^{197}Bi α decay (5.15 min) 1985Co06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 143, 1 (2017)	31-Mar-2017

Parent: ^{197}Bi: E=533 *12*; J^π=(1/2$^+$); $T_{1/2}$=5.15 min *55*; Q(α)=5365 *11*; %α decay=55 *40*

^{197}Bi-E: From 2017Au03.

^{197}Bi-$T_{1/2}$: From 1985Co06.

Sources from ^{14}N bombardments of Ir, ^{16}O bombardments of Re, and ^{20}Ne bombardments of ^{181}Ta, mass separation; measured Eα, Iα, time-sequential α and γ spectra.

Others: 1974Le02, 1972Ga27, 1970Ta14, 1950Ne77.

^{193}Tl Levels

E(level)	J^π	$T_{1/2}$	Comments
0.0	1/2$^{(+)}$	21.6 min *8*	J^π: From Adopted Levels.

α radiations

Eα	E(level)	Iα[†]	Comments
5776 *4*	0.0	100	Eα: From 1991Ry01, based on 5780 *5* (1985Co06), 5770 *10* (1974Le02), 5770 *10* (1972Ga27); other: 1970Ta14. HF: r_0(^{193}Tl)=1.50 *1* Value for r_0 suggested by neighboring Pb isotone, with r_0(^{194}Pb)=1.496 *3* (1998Ak04) The quoted radius value gives HF=0.15 for this decay. Since HF<<1 is not expected in odd-A nuclei, one must question the input to HF calculation. The two uncertain quantities are the nuclear radius, r_0, and %α from ^{197}Bi. In order to obtain an HF≈1 one would have to use r_0=1.59 which is unreasonably large for this region. Using r_0=1.49, based on overall systematic trends for r_0, an alpha branch of %α≈12 gives a HF≈1.0. It seems, therefore, that %α=55 *40* quoted in 1985Co06 may be too large.

[†] For absolute intensity per 100 decays, multiply by 0.55 *40*.