Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	K. Kitao, Y. Tendow and A. Hashizume	NDS 96,241 (2002)	1-Dec-2001

Q(β^-)=−5615 *15*; S(n)=10258 *9*; S(p)=7183 *9*; Q(α)=−267 *4* 2012Wa38
Note: Current evaluation has used the following Q record −5615 1510296 137221 13-305 11 1995Au04.

^{120}Te Levels

Cross Reference (XREF) Flags

A	^{120}I ε decay (53 min)	E	^{118}Sn(α,2nγ)	I	^{121}Sb(p,2nγ)
B	^{120}I ε decay (81.6 min)	F	^{119}Sn(α,3nγ)	J	^{122}Te(p,t)
C	^{117}Sn(α,nγ),^{110}Pd(^{13}C,3nγ)	G	^{120}Sn(^{3}He,3nγ)		
D	^{118}Sn(^{3}He,n)	H	Coulomb excitation		

E(level)‡	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0†	0$^+$	stable	ABCDEFGHIJ	
560.438† *20*	2$^+$	9.3 ps *19*	ABCDEFGHIJ	μ=+0.56 *8* J$^\pi$: E2 γ to 0$^+$. μ: transient field integral PAC (1989Ra17). Other: +0.78 *14* (1989Ra17). T$_{1/2}$: from B(E2)↑=0.55 *11*.
1103.10 *16*	0$^+$		BCDE IJ	XREF: D(1150). J$^\pi$: E0 transition to g.s.
1161.56† *3*	4$^+$#		ABC EFG	J$^\pi$: E2 γ to 2$^+$.
1201.27 *5*	2$^+$		ABC E I	J$^\pi$: E2 γ to 0$^+$, $\gamma(\theta)$ in (α,2nγ).
1535.08 *8*	2$^+$		BC E	J$^\pi$: M1+E2+E0 γ to 2$^+$.
1613.4 *10*	0$^+$		B D	XREF: D(1710). J$^\pi$: E0 transition to 0$^+$.
1776.23† *5*	6$^+$#		A C EF I	J$^\pi$: E2 γ to 4$^+$.
1815.12 *6*	4$^+$		ABC E	J$^\pi$: M1+E2 γ to 4$^+$, γ from 6$^+$ and γ to 2$^+$.
1863.29 *10*	3$^+$		A C E I	J$^\pi$: M1+E2 γ's to 2$^+$ and 4$^+$.
1924.40 *6*	2$^+$		BC E	J$^\pi$: E2 γ to 4$^+$, M1+E2 γ to 2$^+$, γ(linear pol) in (α,nγ) rules out J=3.
1936.6 *4*			B	
2083.06 *21*	3$^-$		AB J	J$^\pi$: L(p,t)=3.
2201.48 *5*	6$^+$		A C E	J$^\pi$: M1+E2 γ to 6$^+$, Q γ to 4$^+$ from $\gamma(\theta)$ in (α,2nγ).
2358.0 *3*			C	
2423.1?			C	
2428.1? *7*			A	
2445.6?			C	
2455.8 *3*	1$^+$		B	J$^\pi$: M1+E2 γ to 2$^+$, D γ to 0$^+$.
2461.37 *11*	3$^-$,4$^-$,5$^-$		C E	J$^\pi$: E1 γ to 4$^+$.
2519.90 *6*	6$^+$		C E	J$^\pi$: M1+E2 γ to 6$^+$; Q γ to 4$^+$ from $\gamma(\theta)$ in (α,2nγ).
2567.3 *3*	3$^-$,4$^-$,5$^-$		A	J$^\pi$: E1 γ to 4$^+$.
2612.8 *5*	2$^+$		B	J$^\pi$: γ to 0$^+$, M1+E2 γ to 3$^+$.
2652.97† *6*	8$^+$#		C E I	
2689.9 *10*	(2$^+$)		B	J$^\pi$: (M1+E2) γ to 2$^+$, $\gamma(\theta)$ from oriented nuclei rules out J=1,3.
2748.5 *10*	(2$^+$)		B	J$^\pi$: (M1+E2) γ to 2$^+$, $\gamma(\theta)$ from oriented nuclei rules out 1$^+$,3$^+$.
2807.3 *3*			C	
2835.34 *9*	(8$^+$)		C E	J$^\pi$: E2 γ to 6$^+$, no γ to 4$^+$; $\gamma(\theta)$ from oriented nuclei rules out 7$^+$.
2877.63 *13*	(6)$^-$		C E	J$^\pi$: M1+E2 γ to 5$^-$, no γ to 4$^+$.
2899.20 *7*	(7)$^-$		C E	J$^\pi$: E1 γ to 6$^+$, no γ to 4$^+$.
2936.8 *4*	2$^+$		B	J$^\pi$: M1+E2 γ to 2$^+$, $\gamma(\theta)$ from oriented nuclei supports a E2 γ to 4$^+$.
2940.28 *7*	(7)$^+$		C E	J$^\pi$: M1+E2 γ to 6$^+$, no γ to 4$^+$.
2964.2 *5*	2$^+$,3$^+$		B	J$^\pi$: M1+E2 γ's to 2$^+$ and 3$^+$.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{120}Te Levels (continued)

