^{135}Te β^- decay (19.0 s) 1985Sa15,1979Bo26,1979Ke02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Alexander A. Rodionov And Yuri L. Khazov	NDS 109,517 (2008)	22-Jan-2008

Parent: ^{135}Te: E=0.0; $J^\pi=(7/2^-)$; $T_{1/2}$=19.0 s *2*; Q(β^-)=5888 *13*; %β^- decay=100

^{135}Te-Q(β^-): from Eβ(endpoint)=4923 *13* in $\beta(870\gamma)$ coin (2007Fo02); the endpoint energy does not contain correction of 95 keV for Al window between vacuum and β detector. Other: 5960 *90* (2003Au03).

1985Sa15: Measured Eγ, Iγ, $\gamma\gamma$.

1979Bo26: Measured Eγ using bent-crystal spectrometer.

1979Ke02: Measured Eβ, Iβ.

2007Fo02: Measured $\beta\gamma$ coin, deduced Q value.

Others: 1984HiZZ, 1977Lu06, 1977Pf01, 1975Al11, 1974Gr29, 1973Bo42, 1970De15, 1969De13, 1955Wa35, 1950Gl09, 1940Do07.

Total decay energy of 5870 keV *143* calculated (by RADLIST code) from level scheme agrees with the expected value of 5888 keV *13*.

^{135}I Levels

E(level)	J^π†	E(level)	E(level)	J^π†
0.0	$7/2^+$	1516.8 *3*	2312.6 *4*	
603.68 *3*	$(5/2)^+$	1709.8 *3*	3046.4 *7*	(7/2,9/2)
870.52 *4*	$(5/2)^+$	1857.0 *5*	3357.0 *7*	
1009.94 *20*		2027.2 *4*	4313.5 *6*	(7/2,9/2)
1133.21 *19*	$(11/2^+)$	2069.15 *20*	4463.8 *5*	$(7/2^-,9/2^-)$
1183.86 *17*	$(9/2^+)$	2157.0 *5*	4772.7 *5*	$(5/2^-,7/2^-,9/2^-)$

† From 'Adopted Levels'.

β^- radiations

E(decay)	E(level)	Iβ^-†	Log *ft*	Comments
(1115 *13*)	4772.7	0.55 *6*	5.22 *6*	av Eβ=393.2 *55*
(1424 *13*)	4463.8	0.68 *6*	5.53 *5*	av Eβ=524.6 *57*
(1575 *13*)	4313.5	0.43 *5*	5.90 *6*	av Eβ=590.1 *58*
(2531 *13*)	3357.0	0.19 *3*	7.08 *7*	av Eβ=1021.8 *60*
(2842 *13*)	3046.4	0.46 *6*	6.91 *6*	av Eβ=1165.3 *61*
(3575 *13*)	2312.6	0.33 *4*	7.47 *6*	av Eβ=1507.5 *61*
(3731 *13*)	2157.0	0.30 *4*	7.59 *6*	av Eβ=1580.5 *61*
(3819 *13*)	2069.15	0.47 *4*	7.44 *4*	av Eβ=1621.7 *61*
(3861 *13*)	2027.2	0.69 *7*	7.30 *5*	av Eβ=1641.4 *61*
(4031 *13*)	1857.0	0.06 *3*	8.44 *22*	av Eβ=1721.4 *62*
(4178 *13*)	1709.8	0.32 *5*	7.78 *7*	av Eβ=1790.7 *62*
(4371 *13*)	1516.8	0.220 *23*	8.03 *5*	av Eβ=1881.5 *62*
(4704 *13*)	1183.86	0.70 *7*	7.66 *5*	av Eβ=2038.4 *62*
(4755 *13*)	1133.21	1.02 *9*	9.28^{1u} *4*	av Eβ=2042.3 *61*
(4878 *13*)	1009.94	0.187 *23*	8.30 *6*	av Eβ=2120.5 *62*
4923 *13*	870.52	12.1 *10*	6.55 *4*	av Eβ=2186.2 *62* E(decay): from $\beta(870\gamma)$ coin (2007Fo02). Others: 5090 *100* (1979Ke02), 1977Lu06.
(5284 *13*)	603.68	19.0 *15*	6.45 *4*	av Eβ=2312.2 *62* E(decay): 5410 *150* from average of values from 1979Ke02 and 1985Sa15.
(5888 *13*)	0.0	62 *3*	6.14 *2*	av Eβ=2597.1 *62* Iβ^-: other: 50 *10* (1985Sa15).

† Absolute intensity per 100 decays.

^{135}Te β^- decay (19.0 s) 1985Sa15,1979Bo26,1979Ke02 (continued)

$\gamma(^{135}I)$

Iγ normalization: from Iγ(603.7γ)/100 decays=27.9 *21* (priv comm from E. Lund to 1989Ho08). Estimate of Iβ(to g.s.)=50% *10* (1985Sa15) gives Iγ normalization=0.37 *7*.

