^{122}Sn(^{3}He,d) 2014MiZZ,2012MiZY,1968Co22

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 174, 1 (2021)	15-Apr-2021

2014MiZZ, 2012MiZY: E=25.0 MeV ^{3}He beam was produced from tandem van de Graaff accelerator at A.W. Wright Nuclear Structure Laboratory of Yale University. Target was 100 μg/cm^{2} thick, 92.19% enriched ^{122}Sn. Reaction products were momentum analyzed with an Enge split-pole magnetic spectrograph (FWHM≈45-60 keV) and detected by a gas-filled ionization chamber and scintillator. Measured $\sigma(E_d,\theta)$, at 6° and 15°. Deduced levels, J, π, L-transfers, spectroscopic factors from DWBA analysis.

1968Co22: E=18 MeV ^{3}He beam was produced from the Saclay tandem Van de Graaff accelerator. Target was 500-800 μg/cm^{2} 90.80% enriched ^{122}Sn. Reaction products were detected with two ΔE-E telescopes of surface-barrier detectors (FWHM=70-110 keV). Measured $\sigma(E_d,\theta)$, θ(c.m.)=10° to 80°. Deduced levels, J, π, L-transfers, spectroscopic factors from DWBA analysis.

1966Ba45: E=19 MeV ^{3}He beam was produced from the tandem accelerator at the Niels Bohr Institute. Target was 200 μg/cm^{2} 90% enriched self-supporting ^{122}Sn. Reaction products were momentum-analyzed with a magnetic spectrograph. Measured $\sigma(E_d,\theta)$, at θ=40°. Deduced levels.

Others: 1977VaZB, 1966Ba25.

^{123}Sb Levels

Cross sections in comments are from 2014MiZZ. Uncertainties in spectroscopic factors and cross sections from 2012MiZY are statistical.

E(level)[†]	L[#]	C^2S[#]	Comments
0	4	0.84	L,C^2S: from 1968Co22. C^2S for J=L−1/2. dσ/dΩ=0.04 *1* (6°), 0.12 *1* (15°) (mb/sr).
159 *3*	2[@]	0.99 *9*	E(level): others: 160 *10* (1966Ba45), 165 *10* (1966Ba25). C^2S: other: 0.8 for J=5/2 (1968Co22). dσ/dΩ=0.71 *4* (6°), 2.17 *9* (15°) (mb/sr).
542 *1*	2[@]	0.128 *11*	E(level): others: 537 *10* (1966Ba45), 541 *10* (1966Ba25). C^2S: others: 0.184 *22* (2012MiZY), 0.3 (1968Co22), for J=L−1/2. dσ/dΩ=0.14 *1* (6°), 0.45 *2* (15°) (mb/sr).
713 *1*	0[@]	0.184 *22*	E(level): others: 712 *10* (1966Ba45), 722 *10* (1966Ba25). C^2S: other: 0.35 (1968Co22). dσ/dΩ=0.81 *4* (6°), 0.68 *3* (15°) (mb/sr).
1179[‡] *10*			
1253[‡] *10*			
1509 *1*	2[@]	0.240 *12*	E(level): other: 1502 *10* (1966Ba45). C^2S: other: 0.123 *10* for J=L−1/2 (2012MiZY); 0.1 for J=L+1/2 and 0.05 for J=L−1/2 (1968Co22). dσ/dΩ=0.31 *2* (15°) (mb/sr).
1575 *1*	2	0.123 *11*	E(level): other: 1574 *10* (1966Ba45). C^2S: other: 0.176 *8* for J=L−1/2 (2012MiZY). dσ/dΩ=0.53 *2* (15°) (mb/sr).
1644 *1*	2+5		E(level): other: 1644 *10* (1966Ba45). L,C^2S: from 1968Co22. C^2S=0.15 for J=L+1/2 and 0.07 for J=L−1/2 with L=2, 0.5 for L+1/2 with L=5. dσ/dΩ=0.08 *1* (6°), 0.13 *1* (15°) (mb/sr).
1732 *1*	2	0.246 *20*	E(level): other: 1740 *30* (1968Co22). L: from 1968Co22. Other: (2) from 2012MiZY. C^2S: for J=L−1/2 (2012MiZY). Others: 0.1 for J=L+1/2 and 0.05 for J=L−1/2 (1968Co22). dσ/dΩ=0.26 *2* (6°).
2105 *4*	2[@]	0.055 *5*	E(level): other: 2100 *30* (1968Co22). C^2S: others: 0.082 *8* for J=L−1/2 (2012MiZY); 0.2 for J=L+1/2 and 0.12 for J=L−1/2 (1968Co22).

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^{122}Sn(^{3}He,d) 2014MiZZ,2012MiZY,1968Co22 (continued)

^{123}Sb Levels (continued)

E(level)[†]	L[#]	C^2S[#]	Comments
			dσ/dΩ=0.17 *2* (6°), 0.25 *1* (15°) (mb/sr).
2250 *5*	(2)	0.018 *2*	C^2S: other: 0.028 *3* for J=L−1/2. dσ/dΩ=0.07 *1* (6°), 0.09 *1* (15°) (mb/sr).
2377 *4*	0	0.023 *3*	L: contains L=4 component from (α,t) data in 2012MiZY. dσ/dΩ=0.14 *1* (6°), 0.06 *1* (15°) (mb/sr).
2522 *4*	0[@]	0.173 *20*	E(level): other: 2520 *30* (1968Co22). L: other: L=2 component also reported in 2012MiZY. C^2S: others: 0.4 for L=0 (1968Co22); 0.088 *8* for J=L−1/2 and 0.058 *5* for J=L+1/2, with L=2 (2012MiZY). dσ/dΩ=1.30 *6* (6°), 0.84 *4* (15°) (mb/sr).
2584 *5*	2	0.042 *4*	C^2S: other: 0.064 *6* for J=L−1/2. dσ/dΩ=0.08 *1* (6°), 0.21 *1* (15°) (mb/sr).
2687 *9*	(2)	0.028 *3*	C^2S: other: 0.042 *4* for J=L−1/2. dσ/dΩ=0.10 *2* (6°), 0.14 *1* (15°) (mb/sr).
2757 *1*	(2)[@]	0.027 *3*	E(level): other: 2750 *30* (probable multiplet, 1968Co22). C^2S: others: 0.041 *5* for J=L−1/2 (2012MiZY); 0.58 for J=L+1/2 and 0.25 for J=L+1/2 (1968Co22). dσ/dΩ=0.11 *8* (6°), 0.14 *1* (15°) (mb/sr).
2811 *7*	0	0.044 *13*	L: contains L=4 component from (α,t) data in 2012MiZY. dσ/dΩ=0.32 *9* (6°), 0.27 *2* (15°) (mb/sr).
2891 *8*	2	0.092 *8*	C^2S: other: 0.138 *12* for J=L−1/2. dσ/dΩ=0.16 *2* (6°), 0.48 *2* (15°) (mb/sr).

[†] From 2014MiZZ, unless otherwise noted.
[‡] From 1966Ba45.
[#] From DWBA analysis of experimental differential cross sections in 2012MiZY, unless otherwise noted. Quoted values are for J=L+1/2 and values for J=L−1/2 are given under comments, unless otherwise noted.
[@] Also from 1968Co22.