E(level)‡	Jπ	XREF	Comments
3030.56 *8*	$(7)^-$	C E	Jπ: E1 γ to 6^+, no γ to 4^+.
3036.3 *10*	(4^+)	B	Jπ: γ(θ) from oriented nuclei.
3039.26 *7*	$(8)^+$	C E	Jπ: E2 γ to 6^+, no γ to 4^+.
3052.2 *7*	2,3	B	Jπ: ΔJ=1 γ to 2^+, γ(θ) from oriented nuclei rules out J=1.
3122.7 *4*		A	
3130.85 *9*	$(9)^+$	C E	Jπ: M1+E2 γ to 8^+, no γ to 6^+.
3136.1 *10*	$(2,3)^+$	B	Jπ: γ(θ) from oriented nuclei.
3142.17 *7*	(8^-)	C E	Jπ: M1+E2 γ to (7^-), no γ's to 3^-, 4^+.
3163.0 *20*	$1^+,2^+,3^+$	B	Jπ: M1+E2 γ to 2^+.
3255.9 *15*	$3,4^+$	B	Jπ: ΔJ=1 γ to 4^+, log $f^{1u}t$=9.00 from 2^- does not allow 4^- and 5^-.
3286.2 *5*	$(2,3)^+$	B	Jπ: log *ft*=7.18 from 2^-, (M1+E2) γ to $(3)^+$.
3341.6 *10*	$2^+,3$	BC	
3364.30 *7*	(10^+)	C E	Jπ: E2 γ to 8^+, no γ to 6^+.
3366.4 *6*	1,2,3	B	Jπ: log *ft*=7.13 from 2^-.
3371.7 *15*	2^+	B	Jπ: γ(θ) from oriented nuclei.
3374.20 *8*	(9^-)	C E	Jπ: E1 γ to (8^+), no γ to 6^+.
3399.74 *8*	(9^-)	C E	Jπ: E1 γ to (8^+), no γ to 6^+.
3487.41 *10*	(10^+)	C E	Jπ: M1+E2 γ to 9^+, no γ to (7^+).
3493.9 *5*	2^+	B	Jπ: γ(θ) from oriented nuclei.
3543.59† *9*	(10^+)#	C E	
3567.27 *12*		E	
3665.9 *5*	$(2,3)^+$	B	Jπ: from γ(θ) from oriented nuclei.
3672.1 *6*		B	
3765.7 *10*	$(2^+,3^+)$	B	Jπ: γ(θ) from oriented nuclei.
3813.61 *9*	(10^-)	C E	Jπ: E2 γ to (8^-), no γ to (7^-).
3881.49 *12*	11^+	E	
3886.8 *11*	$(2^+,3^+)$	B	Jπ: γ(θ) from oriented nuclei.
4086.39 *9*	(11^-)	C E	Jπ: E1 γ to (10^-), no γ to (8^+).
4092.91 *9*	(12^+)	C E	Jπ: stretched E2 γ to (10^+).
4459.79† *13*	(12^+)#	C E	
4503.26 *11*	(12^-)	E	Jπ: E2 γ to (10^-), no's γ to (8^-) and (9^-).
4815.3		E	
4818.72 *13*	(14^+)	C E	Jπ: stretched E2 γ to (12^+).
5345.12 *16*	(16^+)	C E	Jπ: stretched E2 γ to (14^+).
6039.1 *6*		C	

† Band(A): ground-state ΔJ=2 band.

‡ From a least-squares fit to the adopted E(γ's) by the evaluators.

Cascading γ's and from an expected band structure.

Adopted Levels, Gammas (continued)

γ(^{120}Te)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ[a]	α[b]	Comments
560.438	2+	560.44 *2*	100	0.0	0+	E2			B(E2)(W.u.)=31 *6*
1103.10	0+	542.8[‡] *3*	100	560.438	2+				
		1103.2 *2*		0.0	0+	E0			
1161.56	4+	601.11 *2*	100	560.438	2+	E2			E_γ: other: 603 *5* (α,2nγ).
1201.27	2+	640.85 *5*	100 *5*	560.438	2+	M1+E2	−0.92 *9*		δ: other: −2.4 *16* in ε decay (81.6 min).
		1201.2 *1*	27 *3*	0.0	0+	E2			
1535.08	2+	334.0[@] *10*	5.0[@] *8*	1201.27	2+	M1+E2		0.0268 *7*	δ: −0.36 *3* or 13 *+6−3*.
		433.0[@] *5*	20[@] *4*	1103.10	0+	E2		0.0124	
		974.64 *8*	92 *8*	560.438	2+	E0+M1+E2	<−0.05		I_γ: from ε decay (81.6 min). δ: other: −3.3 *27* in ε decay (81.6 min).
		1534.9[@] *5*	100[@] *9*	0.0	0+	(E2)			
1613.4	0+	511[@c]	[@]	1103.10	0+	E0			
		1053.0[@] *10*	100[@]	560.438	2+				
		1614[@c]	[@]	0.0	0+	E0			
1776.23	6+	614.62 *4*	100	1161.56	4+	E2			E_γ: 614.0 in ε decay (81 min).
1815.12	4+	613.8 *4*	87 *26*	1201.27	2+	(E2)			E_γ: other: 614.0 in ε decay (81.6 min).
		653.54[@] *5*	100[@] *6*	1161.56	4+	M1+E2	−0.56 *+28−37*		δ: other: −0.44 *+20−26* in ε decay (81.6 min).
		1255.4[@] *6*	32[@] *6*	560.438	2+				
1863.29	3+	662.0 *1*	100 *10*	1201.27	2+	M1+E2			I_γ,Mult.: from ^{120}I ε decay (81.6 min).
		701.4[@] *5*	35[@] *7*	1161.56	4+	M1+E2	−2.2 *18*		I_γ: other: 18 in (p,2nγ). Mult.: from ^{120}I ε decay (81.6 min).
		1303.1 *2*	88 *9*	560.438	2+	M1+E2	0.17 *+15−16*		I_γ: others: 55 in (p,2nγ); 100 *50* in (α,nγ),(^{13}C,3nγ).
1924.40	2+	762.80 *5*	59 *4*	1161.56	4+	E2			I_γ: others: 100 *33* in (α,nγ),(^{13}C,3nγ); 65 in ε decay (81.6 min).
		1364.1 *1*	100 *10*	560.438	2+	M1(+E2)	−0.14 *+14−5*		
1936.6		735.3[@] *4*	100[@]	1201.27	2+				
2083.06	3−	881.8[@] *5*	2.5[@] *5*	1201.27	2+				I_γ: other: 6.4 *9* in ε decay (53 min).
		921.3[@] *4*	3.4[@] *7*	1161.56	4+				I_γ: other: <6.4 in ε decay (53 min).
		1523.0[@] *4*	100[@] *7*	560.438	2+				
2201.48	6+	385.0[@] *5*	12[@] *2*	1815.12	4+				
		425.23 *3*	56 *2*	1776.23	6+	M1+E2	+0.14 *+5−7*	0.0141	I_γ: others: 43 *8* in ε decay (53 min), 48 *5* in (α,nγ),(^{13}C,3nγ). δ: other: 0.40 *64* in ε decay (53 min).
		1040.02 *6*	100 *5*	1161.56	4+	E2			
2358.0		1196.4[‡] *3*	100	1161.56	4+				
2423.1?		1261.2[‡c] *3*	100	1161.56	4+				

Adopted Levels, Gammas (continued)

γ(^{120}Te) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ[a]	α[b]	Comments
2428.1?		651.9[#c] *5*	100[#]	1776.23	6^+				
2445.6?		1283.7[‡c] *3*	100	1161.56	4^+				
2455.8	1^+	529.0[@] *10*	11[@] *2*	1924.40	2^+				
		921.3[@] *4*	13[@] *3*	1535.08	2^+				
		1255.4[@] *6*	42[@] *8*	1201.27	2^+				
		1895.0[@] *10*	36[@] *7*	560.438	2^+	M1+E2			
		2454.8[@] *5*	100[@] *10*	0.0	0^+	D			
2461.37	$3^-,4^-,5^-$	1299.8 *1*	100 *8*	1161.56	4^+	E1			
2519.90	6^+	704.77 *7*	58 *4*	1815.12	4^+	E2			
		743.65 *6*	100 *5*	1776.23	6^+	M1+E2	0.90 *20*		
		1358.6 *2*	24 *10*	1161.56	4^+	E2			
2567.3	$3^-,4^-,5^-$	1405.0[#] *5*	100[#] *10*	1161.56	4^+	E1			
2612.8	2^+	529.0[@] *10*	3.1[@] *6*	2083.06	3^-				
		749.0[@] *10*	22[@] *5*	1863.29	3^+	M1+E2			
		1451.7[@] *7*	100[@] *20*	1161.56	4^+	E2			
		2613.0[@] *10*	56[@] *11*	0.0	0^+	(E2)			
2652.97	8^+	876.73 *4*	100	1776.23	6^+				
2689.9	(2^+)	2129.4[@] *10*	100[@]	560.438	2^+	(M1+E2)			
2748.5	(2^+)	2188.0[@] *10*	100[@] *10*	560.438	2^+	(M1+E2)			
2807.3		1031.1[‡] *3*	100	1776.23	6^+				
2835.34	(8^+)	634.0[‡] *5*		2201.48	6^+				
		1059.10 *7*	100 *3*	1776.23	6^+	E2			
2877.63	$(6)^-$	416.26 *7*	100 *5*	2461.37	$3^-,4^-,5^-$	M1+E2	−0.25 *+8−9*	0.0148	
		1101.3[‡c] *3*		1776.23	6^+				
2899.20	$(7)^-$	1122.93 *8*	100 *6*	1776.23	6^+	E1			
2936.8	2^+	853.3[@] *5*	22[@] *4*	2083.06	3^-				
		1074.0[@] *10*	70[@] *14*	1863.29	3^+				
		1325.0[@c] *10*	[@]	1613.4	0^+				
		1402.1[@] *7*	64[@] *13*	1535.08	2^+				
		1775.8[@] *10*	100[@] *10*	1161.56	4^+	E2			
		2378.4[@] *15*	98[@] *10*	560.438	2^+	M1+E2			
2940.28	$(7)^+$	1164.05 *9*	100 *10*	1776.23	6^+	M1+E2	−0.45 *+3−14*		
2964.2	$2^+,3^+$	1101.0[@] *5*	38[@] *7*	1863.29	3^+	M1+E2			
		2403.2[@] *10*	100[@] *10*	560.438	2^+	M1+E2			
3030.56	$(7)^-$	1254.36 *9*	100	1776.23	6^+	E1			E_γ: other: 1254.8 *3* in (α,nγ),(^{13}C,3nγ).

Adopted Levels, Gammas (continued)

γ(^{120}Te) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[&]	δ[a]	α[b]	Comments
3036.3	(4$^+$)	1874.7[@] *10*	100[@]	1161.56	4$^+$	(M1+E2)			
3039.26	(8)$^+$	837.79 *5*	100	2201.48	6$^+$	E2			
3052.2	2,3	969.1[@] *8*	100[@] *10*	2083.06	3$^-$				
		2491.8[@] *10*	66[@] *7*	560.438	2$^+$	D(+Q)			
3122.7		694.4[#c] *7*	3[#] *1*	2428.1?					
		921.3[#c] *4*	<23[#]	2201.48	6$^+$				
		1345.9[#] *4*	100[#] *7*	1776.23	6$^+$				
3130.85	(9)$^+$	295.51 *3*	100	2835.34	(8$^+$)	M1+E2	+0.25 *+6−2*	0.0362 *1*	E_γ: other: 296.0 *3* in (α,nγ),(^{13}C,3nγ).
3136.1	(2,3)$^+$	1601.0[@] *10*	100[@]	1535.08	2$^+$	(M1+E2)			
3142.17	(8$^-$)	111.63 *5*	100 *4*	3030.56	(7)$^-$	M1+E2	0.20 *+9−7*	0.53 *3*	E_γ: other: 112.1 *3* in (α,nγ),(^{13}C,3nγ).
		201.89 *3*	44 *2*	2940.28	(7)$^+$	E1+M2	−0.09 *+9−4*	0.032 *13*	
		242.97 *3*	77 *3*	2899.20	(7)$^-$	M1+E2	1.0 *2*	0.069 *2*	
3163.0	1$^+$,2$^+$,3$^+$	2602.5[@] *20*	100[@]	560.438	2$^+$	M1+E2			
3255.9	3,4$^+$	2094.3[@] *15*	100[@]	1161.56	4$^+$	D(+Q)			
3286.2	(2,3)$^+$	1422.9[@] *5*	100[@]	1863.29	3$^+$	(M1+E2)			
3341.6	2$^+$,3	2180.0[@] *10*	100[@]	1161.56	4$^+$				
3364.30	(10$^+$)	325.04 *3*	100 *3*	3039.26	(8)$^+$	E2		0.0299	
		711.3 *1*	20 *3*	2652.97	8$^+$	E2			I_γ: other: <53 in (α,nγ),(^{13}C,3nγ).
3366.4	1,2,3	1283.4[@] *7*	35[@] *7*	2083.06	3$^-$				
		2165.0[@] *10*	100[@] *21*	1201.27	2$^+$				
3371.7	2$^+$	2811.2[@] *15*	100[@]	560.438	2$^+$	M1+E2			
3374.20	(9$^-$)	721.21 *6*	100 *2*	2652.97	8$^+$	E1			
3399.74	(9$^-$)	746.77 *6*	100	2652.97	8$^+$	E1			
3487.41	(10$^+$)	356.56 *4*	100	3130.85	(9)$^+$	M1+E2	+0.29 *+14−8*	0.0221	
3493.9	2$^+$	1410.9[@] *5*	100[@] *10*	2083.06	3$^-$	(E1)			
		2932.9[@] *15*	68[@] *14*	560.438	2$^+$	M1+E2			
3543.59	(10$^+$)	890.63 *7*	100 *7*	2652.97	8$^+$	E2			
3567.27		914.3 *1*	100	2652.97	8$^+$				
3665.9	(2,3)$^+$	729.2[@] *4*	13[@] *3*	2936.8	2$^+$				
		2462.8[@] *15*	100[@] *10*	1201.27	2$^+$	D			
3672.1		735.3[@] *4*	100[@]	2936.8	2$^+$				
3765.7	(2$^+$,3$^+$)	2564.4[@] *10*	100[@]	1201.27	2$^+$	(M1+E2)			
3813.61	(10$^-$)	671.43 *5*	100	3142.17	(8$^-$)	E2			
3881.49	11$^+$	394.08 *7*	100	3487.41	(10$^+$)	M1+E2	+0.40 *+38−20*	0.0170 *2*	
3886.8	(2$^+$,3$^+$)	950.0[@] *10*	100[@]	2936.8	2$^+$	(M1+E2)			

$^{120}_{52}Te_{68}$-5

Adopted Levels, Gammas (continued)

γ(^{120}Te) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. &	Comments
4086.39	(11$^-$)	542.82 *8*	46 *8*	3543.59	(10$^+$)	E1	
		686.65 *5*	64 *6*	3399.74	(9$^-$)	E2	
		712.0 *2*	100 *17*	3374.20	(9$^-$)	E2	
4092.91	(12$^+$)	728.61 *5*	100	3364.30	(10$^+$)	E2	
4459.79	(12$^+$)	916.2 *1*	100	3543.59	(10$^+$)	E2	E_γ: other: 915.0 *5* in (α,nγ),(^{13}C,3nγ).
4503.26	(12$^-$)	689.65 *7*	100	3813.61	(10$^-$)	E2	
4815.3		729.0[c]		4086.39	(11$^-$)		
4818.72	(14$^+$)	725.8 *1*	100 *7*	4092.91	(12$^+$)	E2	
5345.12	(16$^+$)	526.40 *9*	100 *29*	4818.72	(14$^+$)	E2	E_γ: other: 525.9 *3* in (α,nγ),(^{13}C,3nγ).
6039.1		694.0‡ *5*		5345.12	(16$^+$)		

† From (α,2nγ), unless otherwise noted.
‡ From (α,nγ),(^{13}C,3nγ).
# From ε decay (53 min).
@ From ε decay (81.6 min).
& From α(K)exp, $\gamma(\theta)$ and γ-ray linear polarization in (α,2nγ) and (α,nγ),(^{13}C,3nγ).
[a] From $\gamma(\theta)$. Values are from (α,2nγ), unless otherwise noted.
[b] 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.
[c] Placement of transition in the level scheme is uncertain.

