
 ^{182}Tl α decay [1986Ke03](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	E. Achterberg, O. A. Capurro, G. V. Marti		NDS 110,1473 (2009)	31-May-2008

Parent: ^{182}Tl : $E \approx 100$; $J^\pi = (7^+)$; $T_{1/2} = 2.9 \text{ s}$ 5; $Q(\alpha) = 6550 \text{ 50}$; $\% \alpha \text{ decay} \leq 4.0$

^{182}Tl -The status of the parent state is uncertain. There are no J^π values known for the $^{178-184}\text{Tl}$ ground states. The existence of both a (2^-) and a (7^+) isomer is known for the sequence of even-A Tl isotopes with $A \geq 184$, but no experimental evidence is available establishing the order of these two levels, or if either one is the actual g.s. Only for $A=190$ and $A \geq 194$ are there direct measurements of $J=2$ for the g.s. spins. For all the lighter isotopes one relies mainly on assumptions based on an ever more uncertain extrapolation of presumed systematics. For $A \geq 186$ some support can be derived from the AME2003 atomic mass adjustment, which led the authors of [2003Au02](#) to adopt $J^\pi = (2^-)$ for the g.s., and $J^\pi = (7^+)$ for the excited isomeric state, for the even-A Tl nuclides with $A \geq 186$. These authors also extrapolate this sequence down to ^{182}Tl , on systematic grounds. The (7^+) value for the isomeric parent state with $T_{1/2} = 2.9 \text{ s}$ is supported by the observed ε decay to 6^+ and 8^+ levels in ^{182}Hg , according to [1991Bo22](#).

^{182}Tl -E(ex) adopted tentatively as excitation energy for the 2.9-s isomeric state ([2003Au02](#)). See discussion above.

^{182}Tl - $T_{1/2}$ from average of 3.1 10 s ([1991Bo22](#)), and 2.8 6 s ([1992BoZO](#)), adopted by [2003Au02](#).

^{182}Tl -Branching from [1992BoZO](#); other: $\% \alpha \approx 5$ ([1996Bu35](#)), $\% \alpha \leq 5$ ([1997Ba21](#)).

Activity produced by $^{94}\text{Mo}(^{90}\text{Zr}, 2p)$, $E = 321\text{-}390 \text{ MeV}$. Assignment to ^{182}Tl based on excitation functions.

 ^{178}Au Levels

E(level)	$T_{1/2}$	Comments
0.0	2.6 s 5	$T_{1/2}$: from Adopted values.

 α radiations

$E\alpha$	E(level)	$I\alpha^\dagger$	Comments
6406 10	0.0	100	Additional information 1.

† For absolute intensity per 100 decays, multiply by ≤ 0.04 .