

$^{117}\text{Sn}(\text{d,p}),(\text{t,d})$  1983Fr28,1979Ch08

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	K. Kitao	NDS 75,99 (1995)	1-Feb-1993

(d,p): 1983Fr28 E(d)=12 MeV, Enge split-pole magnetic spectrograph, enriched target,  $\sigma(\text{p},\theta)$ , energy resolution=12 keV.

Others: 1960Co10, 1961Co03, 1961Ne08, 1964No06, 1967Sc12.

(t,d): 1979Ch08 E(t)=4.25-5.75 MeV, enriched target, semi,

$\Delta E(\text{FWHM})=30$  keV; deduced S, uncertainty 3-5%.

$J^\pi(^{117}\text{Sn})=1/2^+$ .

 $^{118}\text{Sn}$  Levels

E(level) <sup>‡</sup>	L	S <sup>†</sup>	Comments
0 <sup>#</sup>	0	0.449	S: S=1.40 from (t,d).
1230 <sup>#</sup>	3	0.236	S: S=0.16 from (t,d).
1758 <sup>#</sup>	3	0.064	S: S=0.20 from (t,d).
2058 <sup>#</sup>	3	0.062	S: S=0.17 from (t,d).
2279 <sup>b</sup>	3		
2329 <sup>#</sup>	3	2	0.837 E(level): probable unresolved doublet. S=0.46 from (t,d).
2408?	3		
2500 <sup>#</sup>	3	0	0.172 E(level): probable unresolved doublet. S: S=1.02 from (t,d).
2577 <sup>b</sup>	3		
2680	3	2	0.124
2725 <sup>c</sup>	3	2	0.55
2741	3	2	0.933
2775?	3		
2817	3	(5)	1.202
2908 <sup>a</sup>	3	(2)	0.455
2933	3	0	0.018
2961 <sup>@</sup>	3		
2972	3		
2991?	3		
3020 <sup>b</sup>	3		
3064	3	2	0.043
3141 <sup>a</sup>	3		
3237	3		
3264 <sup>b</sup>	3		
3274 <sup>b</sup>	3		
3286 <sup>b</sup>	3		
3317	3	1	0.007
3344 <sup>b</sup>	3		
3363	3	0	0.006
3383 <sup>@</sup>	3	(2)	0.052
3389	3		
3409 <sup>@</sup>	3		
3423	3		
3441?	3		
3464 <sup>@</sup>	3	(3)	0.055
3475	3		
3543	3	(2)	0.025
3576	3	3	0.085

Continued on next page (footnotes at end of table)

$^{117}\text{Sn}(\text{d,p}),(\text{t,d})$  **1983Fr28,1979Ch08** (continued) $^{118}\text{Sn}$  Levels (continued)

$E(\text{level})^{\ddagger}$	L	$S^{\dagger}$	$E(\text{level})^{\ddagger}$	L	$S^{\dagger}$	$E(\text{level})^{\ddagger}$	L	$S^{\dagger}$
3597 $^{\#}$ $^{\ddagger}$	2	0.109	4288 $^{\#}$			4798 $^{\#}$	(0,3)	0.003,0.012
3635 $^b$ $^{\ddagger}$			4313 $^{\textcircled{a}}$ $^{\ddagger}$			4832 $^{\#}$	0	0.014
3643 $^b$ $^{\ddagger}$			4326 $^{\#}$			4862 $^a$ $^{\ddagger}$	0	0.006
3677? $^{\ddagger}$			4352 $^b$ $^{\ddagger}$			4879 $^{\#}$	0	0.008
3721 $^{\#}$	1	0.042	4365 $^b$ $^{\ddagger}$			4940 $^a$ $^{\ddagger}$	(3)	0.076
3750 $^{\#}$	(1,2)	0.010,0.025	4391 $^{\textcircled{a}}$ $^{\ddagger}$			5006 $^{\&}$ $^{\ddagger}$		
3784 $^{\#}$	(0)	0.003	4408 $^{\#}$			5014 $^{\#}$	3	0.060
3819 $^{\#}$	2	0.058	4422 $^a$ $^{\ddagger}$	(0)	0.002	5025 $^{\#}$		
3857 $^b$ $^{\ddagger}$			4448 $^{\#}$	(2)	0.012	5043 $^a$ $^{\ddagger}$		
3889 $^{\#}$	(1)	0.003	4472 $^{\textcircled{a}}$ $^{\ddagger}$	(1)	0.008	5068 $^{\#}$	(3)	0.073
3916 $^{\#}$	2	0.049	4484 $^{\#}$			5098 $^{\#}$		
3937 $^{\#}$	2	0.040	4507 $^b$ $^{\ddagger}$			5116 $^{\#}$	(1,2)	0.005,0.010
3995 $^{\#}$	1	0.006	4523 $^b$ $^{\ddagger}$			5142 $^{\&}$ $^{\ddagger}$		
4046 $^{\#}$	(1,2)	0.039,0.123	4540 $^{\#}$	(1,2)	0.003,0.010	5150 $^{\#}$		
4115 $^{\#}$	1	0.015	4573 $^{\#}$	(1)	0.005	5163 $^{\#}$		
4136 $^{\#}$	2	0.036	4617 $^{\#}$			5181 $^{\&}$ $^{\ddagger}$		
4203 $^{\#}$	2	0.019	4637 $^{\#}$	2	0.051	5193 $^{\#}$		
4233 $^{\#}$	(3)	0.025	4696 $^{\textcircled{a}}$ $^{\ddagger}$			5208 $^{\#}$		
4252 $^{\textcircled{a}}$ $^{\ddagger}$			4706 $^{\#}$					

$^{\dagger}$   $S'$  from DWBA analysis in (d,p).

$^{\ddagger}$  From (d,p) unless otherwise noted. Uncertainty of 3 keV is assumed (evaluators).

$^{\#}$  Also observed in (t,d).

$^{\textcircled{a}}$  Unresolved doublet.

$^{\&}$  Unresolved triplet.

$^a$  Probable unresolved doublet.

$^b$  Weakly excited level in (d,p).

$^c$  From (t,d).