^{124}Sn(α,3nγ) 1972Ke19

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

1972Ke19: E=26-37 MeV, enriched target 95%, excitation function, semi γ, γγ-coin, γ(θ).
1988Ar09: E=35-57 MeV, enriched target 96.9%, excitation function, γ-ray multiplicity.

^{125}Te Levels

E(level)†	J^π#	$T_{1/2}$‡	Comments
0.0	1/2+	stable	
35.35 *10*	3/2+		
144.7 *3*	11/2−	57.40 d *15*	
321.07 *25*	9/2−		
443.60 *10*	3/2+		
463.60 *12*	5/2+		
525.2 *3*	7/2−		
636.06 *20*	7/2+		
642.14 *20*	7/2+		
840.8 *3*	15/2(−)		
1191.67 *23*	(11/2+)		
1310.4 *3*			
1500.5 *3*	19/2(−)		
1570.1 *3*	(15/2+)		
1851.3 *4*	21/2(−)		
1851.3+x			Additional information 1.
2174.7 *4*			
2375.1 *4*	(19/2+)		
2554.7+x *3*			
2570.1 *5*	(23/2+)		
2611.5+x *3*			

† From a least-squares fit (by evaluators) to the Eγ′s.
‡ From Adopted Levels.
# From 1972Ke19 based on γ(θ) for levels above 840 keV. Pure Q transitions are assumed as E2 and D+Q, generally, as M1+E2. Levels below 840 keV are from Adopted Levels.

γ(^{125}Te)

E_γ†	I_γ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.#	Comments
(35.5 *1*)		35.35	3/2+	0.0	1/2+		
x160.4@	1.1						
176.4 *1*	14	321.07	9/2−	144.7	11/2−	D+Q	A_2=−0.48 *11*, A_4=+0.21 *14* (1972Ke19).
189.8 *2*	0.5	1500.5	19/2(−)	1310.4			
195.0 *3*	0.6	2570.1	(23/2+)	2375.1	(19/2+)		
x201.5	1.5						
204.1 *2*	0.7	525.2	7/2−	321.07	9/2−		
321.1 *2*	0.6	642.14	7/2+	321.07	9/2−		
x331.6@	1.0						
350.7 *2*	48	1851.3	21/2(−)	1500.5	19/2(−)	D+Q	A_2=−0.42 *6*, A_4=+0.06 *7* (1972Ke19).
378.5 *2*	16	1570.1	(15/2+)	1191.67	(11/2+)	(Q)	A_2=+0.29 *1*, A_4=−0.15 *3* (1972Ke19).
380.6 *2*	3.4	525.2	7/2−	144.7	11/2−		A_2=−0.01 *2*, A_4=+0.02 *1* (1972Ke19).
x391.0	2.3						A_2=−0.27 *7*, A_4=+0.15 *9* (1972Ke19).

Continued on next page (footnotes at end of table)

^{124}Sn(α,3nγ) 1972Ke19 (continued)

γ(^{125}Te) (continued)

