^{124}Sn(d,p) 1972Ca33,1973Bi09,1964Ne10

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	J. Katakura	NDS 112, 495 (2011)	1-Jan-2010

1973Bi09: E=33.3 MeV, broad-range magnetic spectrograph, enriched target 99%, θ=12.5°−47.5°, FWHM≈30 keV, deduced C^2S; see ^{124}Sn(t,α).
1964Ne10: E=12 MeV, broad-range magnetic spectrograph, enriched target 96%, θ=25°, 45°, 65°. FWHM≈0.1 % in E.
1967Sc12: E=15 MeV, magnetic spectrograph, enriched target, θ=9°−50°, FWHM=40-60 keV.
1972Ca33: E=5.55, 5.15, 4.75, 4.55 MeV; measured Q, σ(E(p),θ) deduced C^2S(E(p)), Γ. FWHM≈25 keV.
1977St33: E=5-8 MeV, enriched target 95.3%, FWHM=15 keV, deduced C^2S.
2004Jo19,2005Jo23: Inverse kinematics, ^{2}H(^{124}Sn,p), E=562 MeV; measured angular momentum transfers, spectroscopic factors.

^{125}Sn Levels

E(level)‡	L[a]	C^2S†	Comments
0.0	5	0.42	
28 *10*	2	0.44	C^2S: 0.44 *6* (2004Jo19,2005Jo23).
217 *10*	0	0.33	C^2S: 0.33 *4* (2004Jo19,2005Jo23).
859 *10*			
936 *10*	(3)	0.015	
1069 *10*			
1261 *10*	2	0.07	
1364 *10*	4	0.038	
1540 *10*	2	0.04	
1756 *10*			
1803 *10*			
1892 *10*			
2254 *10*	(2)	0.019	
2355 *10*	(1)	0.007	C^2S,L: from (1967Sc12).
2460 *15*			
2519@ *4*			
2589 *10*	(3)	0.010	
2760 *10*	3	0.54	C^2S: 0.46 *5* (2004Jo19,2005Jo23). L: 3 (2004Jo19,2005Jo23).
2800 *10*			
2883 *10*	(3)	0.032	
2990 *15*			
3020 *15*			L,C^2S: L=3, C^2S=0.04 for 3016 (possible doublet for 2990+3020) in 1973Bi09.
3080 *10*	3	0.04	
3109@ *3*			
3150 *15*			
3180 *10*			
3195 *7*	3	0.067	E(level): From 1964Ne10. Not seen in 1972Ca33. 3193 from 1973Bi09.
3247 *10*			
3344 *10*	(1)	0.14	
3375@ *6*			
3416 *10*	1	0.36	
3482& *10*	1	0.08	E(level): 3469 (1964Ne10).
3530& *10*	(5)	0.04	E(level): 3537 (1964Ne10). L: L=(1) (1967Sc12).
3610& *10*	(3)	0.02	E(level): 3623 (1964Ne10).
3703@ *10*			
3738@ *7*			
3774@ *14*			

Continued on next page (footnotes at end of table)

^{124}Sn(d,p) 1972Ca33,1973Bi09,1964Ne10 (continued)

^{125}Sn Levels (continued)

E(level)‡	L[a]	C^{2}S†	Comments
3820@ *15*			
3850 *15*	(1)+(5)		L: For 3830 (possible doublet for 3820+3850) in 1973Bi09. C^{2}S: For 3830 (possible doublet for 3820+3850) in 1973Bi09. 0.10 for L=1 component; 0.02 for L=5 component.
3870 *15*			
3920 *15*			
3970 *15*	(3)+(5)		L: For 3940 (possible doublet for 3920+3970) in 1973Bi09. C^{2}S: 0.02 for L=(3) component; 0.01 for L=5 component.
4030 *15*		#	
4100 *15*	(1)	0.14	
4160 *15*	(3)	0.04	
4200 *15*	(3)	0.04	
4290 *15*			
4320 *15*			
4430 *15*			
4510 *15*			
4550 *15*	(5)	0.08	
4650 *15*	(3)	0.09	
4730 *15*	(3)	0.08	
4780 *15*			
4830 *15*	(3)	0.10	
4880 *15*			
4900 *15*			
4980 *15*			
5060 *15*	(5)	0.13	

† From DWBA analysis by 1973Bi09. Assignments for L=0, 1, 2, 3, 4, and 5 are, respectively, 3s1/2, 3p3/2, 2d5/2, 2f7/2, 1g7/2, and 1h9/2 except for 2d3/2 (26) and 1h11/2 (g.s.).

‡ From 1972Ca33, unless otherwise noted.

The $\sigma(\theta)$ is similar to an L=5 distribution, but the strength is about 3 times as large as that indicated by ^{124}Sn(α,^{3}He) (1973Bi09).

@ Only observed in 1964Ne10.

& From 1973Bi09. Not observed in 1972Ca33.

a From 1972Ca33, unless otherwise noted.