

^{209}At α decay [1969Go23](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 166, 1 (2020)	20-Apr-2020

Parent: ^{209}At : $E=0.0$; $J^\pi=9/2^-$; $T_{1/2}=5.42$ h 5; $Q(\alpha)=5757.1$ 20; $\% \alpha$ decay=3.9 4

^{209}At - $T_{1/2}$ is from [2015Ch30](#). $Q(\alpha)$ is from [2017Wa10](#). $\% \alpha$ is a weighted average of 4.1% 5 ([1968GuZX](#)) and 3.6% 7 ([2017Lo13](#)).

 ^{205}Bi Levels

E(level)	J^π	$T_{1/2}$	Comments
0.0	$9/2^-$	14.91 d 7	$J^\pi, T_{1/2}$: From Adopted Levels.

 α radiations

$E\alpha^\ddagger$	E(level)	$I\alpha^\#\#$	HF †	Comments
5116 @ 2		0.10 5	1.5×10^3	$E\alpha, I\alpha$: The existence of this α -decay branch is uncertain, since no excited level has been found at 541 keV 4 in ^{205}Bi . See Adopted Levels for details.
5647 2	0.0	99.90 5	1.61 19	

† Using $r_0(^{205}\text{Bi})=1.443$ 14, unweighted average deduced from values for neighboring even-even ^{204}Pb ($r_0=1.4297$ 7) and ^{206}Po ($r_0=1.4569$ 22) nuclei where $Hf(\alpha)=1.0$.

‡ From [1969Go23](#). Others: $E\alpha=5.64$ MeV ([1956Hu96](#)) and 5.65 MeV ([1951Ba14](#)).

$\#$ For absolute intensity per 100 decays, multiply by 0.039 4.

@ Existence of this branch is questionable.