E_γ †	I_γ ‡	E_i(level)	J^π_i	E_f	J^π_f	Mult. #	Comments
x412.7 @	0.9						
428.4 *1*	3.8	463.60	5/2+	35.35	3/2+	(D)	A_2=−0.37 *7*, A_4=−0.18 *10* (1972Ke19).
443.6 *1*	1.9	443.60	3/2+	0.0	1/2+		
463.0 *2*	1.9	463.60	5/2+	0.0	1/2+		A_2=+0.45 *2*, A_4=+0.23 *4* (1972Ke19).
469.3 *2*	4	1310.4		840.8	15/2(−)		A_2=+0.38 *5*, A_4=+0.14 *8* (1972Ke19).
523.7 *2*	10	2375.1	(19/2+)	1851.3	21/2(−)	D+Q	A_2=−0.31 *5*, A_4=+0.02 *6* (1972Ke19).
549.6 *3*	1.9	1191.67	(11/2+)	642.14	7/2+		
555.6 *2*	18	1191.67	(11/2+)	636.06	7/2+	(Q)	A_2=+0.31 *4*, A_4=−0.04 *6* (1972Ke19).
x566.4 @	3						
600.7 *2*	<31	636.06	7/2+	35.35	3/2+		E_γ: Composite peak with γ from ^{116}Sn(α,2nγ). A_2=+0.33 *7*, A_4=+0.02 *10* (1972Ke19).
606.8 *2*	4	642.14	7/2+	35.35	3/2+		A_2=+0.30 *6*, A_4=−0.05 *10* for 605.8(^{116}Sn(α,2n)^{118}Te)+606.8+615.0(^{116}Sn(α,2n)^{118}Te) (1972Ke19).
659.9 *2*	94	1500.5	19/2(−)	840.8	15/2(−)	Q	A_2=+0.35 *2*, A_4=−0.08 *4* (1972Ke19).
673.9 *3*	2.1	2174.7		1500.5	19/2(−)		
x679.6	2.1						A_2=−0.15 *10*, A_4=+0.05 *13* (1972Ke19).
696.1 *1*	100	840.8	15/2(−)	144.7	11/2−	Q	A_2=+0.28 *7*, A_4=−0.30 *15* (1972Ke19).
703.4 *3*	11	2554.7+x		1851.3+x		D(+Q)	A_2=−0.62 *8*, A_4=−0.16 *9* (1972Ke19).
718.9 *3*	11	2570.1	(23/2+)	1851.3	21/2(−)	D	A_2=−0.20 *8*, A_4=+0.06 *12* (1972Ke19).
x729.3	4						
760.2 *3*	7	2611.5+x		1851.3+x		(Q)	A_2=+0.39 *1* (1972Ke19).
x771.9	0.8						
x776.8	1.4						
x799.1	3.5					D+Q	A_2=+0.34 *13* (1972Ke19).
805.1 *3*	2.2	2375.1	(19/2+)	1570.1	(15/2+)		
x822.8	1.1						
x828.6	0.6						
x844.7	1.1						
864.6 *3*	1.8	2174.7		1310.4			
874.3 *3*	2.6	2375.1	(19/2+)	1500.5	19/2(−)		A_2=+0.20 *8* (1972Ke19).
x909.7	1.7						
x1014.8	1.9						
1047.1 *3*	3.6	1191.67	(11/2+)	144.7	11/2−		
x1088.2 @	8						
x1107.7	4						
x1132.0	4						
1165.9 *3*	3	1310.4		144.7	11/2−		
x1264.9	1						
x1269.2	1						
x1272.9	1						
x1594.0	1						