E_γ [†]	I_γ [†#]	E_i(level)	J_i^π	E_f	J_f^π	Comments
139.5 *4*	0.40 *3*	1009.94		870.52	$(5/2)^+$	
174.8 *5*	0.15 *4*	1183.86	$(9/2^+)$	1009.94		
266.87[‡] *3*	28.0 *4*	870.52	$(5/2)^+$	603.68	$(5/2)^+$	E_γ: 266.8 *1* (1985Sa15).
312.6 *4*	0.40 *5*	1183.86	$(9/2^+)$	870.52	$(5/2)^+$	
407.4 *5*	0.14 *3*	1009.94		603.68	$(5/2)^+$	
455.6 *3*	0.41 *4*	2312.6		1857.0		
603.70[‡] *3*	100.0 *12*	603.68	$(5/2)^+$	0.0	$7/2^+$	E_γ: 603.5 *1* (1985Sa15).
647.3 *4*	0.24 *3*	1516.8		870.52	$(5/2)^+$	
870.3 *1*	20.9 *4*	870.52	$(5/2)^+$	0.0	$7/2^+$	
912.4 *4*	0.28 *2*	1516.8		603.68	$(5/2)^+$	
1009.8 *3*	0.28 *2*	1009.94		0.0	$7/2^+$	
1107.0 *7*	0.80 *12*	1709.8		603.68	$(5/2)^+$	
1133.3 *2*	4.70 *15*	1133.21	$(11/2^+)$	0.0	$7/2^+$	
1183.9 *2*	2.40 *9*	1183.86	$(9/2^+)$	0.0	$7/2^+$	
1198.6 *2*	1.07 *5*	2069.15		870.52	$(5/2)^+$	
1253.3 *14*	0.36 *8*	1857.0		603.68	$(5/2)^+$	
1336.6 *9*	0.55 *9*	3046.4	(7/2,9/2)	1709.8		
1423.3 *7*	0.30 *3*	2027.2		603.68	$(5/2)^+$	
1442.4 *4*	0.65 *2*	2312.6		870.52	$(5/2)^+$	
1465.6 *5*	0.62 *2*	2069.15		603.68	$(5/2)^+$	
1516.3 *5*	0.27 *4*	1516.8		0.0	$7/2^+$	
1554.5 *15*	0.17 *4*	2157.0		603.68	$(5/2)^+$	
1709.6 *3*	0.90 *4*	1709.8		0.0	$7/2^+$	
1856.3 *18*	0.26 *6*	1857.0		0.0	$7/2^+$	
1913.1 *9*	0.43 *8*	3046.4	(7/2,9/2)	1133.21	$(11/2^+)$	
2027.2 *4*	2.16 *17*	2027.2		0.0	$7/2^+$	
2156.8 *6*	1.14 *11*	2157.0		0.0	$7/2^+$	
2176.0 *19*	0.66 *9*	3046.4	(7/2,9/2)	870.52	$(5/2)^+$	
2311.2 *9*	0.12 *7*	2312.6		0.0	$7/2^+$	
2487.1 *9*	0.53 *8*	3357.0		870.52	$(5/2)^+$	
2615.5 *8*	0.22 *3*	4772.7	$(5/2^-,7/2^-,9/2^-)$	2157.0		
2752.6 *9*	0.14 *4*	3357.0		603.68	$(5/2)^+$	
3181.6 *8*	0.21 *2*	4313.5	(7/2,9/2)	1133.21	$(11/2^+)$	
3279.9 *7*	0.45 *2*	4463.8	$(7/2^-,9/2^-)$	1183.86	$(9/2^+)$	
3330.8 *7*	0.40 *2*	4463.8	$(7/2^-,9/2^-)$	1133.21	$(11/2^+)$	
3441.7 *8*	1.02 *9*	4313.5	(7/2,9/2)	870.52	$(5/2)^+$	
3709.5 *15*	0.31 *6*	4313.5	(7/2,9/2)	603.68	$(5/2)^+$	
3902.6 *9*	0.73 *6*	4772.7	$(5/2^-,7/2^-,9/2^-)$	870.52	$(5/2)^+$	
4168.8 *12*	0.82 *13*	4772.7	$(5/2^-,7/2^-,9/2^-)$	603.68	$(5/2)^+$	
4463.4 *9*	1.59 *6*	4463.8	$(7/2^-,9/2^-)$	0.0	$7/2^+$	
4772.3 *8*	0.20 *4*	4772.7	$(5/2^-,7/2^-,9/2^-)$	0.0	$7/2^+$	

[†] From 1985Sa15, unless otherwise stated.
[‡] From 1979Bo26, bent-crystal spectrometer.
[#] For absolute intensity per 100 decays, multiply by 0.279 *21*.

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays