Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 110,999 (2009)	1-Nov-2008

Q(β^-)=−9.22×10^3 *4*; S(n)=1.133×10^4 *7*; S(p)=−1010 *16*; Q(α)=7779 *4* 2012Wa38
Note: Current evaluation has used the following Q record −8500 1128E1 8 −1019 *19* 7789 14 2003Au03.
Q(β^-): Calculated by 1997Mo25.

^{187}Bi Levels

Cross Reference (XREF) Flags

A ^{191}At α decay (1.7 ms)
B ^{191}At α decay (2.1 ms)
C ^{107}Ag(^{83}Kr,3nγ),

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	XREF	Comments
0.0	(9/2$^-$)	37 ms *2*	BC	%α=100 %α: From 2006An11 − source of value is not clear. Other: %$\alpha\geq$50 − value adopted in 1985Co06; source of value unclear. Gross β decay theory calculations predict partial β halflife to Be ≈4 s (1973Ta30) or 2.4 s (1997Mo25), implying %ε+%$\beta^+\approx$0.8 or 1.3, respectively, and hence %$\alpha\approx$99. $T_{1/2}$: Weighted average of 40 ms *2* (7000α(t)−2006An11), 32 ms *3* (7000α(t)−1999Ba45), 45 ms *11* (7000α(t)- 2002Hu14), 35 ms *4* (6986α(t)- 1984ScZQ). Others: 35 ms *+14−8* (6994α(t) and 7605α(t) 2003Ke08), 25 ms *+9−5* (7612α(t), 1999Ba45), 21 ms *+29−8* (7367α(t), 1999Ba45).
63 *10*	(7/2$^-$)		B	E(level): Deduced from the shape of the α-decay spectrum and simulation (^{191}At α decay (2.1 ms)). J$^\pi$: From systematics of the heavier odd-mass ^{189}Bi and ^{191}Bi isotopes and simulation results (2003Ke08).
112 *20*	(1/2$^+$)	0.370 ms *20*	A C	%α=100 %α: From 2006An11 − source of value is not clear. Other: %$\alpha\geq$50 − value adopted in 1985Co06; source of value unclear. $T_{1/2}$: From 7721α(t)−2006An11. Others: 0.29 ms *+9−5* (7721α(t)- 1999Ba45), 0.31 ms *+19−9* (7552α(t) (2003Ke08)), 0.8 ms *6* for an E=7583 *10* α (1984ScZQ), this α is absent in 2003Ke08 and 1999Ba45; assignment of this α is questionable. E(level): Using Eα=7721 *15* from this level to ^{183}Tl(g.s.) and Eα=7612 *15* from ^{187}Bi(g.s.) to ^{183}Tl(g.s.) in 1999Ba45. Eα=7714 *15* (2003Ke08). Consistent with observed smooth decrease of E(s$_{1/2}$) state in Bi with decreasing N.
252[#]	(13/2$^+$)	3.2 μs *+76−20*	C	J$^\pi$: Supported by the measured value of $T_{1/2}$ considering the characteristics of the low energy M2 transitions for isomeric states in this mass region. $T_{1/2}$: Deduced from four 252γ events using the procedure described in 1984Sc13 to deduce lifetimes from a small number of events.
450[#]	(17/2$^+$)		C	
720[#]	(21/2$^+$)		C	
1063[#]	(25/2$^+$)		C	

[†] From γ-ray energies, assuming ΔE=1 keV for all γ-rays, except otherwise noted.
[‡] From systematics of h$_{9/2}$ and s$_{1/2}$ 2p-1h states in odd-A Bi isotopes and Band assignment.
[#] Band(A): π i$_{13/2}$ band (tentative).

Adopted Levels, Gammas (continued)

$\gamma(^{187}Bi)$

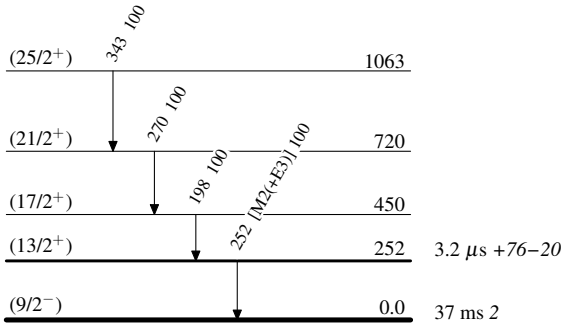
E_i(level)	J_i^π	E_γ †	I_γ	E_f	J_f^π	Mult.	Comments
252	$(13/2^+)$	252	100	0.0	$(9/2^-)$	[M2(+E3)]	Mult.: From characteristics of the low energy M2 transitions for isomeric states in this mass region.
450	$(17/2^+)$	198	100	252	$(13/2^+)$		
720	$(21/2^+)$	270	100	450	$(17/2^+)$		
1063	$(25/2^+)$	343	100	720	$(21/2^+)$		

† From $^{107}Ag(^{83}Kr,3n\gamma)$.

Adopted Levels, Gammas

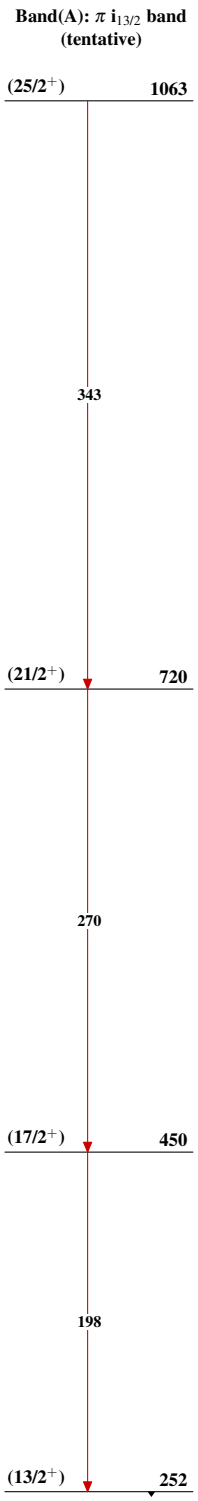
Level Scheme

Intensities: Relative photon branching from each level



$^{187}_{83}Bi_{104}$

Adopted Levels, Gammas



$^{187}_{83}Bi_{104}$