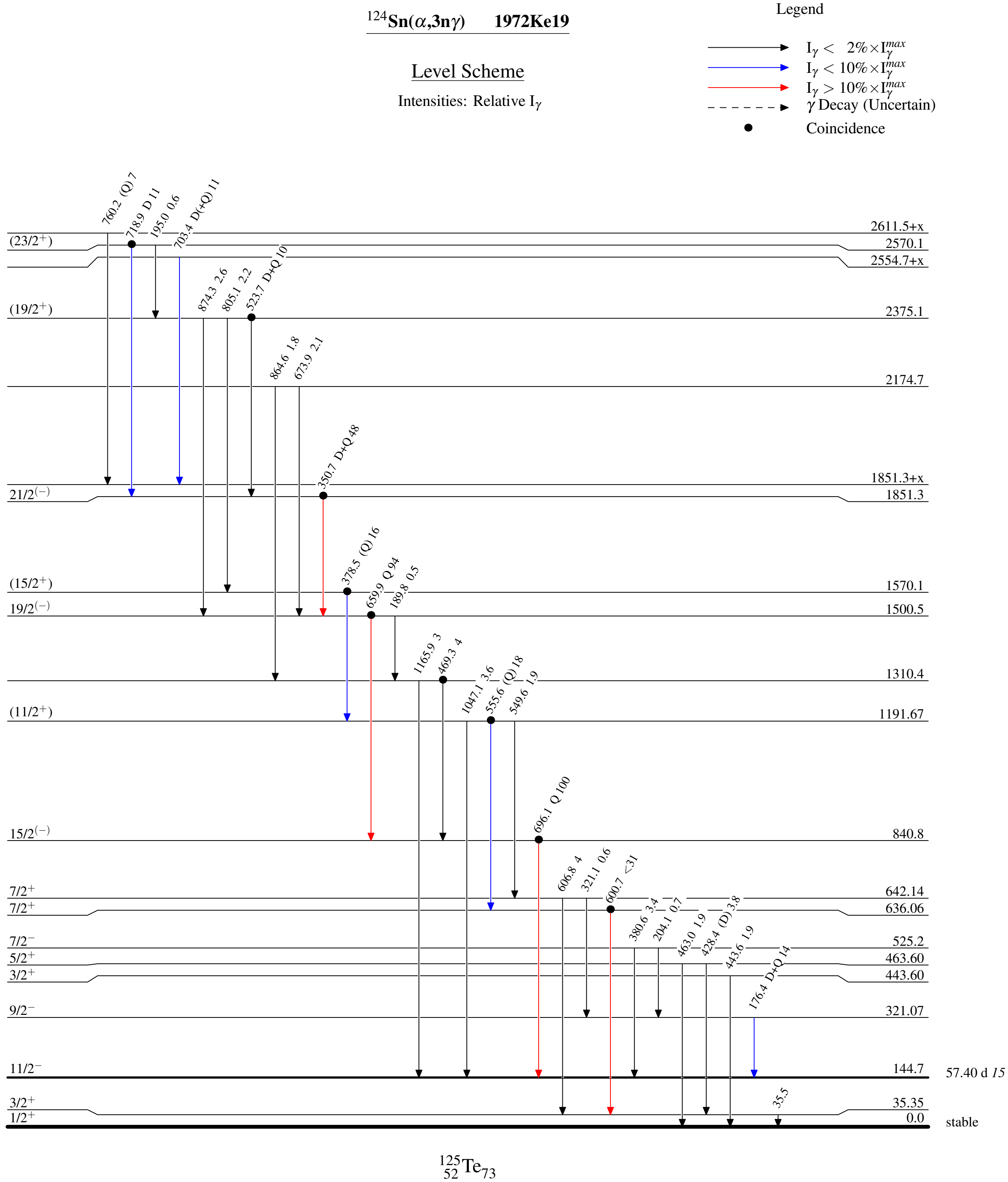
† From 1972Ke19. Uncertainties of 0.1 keV for strong γ rays and 0.2-0.3 keV for weak or unresolved γ rays are assigned by the evaluators.

‡ Relative to I(696.1γ)=100 at E(α)=31.5 MeV.

\# From γ(θ).

@ Assignment to (α,3nγ) is uncertain.

x γ ray not placed in level scheme.



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Level Scheme
Intensities: Relative Iγ
Legend
Iγ < 2%×Iγmax
Iγ < 10%×Iγmax
Iγ > 10%×Iγmax
γ Decay (Uncertain)
Coincidence
2611.5+x
(23/2+) 2570.1
2554.7+x
(19/2+) 2375.1
2174.7
1851.3+x
21/2(−) 1851.3
(15/2+) 1570.1
19/2(−) 1500.5
1310.4
(11/2+) 1191.67
15/2(−) 840.8
7/2+ 642.14
7/2+ 636.06
7/2− 525.2
5/2+ 463.60
3/2+ 443.60
9/2− 321.07
11/2− 144.7 57.40 d 15
3/2+ 35.35
1/2+ 0.0 stable
760.2 (Q) 7
718.9 D 11
195.0 0.6
703.4 D(+Q) 11
874.3 2.6
805.1 2.2
523.7 D+Q 10
864.6 1.8
673.9 2.1
350.7 D+Q 48
378.5 (Q) 16
659.9 Q 94
189.8 0.5
1165.9 3
469.3 4
1047.1 3.6
555.6 (Q) 18
549.6 1.9
696.1 Q 100
606.8 4
321.1 0.6
600.7 <31
380.6 3.4
204.1 0.7
463.0 1.9
428.4 (D) 3.8
443.6 1.9
176.4 D+Q 14
35.5
$^{125}_{52}$Te$_{73}$