

$^{117}\text{Sn}(\alpha, 2n\gamma)$ 1979Ha47

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	D. M. Symochko, E. Browne, J. K. Tuli		NDS 110,2945 (2009)	1-Dec-2008

1979Ha47: $E(\alpha)=19.8\text{-}27.0$ MeV; enriched (85.6%) target ($\approx 10\text{mg/cm}^2$); semi γ , $\gamma\gamma$, $\gamma(\theta)$, $\gamma(t)$, excit (at 19.8, 22.2, 24.2, 27.0 MeV).

Other: 1979Ha18 (previous paper of 1979Ha47).

The level scheme is that proposed by 1979Ha47.

 ^{119}Te Levels

E(level) [†]	J^π [‡]	$T_{1/2}$	Comments
0.0	$1/2^+$		
257.50 9	$3/2^+$		
260.96 [#] 5	$11/2^-$	4.70 d 4	
320.40 9	$5/2^+$	2.2 ns 2	$T_{1/2}$: from I(320.4 γ)(t).
467.92 9	$9/2^-$		
598.20 22			
669.10 13	$7/2^+$		
702.97 21	($7/2^+$)		
766.74 15	$5/2^-, 7/2^-$		
771.7 4	$5/2^-$		
901.26 10	$15/2^-$		
945.81 19	($9/2^+$)		
979.95 14	($13/2^-$)		
994.20 24	$5/2^-, 7/2^-$		
1215.4 4			
1280.73 21	($11/2^+$)		
1296.1 4			
1586.32 24	($13/2^+$)		
1598.66 14	($17/2^-$)		
1618.96 16	($19/2^-$)		
1889.0 5			
1939.7 3	($15/2^+$)		
2101.86 15	($21/2^-$)		
2272.46 18	($23/2^-$)		
2302.76 18	($23/2^-, 25/2^-$)		
3010.1 6			

[†] E(levels) are based on the fixed energy of 260.96 5 for $11/2^-$ level and a least-squares fit by the evaluators to $E(\gamma's)$.

[‡] From Adopted Levels.

[#] Not given in 1979Ha47. Value is that from ^{119}I $\varepsilon+\beta^+$ decay.

 $\gamma(^{119}\text{Te})$

E_γ [†]	I_γ ^{‡‡}	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.&	δ &
62.9 1	22.8 13	320.40	$5/2^+$	257.50	$3/2^+$	(M1+E2)	+0.12 12
^x 140.7 2	2.6 2						
170.6 1	8.8 3	2272.46	($23/2^-$)	2101.86	($21/2^-$)	(M1+E2)	-0.045 45
200.9 1	6.9 4	2302.76	($23/2^-, 25/2^-$)	2101.86	($21/2^-$)	(M1+E2)	-0.045 45
207.0 1	61.3 6	467.92	$9/2^-$	260.96	$11/2^-$	(M1+E2)	-0.235 35
242.8 2	4.8 4	945.81	($9/2^+$)	702.97	($7/2^+$)	(M1+E2)	-0.41 39
257.5 1	100.0 5	257.50	$3/2^+$	0.0	$1/2^+$	M1+E2	+0.17 6
299.0 2	3.5 3	766.74	$5/2^-, 7/2^-$	467.92	$9/2^-$		

Continued on next page (footnotes at end of table)

$^{117}\text{Sn}(\alpha, 2n\gamma)$ **1979Ha47** (continued) $\gamma(^{119}\text{Te})$ (continued)

