Adopted Levels

History Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111,275 (2010)	1-Oct-2009

S(p)=−1.47×10^3 *9*; Q(α)=8.02×10^3 *5* 2012Wa38

Note: Current evaluation has used the following Q record −1.33E3 13 *8020* 50 2003Au03,2009AuZZ.

Uncertainty is 130 in S(p) (2003Au03).

Q(α): The value recommended in 2003Au03 assumes that the highest-energy α (7850 keV) emitted by ^{184}Bi is within 50 keV of the g.s. to g.s. α transition energy.

Production: ^{93}Nb(^{94}Mo,3n), E(^{94}Mo)=444 MeV; pulsed beam; evaporation residues separated by velocity filter SHIP and implanted in position sensitive Si detector; coaxial HPGe detector; measured excit (434-461 MeV), Eα, Eγ, $\alpha\gamma$(t), recoil-α-γ, recoil-α-α (2003An27, 2003AnZZ).

^{184}Bi Levels

E(level)	$T_{1/2}$ †	Comments
0.0+x	13 ms *2*	%α≈100 %α: α decay was observed, proton decay was not (2003An27). Based on gross β-decay calculations (1973Ta30), the partial β halflife is ≈1 s implying %ε+%β^+≈1.3%. J$^\pi$: the strongest α's associated with ^{184}Bi decay appear to Be unhindered (2003An27) and have Eα consistent with extrapolated Eα values from 10$^-$ and 3$^+$ isomers known in heavier even-A Bi isotopes. This favors J^π=10$^-$ and 3$^+$ for the observed ^{184}Bi isomers. $T_{1/2}$: from complex structure containing contributions from many α groups with Eα=7120-7350 (2003An27). Other $T_{1/2}$: 14 ms *+6−4* from 7194α(t) (2003An27). 7194α from this level is coincident with ^{180}Tl(124γ) (2003An27).
0.0+y	6.6 ms *15*	%α≈100 %α: α decay was observed, proton decay was not (2003An27). Based on gross β-decay calculations (1973Ta30), the partial β halflife is ≈1 s implying %ε+%β^+≈0.7%. J$^\pi$: see comment on J^π(0.0+x). $T_{1/2}$: from summed statistics for shorter-lived α groups (2003An27) (authors report $T_{1/2}$=8.1 ms *+30−22* from 7445α(t), $T_{1/2}$=6.7 ms *+30−22* from possible (7730α-7850α)(t) and $T_{1/2}$=4.6 ms *+19−13* from 7220α-449γ(t)). 7220α from this level is coincident with ^{180}Tl(449γ) (2003An27).

† From α(t) (2003An27).