$^{120}_{52}Te_{68}$-6

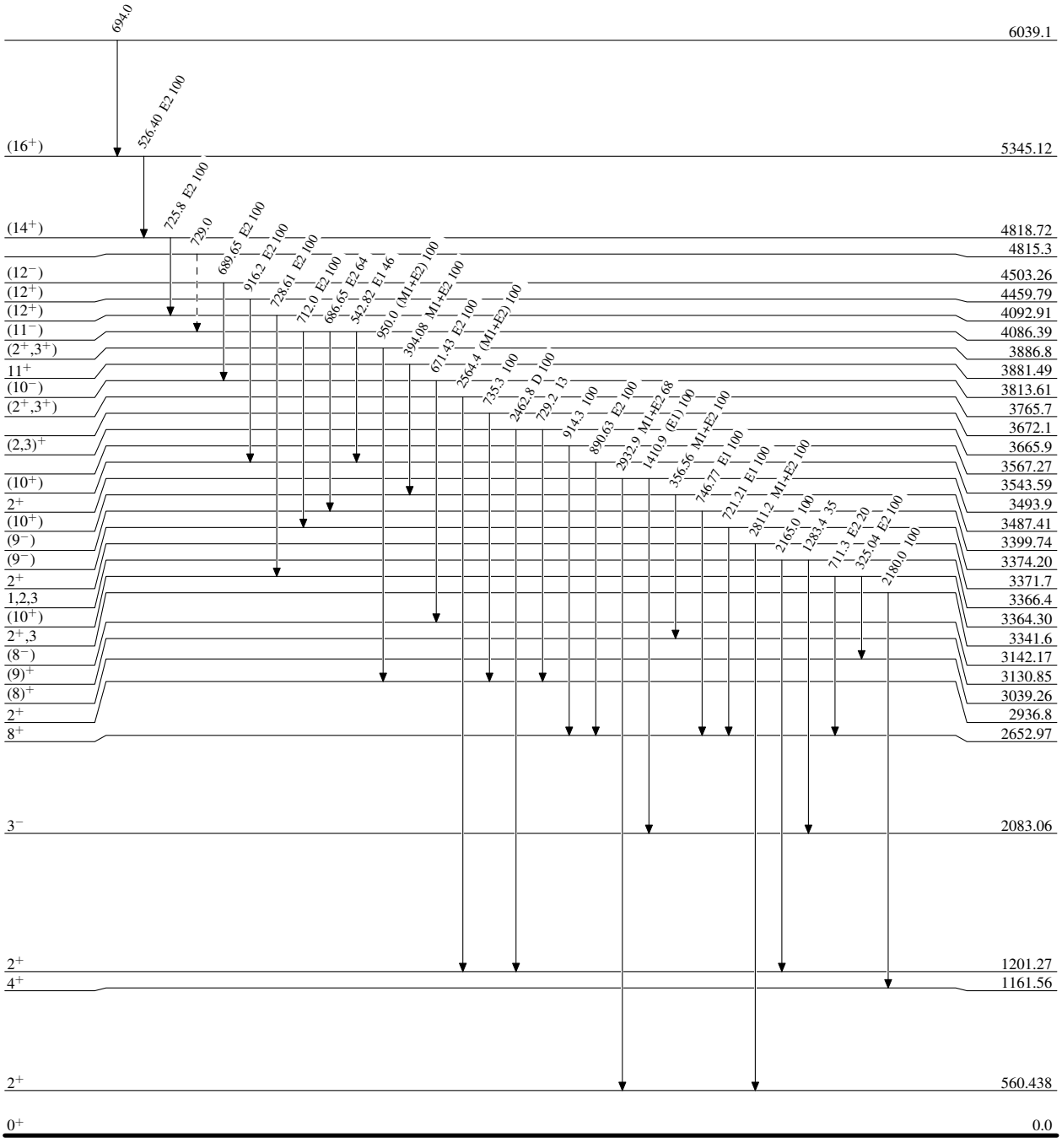
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{120}_{52}Te_{68}$