$E_\gamma^\dagger$	$I_\gamma^{\ddagger\#}$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. &	$\delta^\&$
305.6 2	4.4 4	1586.32	(13/2 ⁺)	1280.73	(11/2 ⁺)	(M1+E2)	-1.0 6
320.4 1	40.0 6	320.40	5/2 ⁺	0.0	1/2 ⁺	E2	
325.1 2	7.4 6	994.20	5/2 ⁻ , 7/2 ⁻	669.10	7/2 ⁺		
334.9 1	7.5 8	1280.73	(11/2 ⁺)	945.81	(9/2 ⁺)	(M1+E2)	-0.33 17
340.7 2	3.6 8	598.20		257.50	3/2 ⁺		
348.7 1	11.4 6	669.10	7/2 ⁺	320.40	5/2 ⁺	M1+E2	-0.27 25
353.4 2	3.4 5	1939.7	(15/2 ⁺)	1586.32	(13/2 ⁺)		
382.6 3	24.6 10	702.97	(7/2 ⁺)	320.40	5/2 ⁺	(M1+E2)	≈ -0.8
^x 422.6 2	9.4 8						
^x 431.1 3	2.9 6						
^x 443.7 3	3.2 6						
482.9 1	26.5 7	2101.86	(21/2 ⁻)	1618.96	(19/2 ⁻)	(M1+E2)	-0.36 7
503.2 1	27.8 18	2101.86	(21/2 ⁻)	1598.66	(17/2 ⁻)	(E2)	
505.6 2	6.2 17	766.74	5/2 ⁻ , 7/2 ⁻	260.96	11/2 ⁻		
512.0 3	30.3 16	979.95	(13/2 ⁻)	467.92	9/2 ⁻		
514.2 3	14.4 15	771.7	5/2 ⁻	257.50	3/2 ⁺		
^x 518.3 3	8.1 17						
524.4 2	9.7 15	1296.1		771.7	5/2 ⁻		
577.8 2	17.2 7	1280.73	(11/2 ⁺)	702.97	(7/2 ⁺)	E2	
592.9 3	7.2 8	1889.0		1296.1			
618.7 1	36.2 8	1598.66	(17/2 ⁻)	979.95	(13/2 ⁻)	E2	
625.4 2	28.7 8	945.81	(9/2 ⁺)	320.40	5/2 ⁺	E2	
640.3 1	189 [@] 6	901.26	15/2 ⁻	260.96	11/2 ⁻	E2	
640.5 [#] 2	20.0 [#] 30	1586.32	(13/2 ⁺)	945.81	(9/2 ⁺)	E2	
653.5 2	25.8 10	2272.46	(23/2 ⁻)	1618.96	(19/2 ⁻)	Q	
659.0 2	11.8 10	1939.7	(15/2 ⁺)	1280.73	(11/2 ⁺)	(E2)	
^x 672.2 2	12.0 7						
697.4 2	13.8 12	1598.66	(17/2 ⁻)	901.26	15/2 ⁻	(M1+E2)	≈ -0.8
717.7 2	96 6	1618.96	(19/2 ⁻)	901.26	15/2 ⁻	(E2)	
719.0 2	55 5	979.95	(13/2 ⁻)	260.96	11/2 ⁻	(M1+E2)	
747.5 3	12.0 7	1215.4		467.92	9/2 ⁻		
908.2 5	4.2 16	3010.1		2101.86	(21/2 ⁻)		
^x 1010.0 4	12.1 19						

[†] From **1979Ha47**.[‡] Relative to I(257.5 γ)=100 at $\theta=125^\circ$ and $E(\alpha)=27$ MeV.# From $\gamma\gamma$ data.[@] From unresolved 640.3+640.5 γ 's and $I_\gamma(640.5\gamma)$.& From $\gamma(\theta)$. The evaluators assigned the parities from the known J^π values of Adopted Levels.^x γ ray not placed in level scheme.

