

^{181}Tl α decay (2.9 s) 2009An14

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 159, 1 (2019)	30-Aug-2019

Parent: ^{181}Tl : $E=0.0$; $J^\pi=1/2^+$; $T_{1/2}=2.9$ s 1; $Q(\alpha)=6322$ 6; $\% \alpha$ decay=8.6 6

^{181}Tl - J^π : From 2017Ba04.

^{181}Tl - $T_{1/2}$: From $\alpha(t)$ in 2018Cu04, Others ($\alpha(t)$): 3.2 s 3 in 1998To14 and 3.4 s 6 in 1993BoZK,1992BiZW,1992BoZO.

^{181}Tl - $Q\alpha$ is from 2017Wa10.

^{181}Tl - $\% \alpha$ decay: From 2018Cu04. Other: ≤ 10 in 2004An07.

2009An14: Source produced using the $^{144}\text{Sm}(^{40}\text{Ca},p2n)$ reaction at $E(^{40}\text{Ca})=177\text{--}229$ MeV. Enriched 96.4% in ^{144}Sm target.

Detectors: velocity filter SHIP at GSI, position-sensitive silicon detector (PSDD) with $\Delta E \approx 25$ keV FWHM, a fourfold segmented clover Ge detector behind the PSDD. Measured: time correlated $E\alpha$, $I\alpha$, $T_{1/2}$, recoil- α - α (t), and recoil- α - γ (t) coin.

Others: 1998To14, 1996To01, 1993BoZK, 1992BiZW, 1992BoZO.

 ^{177}Au Levels

<u>$E(\text{level})^\dagger$</u>	<u>$J^\pi^\dagger$</u>	<u>$T_{1/2}^\dagger$</u>
0.0	$1/2^+$	1.501 s 20

† From Adopted Levels.

 α radiations

<u>$E\alpha$</u>	<u>$E(\text{level})$</u>	<u>$I\alpha^\ddagger$</u>	<u>$\text{HF}^\dagger$</u>	<u>Comments</u>
6183 7	0.0	100	4.1 4	$E\alpha, I\alpha$: from 2018Cu04, correlated with $E\alpha(^{177}\text{Au})=6159$ keV 7, Others: 6181 keV 7 in 2009An14, correlated with $E\alpha(^{177}\text{Au})=6161$ keV 7, 6180 keV 10 (1998To14) and 6180 keV (1993BoZK).

† Using $r_0(^{177}\text{Au})=1.532$ 9, average of $r_0=1.54$ 3 in ^{176}Os and 1.523 4 in ^{178}Pt , deduced from $\text{HF}=1$.

‡ For absolute intensity per 100 decays, multiply by 0.086 6.