

^{184}Hg α decay 1994Wa23

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 126, 151 (2015)	1-Feb-2015

Parent: ^{184}Hg : $E=0.0$; $J^\pi=0^+$; $T_{1/2}=30.87$ s 26; $Q(\alpha)=5662$ 4; $\% \alpha$ decay=1.26 20

^{184}Hg activity produced in $^{148}\text{Nd}(^{40}\text{Ca},4n)$, $E(^{40}\text{Ca})=200$ MeV. Measured $E\alpha$, $I\alpha$, $E(\text{ce})$, α -ce-t and α -x-ray-t coincidences using a PIPS detector for α 's, a LEPS detector for x-rays and a plastic scintillator for ce's.

The absolute intensity of the 5535-keV α was obtained by 1970Ha18 to be 1.25% 20 from their measurements of α/K x-ray ratio.

The measured $I(\text{K x-ray})$ was corrected by 1970Ha18 for K x-ray's due to conversion electrons.

In agreement with this intensity, 1980Sc09 obtained $I\alpha(5535\alpha)=1.11\%$ 6 from comparison of the intensities of parent and daughter activities in the same spectrum. The α branchings used for the daughter nuclei are not given in 1980Sc09. A 30% correction was applied by 1980Sc09 to the daughter line for the escaped recoiled nuclei.

In deducing the total α branching, $I\alpha(5535\alpha)=1.25\%$ 20 is adopted here and the 5380 and 5055 α intensities are added to $I\alpha(5535\alpha)$. $I\alpha(5380\alpha)/I\alpha(5535\alpha)=40$ 8/9960 8, as adopted in 1989Fi11, and $I\alpha(5055\alpha)=0.0020\%$ 4, measured by 1994Wa13, are used.

 ^{180}Pt Levels

<u>$E(\text{level})^\dagger$</u>	<u>J^π^\dagger</u>
0.0	0^+
153	2^+
478	0^+

† From the Adopted Levels.

 α radiations

<u>$E\alpha^\dagger$</u>	<u>$E(\text{level})$</u>	<u>$I\alpha^\ddagger@$</u>	<u>HF#</u>	<u>Comments</u>
5055 15	478	0.16 3	2.5 5	$E\alpha$: from 1994Wa13.
5380 15	153	0.40 8	47 10	$E\alpha$: other: 5379 15 (1994Wa23).
5539 5	0.0	99.44 10	1.0	$E\alpha$: weighted average of 5539 5 (1976To06) and 5535 15 (1970Ha18). This α line was used by 1994Wa13 for calibration.

† From 1970Ha18, except where noted.

‡ α intensities per 100 α decays. They are deduced from the intensity ratios given above.

$r_0(^{180}\text{Pt})=1.512$ 11 is calculated from $\text{HF}(5535\alpha)=1.0$.

@ For absolute intensity per 100 decays, multiply by 0.0126 20.