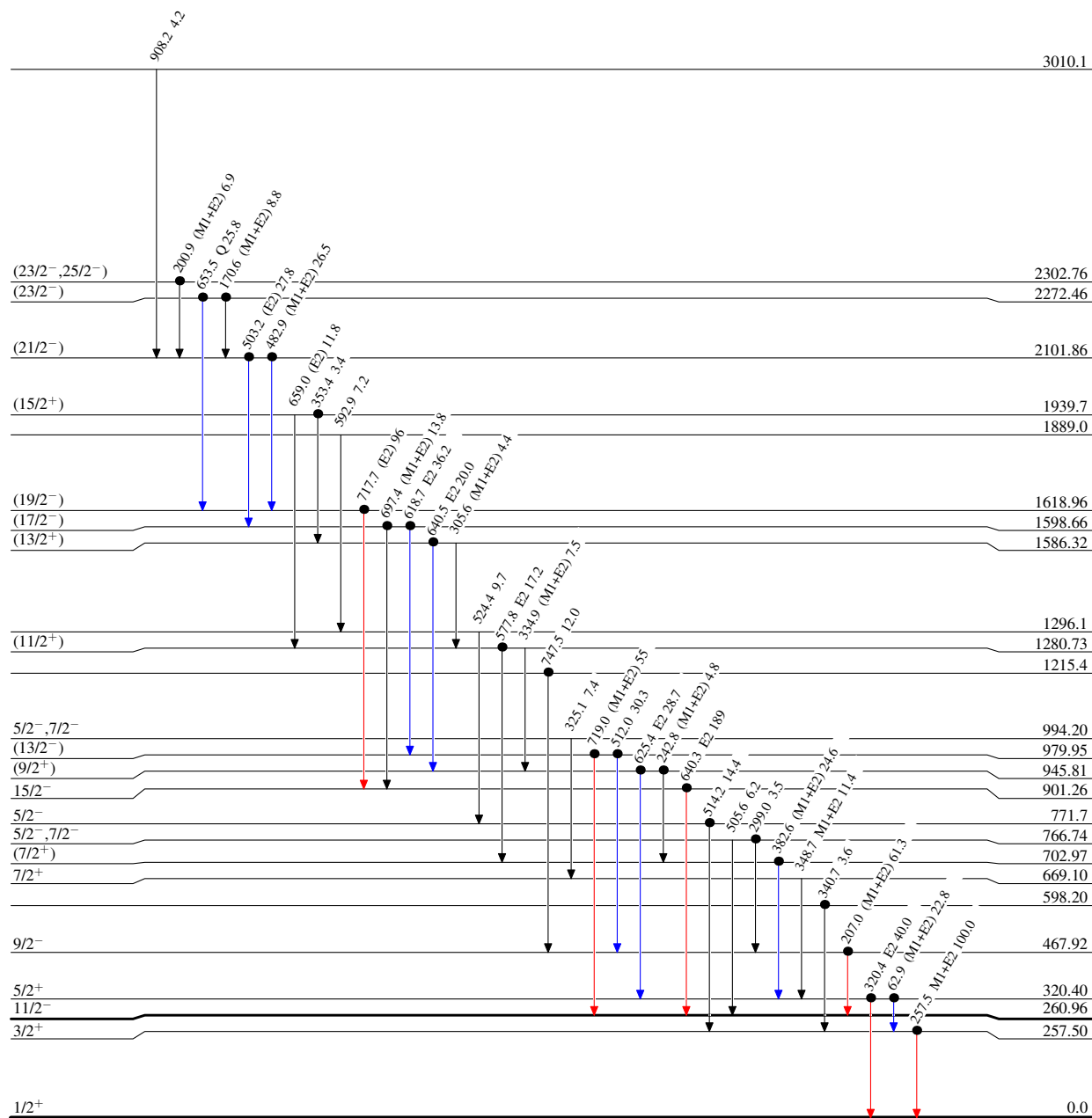
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Level Scheme

Intensities: Type not specified

Legend

- $I_\gamma < 2\% \times I_\gamma^{\max}$
- $I_\gamma < 10\% \times I_\gamma^{\max}$
- $I_\gamma > 10\% \times I_\gamma^{\max}$
- Coincidence

 $^{119}\text{Te}_{67}$ 2.2 ns 2
4.70 d 4