^{126}Te(α,3nγ) 1970Re01

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	A. Hashizume	NDS 112, 1647 (2011)	1-Oct-2009

The level scheme is from the Adopted Levels. The levels at 780.5, 816.2, 1454.9, and 2301.2 keV proposed by 1970Re01 are built on the 308.9 level not 297.1 level. However, the 308.9 keV, *11*/2$^-$ level is not proposed by 1970Re01. Five other levels at 874.1, 981.1, 1302.6, 1647.1, and 1926.5 keV in 1970Re01 are excluded from the level scheme by the evaluator.

1970Re01: E=43 MeV; semi γ, $\gamma\gamma$ coin, γ(t), $\gamma(\theta)$, excitation functions.

Other: 1978Gi16.

^{127}Xe Levels

E(level)†	J$^\pi$‡	T$_{1/2}$	E(level)†	J$^\pi$‡
0.0	1/2$^+$	36.346 d *3*	938.4 *17*	(11/2)$^+$
124.7 *10*	3/2$^+$		1080.6 *18*	11/2$^+$
297.2 *14*	9/2$^-$	69.2 s *9*	1369.2 *20*	(13/2$^-$,15/2$^-$)
309.0 *14*	(11/2$^-$)		1466.7 *17*	(13/2$^-$ to 17/2$^-$)
321.2 *9*	3/2$^+$		1508.8 *20*	(19/2$^-$)
342.2 *14*	7/2$^+$		1622.4 *20*	(15/2$^+$)
375.2 *9*	5/2$^+$		1751.1 *20*	15/2$^+$
530.0 *15*	7/2$^+$		1924.6 *22*	
645.7 *15*	(9/2)$^+$		2243.2 *22*	(17/2$^-$,21/2$^-$)
792.2 *17*	(11/2$^-$,13/2$^-$)		2312.7 *22*	(23/2$^-$)
804.6 *10*	5/2$^+$		2395.2 *22*	(15/2$^+$,19/2$^+$)
828.2 *17*	(15/2$^-$)		2497.6 *23*	15/2$^+$,19/2$^+$
897.3 *14*	(9/2$^+$)		2729.9 *24*	

† From a least-squares fit to E$_\gamma$'s.

‡ From Adopted Levels.

^{126}Te(α,3nγ) 1970Re01 (continued)

$\gamma(^{127}Xe)$

E_γ[†]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[@]	Comments
(11.8 *4*)		309.0	(11/2$^-$)	297.2	9/2$^-$				E_γ: from (α,2nγ).
124.7	100	124.7	3/2$^+$	0.0	1/2$^+$				
172.4	55	297.2	9/2$^-$	124.7	3/2$^+$	E3		1.627	α(K)=0.912 *13*; α(L)=0.564 *8*; α(M)=0.1238 *18*; α(N+..)=0.0269 *4* α(N)=0.0245 *4*; α(O)=0.00243 *4* Mult.: from ^{127}Xe IT decay (1968Sc14). Additional information 1.
217.5	18	342.2	7/2$^+$	124.7	3/2$^+$				
[x]218.7	10								
303.6	15	645.7	(9/2)$^+$	342.2	7/2$^+$				
321.2	5	321.2	3/2$^+$	0.0	1/2$^+$				
348.5	5	645.7	(9/2)$^+$	297.2	9/2$^-$				
375.2	24	375.2	5/2$^+$	0.0	1/2$^+$	E2		0.0208	α(K)=0.01734 *25*; α(L)=0.00273 *4*; α(M)=0.000562 *8*; α(N+..)=0.0001279 *18* α(N)=0.0001145 *16*; α(O)=1.343×10^{-5} *19* Mult.: From Adopted Levels, gammas. δ: +0.26 *6* for M1+E2 (1970Re01).
405.3	15	530.0	7/2$^+$	124.7	3/2$^+$				
429.3	8	804.6	5/2$^+$	375.2	5/2$^+$	D+Q	−0.28 *8*		δ: from $\gamma(\theta)$.
[x]472.1	10					Q			
483.4[&]	28[&]	792.2	(11/2$^-$,13/2$^-$)	309.0	(11/2$^-$)	D+Q			δ: from $\gamma(\theta)$.
483.4[&]	28[&]	804.6	5/2$^+$	321.2	3/2$^+$	D+Q	−0.32 *5*		
486.7	3	2729.9		2243.2	(17/2$^-$,21/2$^-$)				
519.1	100	828.2	(15/2$^-$)	309.0	(11/2$^-$)	Q			
522.1	4	897.3	(9/2$^+$)	375.2	5/2$^+$				
550.6	18	1080.6	11/2$^+$	530.0	7/2$^+$				
555.4	5	1924.6		1369.2	(13/2$^-$,15/2$^-$)				
577.0	10	1369.2	(13/2$^-$,15/2$^-$)	792.2	(11/2$^-$,13/2$^-$)	D+Q			
596.2	18	938.4	(11/2)$^+$	342.2	7/2$^+$				
[x]629.8	3								
638.4	23	1466.7	(13/2$^-$ to 17/2$^-$)	828.2	(15/2$^-$)	D+Q	−0.26 *4*		
[x]646.2	5								
[x]651.4	4								
[x]666.3	10								
670.5	8	1751.1	15/2$^+$	1080.6	11/2$^+$				
674.6	5	1466.7	(13/2$^-$ to 17/2$^-$)	792.2	(11/2$^-$,13/2$^-$)	Q			
680.6	69	1508.8	(19/2$^-$)	828.2	(15/2$^-$)	Q			
684.0	28	1622.4	(15/2$^+$)	938.4	(11/2)$^+$	E2		0.00393 *6*	α=0.00393 *6*; α(K)=0.00336 *5*; α(L)=0.000455 *7*; α(M)=9.26×10^{-5} *13*; α(N+..)=2.14×10^{-5} *3* α(N)=1.91×10^{-5} *3*; α(O)=2.33×10^{-6} *4* Mult.: From Adopted Levels, gammas. δ: −0.08 *8* or +1.00 *15* for M1+E2 (1970Re01).

^{126}Te(α,3nγ) 1970Re01 (continued)

$\gamma(^{127}Xe)$ (continued)

E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]
[x]733.0	10					
734.4	15	2243.2	(17/2$^-$,21/2$^-$)	1508.8	(19/2$^-$)	
[x]744.1	10					
746.5	4	2497.6	15/2$^+$,19/2$^+$	1751.1	15/2$^+$	
772.8	8	2395.2	(15/2$^+$,19/2$^+$)	1622.4	(15/2$^+$)	
803.9	31	2312.7	(23/2$^-$)	1508.8	(19/2$^-$)	Q

[†] From 1970Re01, except the 11.8γ. Uncertainties of E_γ's and I_γ's are not given by 1970Re01.

[‡] I_γ's are normalized to I(519.1γ)=100 at θ=125°. Intensities of 124.7γ and 172.4γ in the decay of 69.2-s isomer are independently normalized.

[#] From A_2 values (1970Re02).

[@] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

[&] Multiply placed with undivided intensity.

[x] γ ray not placed in level scheme.

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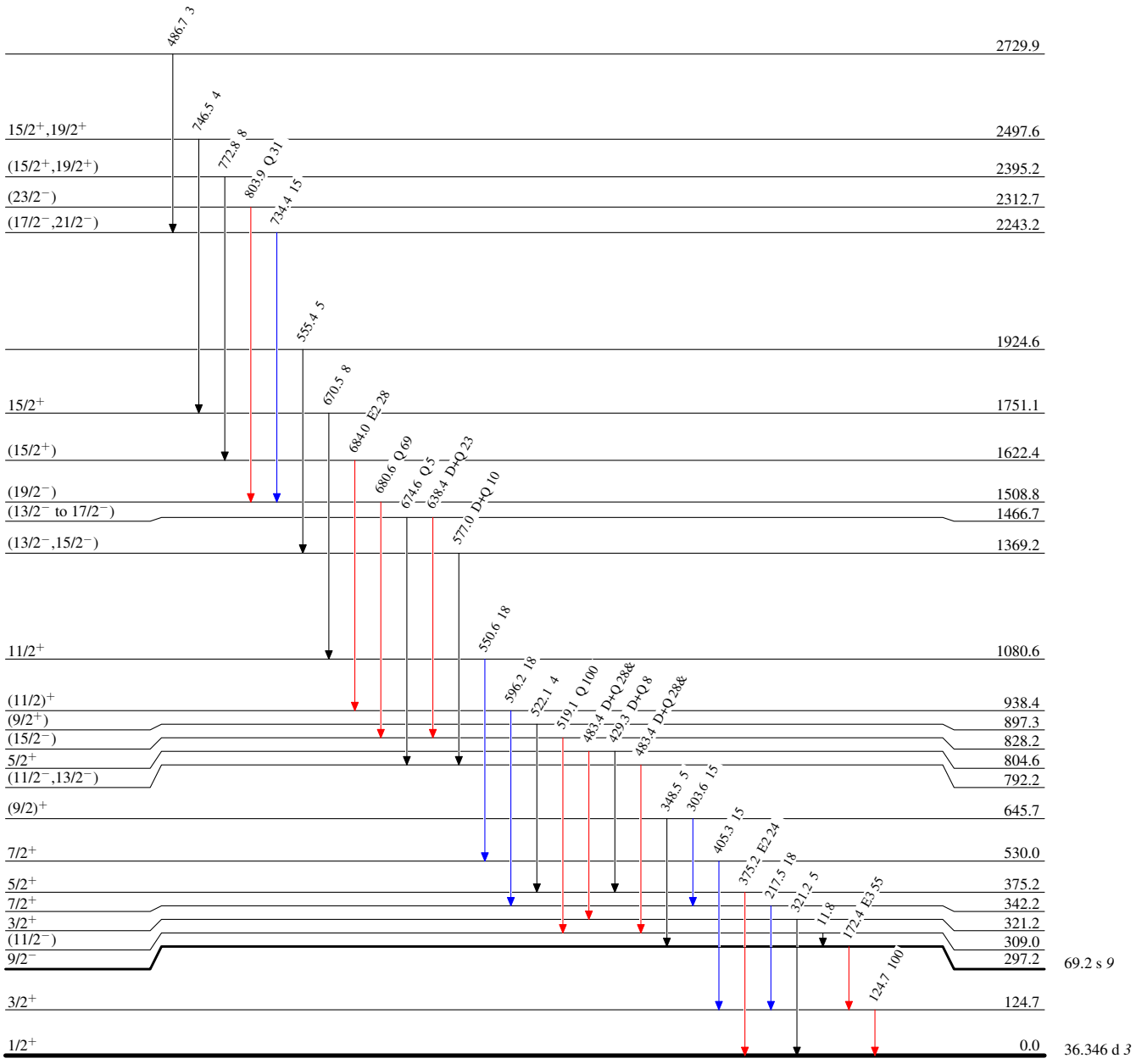
Level Scheme

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



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