

^{220}At α decay [1989Bu09](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. Morse	NDS 209,409 (2026)	5-Aug-2025

Parent: ^{220}At : $E=0.0$; $J^\pi=3$; $T_{1/2}=3.71$ min 4; $Q(\alpha)=6077$ 18; $\% \alpha$ decay=8 2

^{220}At - $T_{1/2}$: From [1989Li04](#), as adopted by [2011Br05](#). Other: 3.73 min 13 ([1989Bu09](#)).

^{220}At - $Q(\alpha)$: From [2021Wa16](#).

^{220}At - $\% \alpha$ decay: From [1989Bu09](#), as adopted by [2011Br05](#). Other: <0.1 ([1989Li04](#)).

[1989Bu09](#): ^{220}At produced by spallation of a ^{232}Th target by 600 MeV protons at CERN. Reaction products were separated by ISOLDE II and deposited onto a movable tape. Activity deposited on the tape was moved to a detector station consisting of a plastic scintillator, α detector, and a germanium detector. Measured $T_{1/2}$, E_α .

 ^{216}Bi Levels

E(level)	J^π [†]	$T_{1/2}$ [†]	Comments
0.0	(8 ⁻)	128 s 4	
24 19	(3 ⁻)	3.41 min 24	E(level): Calculated from decay kinematics, using E_α and the masses of ^{220}At and ^4He from 2021Wa16 .

[†] From Adopted Levels.

 α radiations

E_α	E(level)	I_α [#]	HF ^{†‡}	Comments
5943 6	24	100	4.8 16	E_α : From 1989Bu09 .

[†] The nuclear radius parameter $r_0(^{216}\text{Bi})=1.54773$ 66 is deduced from interpolation of radius parameters of the adjacent even-even nuclides in [2020Si16](#).

[‡] [Additional information 1](#).

[#] For absolute intensity per 100 decays, multiply by 0.08 2.