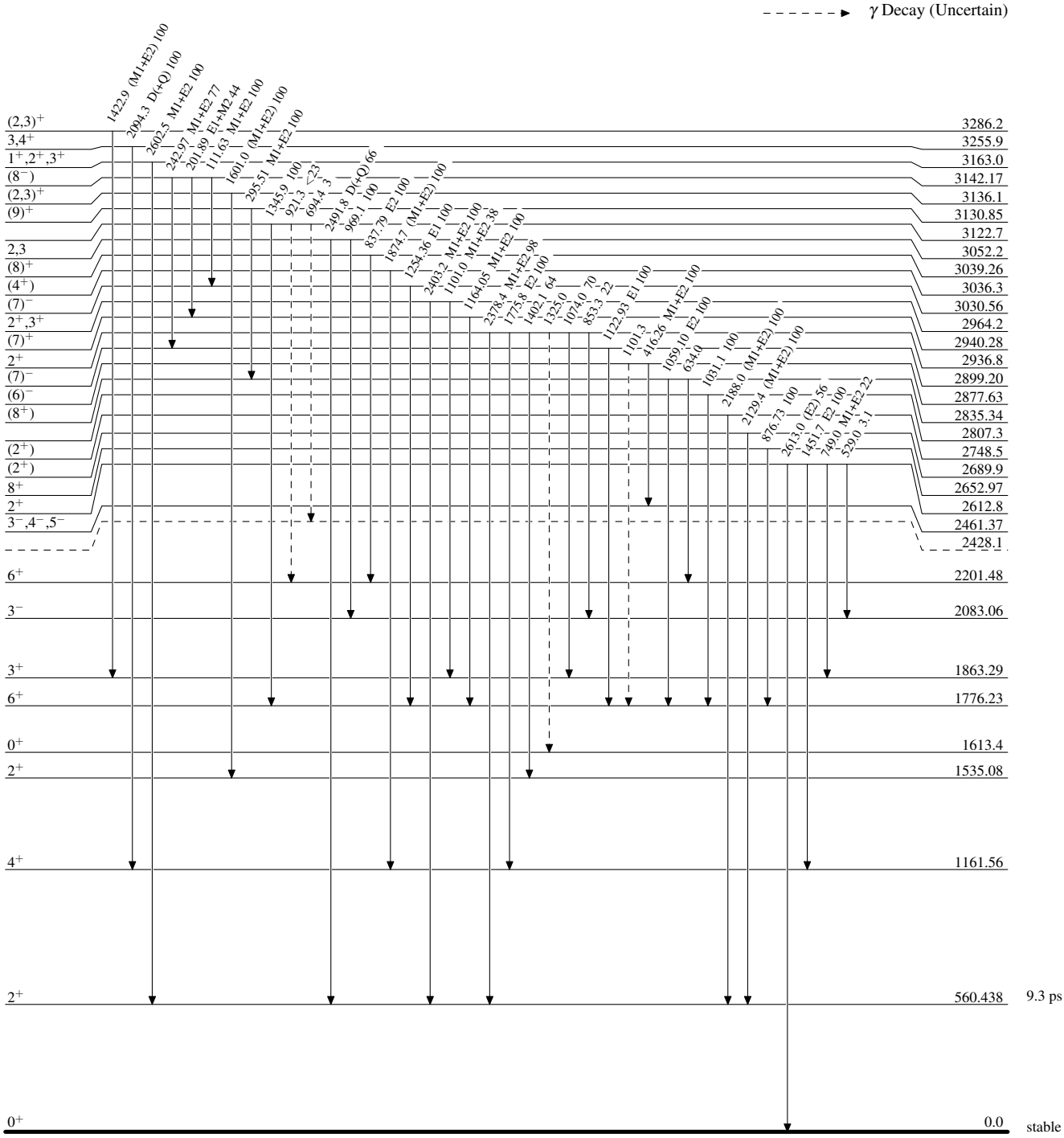
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{120}_{52}Te_{68}$

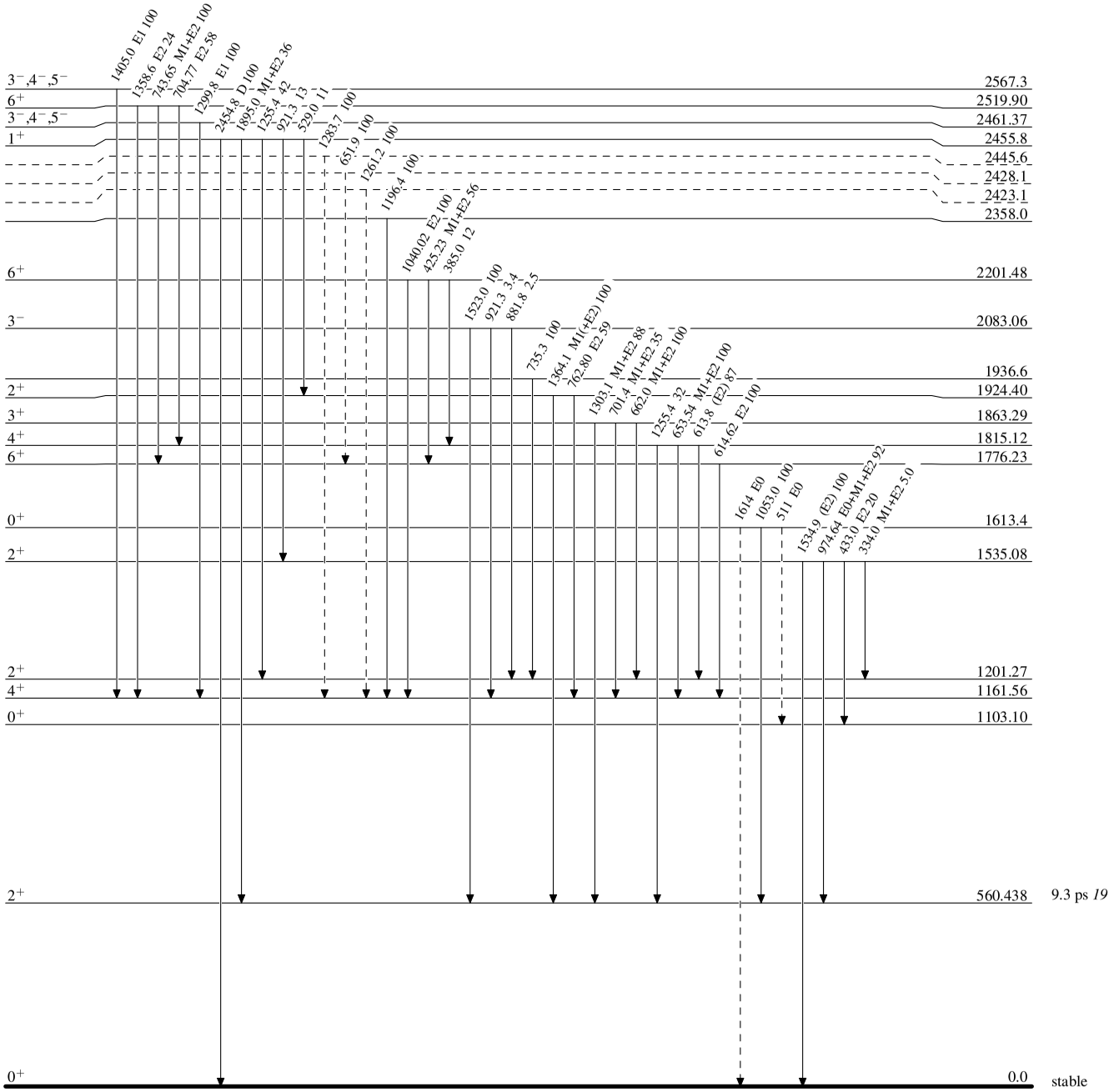
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)

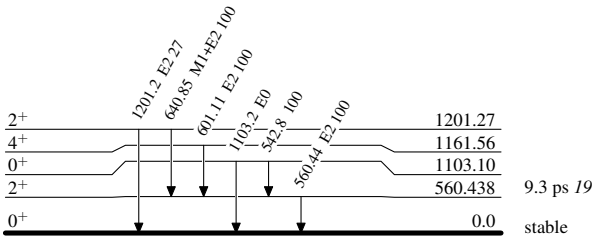


$^{120}_{52}Te_{68}$

Adopted Levels, Gammas

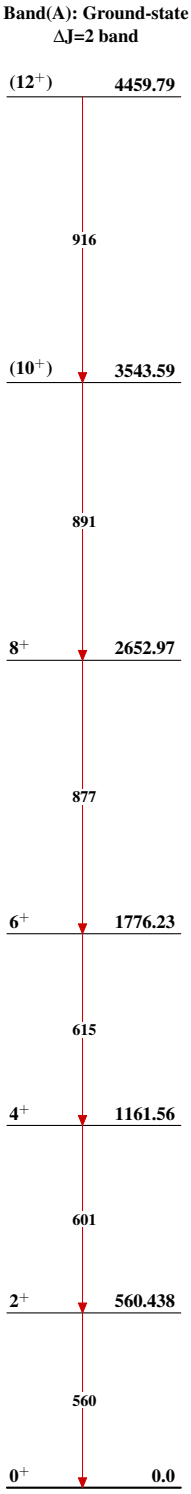
Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{120}_{52}Te_{68}$

Adopted Levels, Gammas



$^{120}_{52}Te_{68}$