^{130}Te(α,2nγ) 1986Li23,1983Ba64,1971Ke13

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov, A. A. Rodionov and S. Sakharov, Balraj Singh	NDS 104, 497 (2005)	10-Feb-2005

1986Li23: E=26 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma(\theta)$.
1983Ba64: E=15, 25, 30 MeV. Measured Eγ, Iγ.
1971Ke13 (also 1969BE04): E=31.5 MeV. Measured γ, γ(t), $\gamma\gamma$, $\gamma(\theta)$, $T_{1/2}$ of 2214, (7^-) level.
Others:
2004Va03: ^{198}Pt(^{136}Xe,Xγ) E=850 MeV. Measured $\gamma\gamma$(t) for 2214 level.
1987Le31, 1986Vo14: E=27 MeV. Measured $\gamma(\theta$,H,t), deduced g factor and Q.
1976Ha50, 1975Ri03: E=35 MeV. Measured $\gamma\gamma(\theta$,H,t), deduced g factor.
The level scheme is from 1986Li23.
1965Mo10: E=34, 48, 52 MeV. Measured Eγ, Iγ.

^{132}Xe Levels

E(level)	J^π †	$T_{1/2}$	Comments
0.0	0^+		
667.80 *10*	2^+		
1298.30 *23*	2^+		
1440.40 *15*	4^+		
1962.91 *25*	4^+		
2040.51 *18*	(5^-)		
2167.31 *25*	5^+		
2214.21 *20*	(7^-)	87 ns *3*	g=−0.009 *4*; Q=0.010 *5* g,Q: DPAC (1987Le31,1986Vo14). Configuration=$\nu(h^{-1}_{11/2}\ d^{-1}_{3/2})$. $T_{1/2}$: weighted average of 86 ns *3* (2004Va03), 90 ns *7* (1986Vo14) and 90 ns *10* (1971Ke13).
2353.3 *4*	(6^+)		
2752.41 *23*	(10^+)	8.39 ms *11*	g=(−)0.195 *5* (1976Ha50) see ^{132}Xe IT decay (8.39 ms) dataset for details of delayed transitions. g: DPAD (1976Ha50). Configuration=$\nu h^{-2}_{11/2}$.

† From $\gamma(\theta)$ and multipolarities from ce data.

$\gamma(^{132}Xe)$

A_2 and A_4 are from $\gamma(\theta)$ data of 1986Li23, except as noted.

E_γ †	I_γ ‡	E_i(level)	J^π_i	E_f	J^π_f	Mult.	α &	Comments
173.6 *1*	33 *2*	2214.21	(7^-)	2040.51	(5^-)	E2	0.263	α(K)=0.204 *7*; α(L)=0.0472 *15*; α(M)=0.0098 *3*; α(N+..)=0.00238 *8* A_2=0.00 *2* (1971Ke13).
x312.5	4							E_γ: from 1971Ke13 only. Additional information 1.
312.9 *3*	4.2 *3*	2353.3	(6^+)	2040.51	(5^-)	D		A_2=−0.506 *16*, A_4=−0.266 *22*.
x402.7@ *3*	3.1 *8*							I_γ: for E_α=25 MeV.
522.5 *2*	3.03 *24*	1962.91	4^+	1440.40	4^+			
538.1 *1*	27 *5*	2752.41	(10^+)	2214.21	(7^-)	E3	0.0197	α(K)=0.0158 *5*; α(L)=0.00294 *9* Additional information 8.

Continued on next page (footnotes at end of table)

^{130}Te(α,2nγ) 1986Li23,1983Ba64,1971Ke13 (continued)

$\gamma(^{132}Xe)$ (continued)

E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ [#]	Comments
600.1 *1*	59.5 *27*	2040.51	(5^-)	1440.40	4^+	D+Q	−0.18 *7*	A_2=−0.159 *18*, A_4=+0.064 *28*. Additional information 6.
[x]614.9[@] *3*	7.0 *18*							I_γ: for E_α=25 MeV.
630.6 *1*	4.2 *4*	1298.30	2^+	667.80	2^+	D+Q		δ: +0.15 *+22−19* disagrees with +4.07 *16* from Adopted Gammas. A_2=−0.191 *18*, A_4=+0.288 *28*. Additional information 4.
[x]649.7 *2*	7							A_2=+0.34 *3*, A_4=−0.08 *4* (1971Ke13).
667.75 *7*	100	667.80	2^+	0.0	0^+	(Q)		A_2=+0.125 *4*, A_4=+0.004 *25*. Additional information 3.
726.9 *1*	8.7 *8*	2167.31	5^+	1440.40	4^+	D+Q	+0.41 *+7−8*	A_2=+0.214 *21*, A_4=+0.051 *25*. Additional information 7.
772.6 *1*	82.3 *28*	1440.40	4^+	667.80	2^+	(Q)		A_2=+0.115 *19*, A_4=+0.095 *24*. Additional information 5.
[x]863.2 *1*	5							A_2=−0.373 *16*, A_4=+0.141 *22*. Additional information 2.
[x]944.9 *2*	4							A_2=−0.51 *8*, A_4=+0.09 *11* (1971Ke13).

[†] Weighted average of 1986Li23, 1983Ba64, 1971Ke13. Uncertainties of 1986Li23 are assigned as 0.1 keV for Iγ>10% and 0.2 keV for Iγ<10% based on a general statement by the authors. Uncertainties of 1971Ke13 are assigned as 0.3 keV for all Eγ's.

[‡] Weighted average of 1986Li23, 1983Ba64, 1971Ke13. Uncertainties of 1986Li23 are assigned as 5% for Iγ>10% and 10% for Iγ<10%, based on a general statement by the authors; uncertainties of 1971Ke13 are assigned as 15% for all Iγ's.

[#] From $\gamma(\theta)$ (1986Li23).

[@] Observed by 1983Ba64 only.

[&] 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.

[x] γ ray not placed in level scheme.

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Level Scheme

Intensities: Relative I_γ

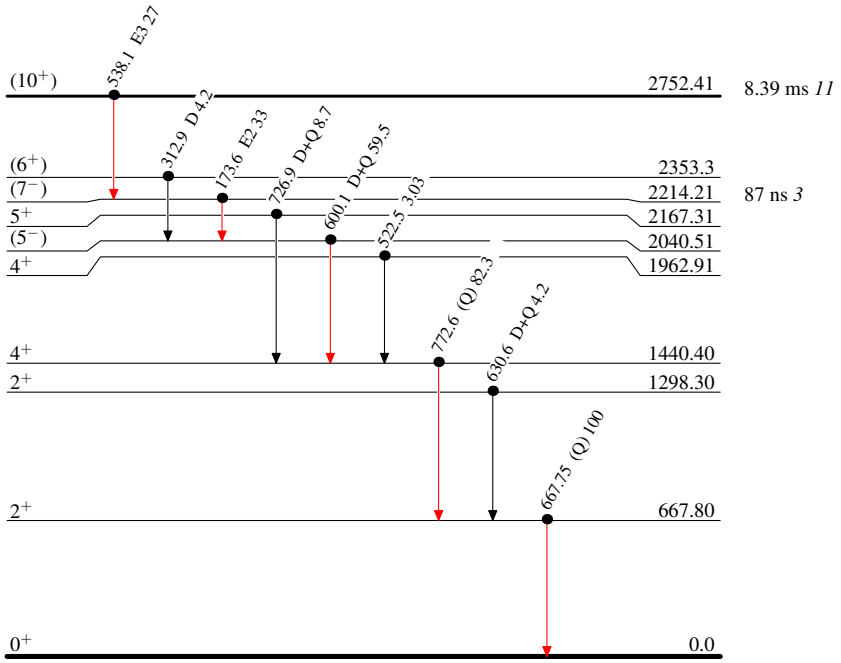
Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

Coincidence



$^{132}_{54}Xe_{78}$