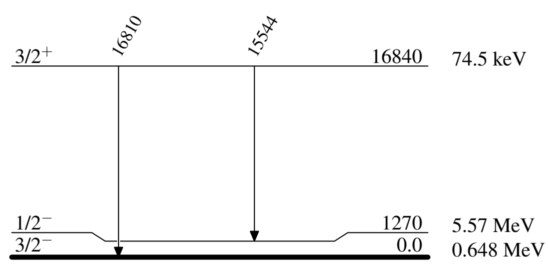
Level Scheme



$^{5}_{2}He_{3}$