## $^{220}$Pa $\alpha$ decay (0.82 $\mu$s)

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

Parent: $^{220}$Pa: E=0.0; $J^\pi$=(1$^-$); $T_{1/2}$=0.82 $\mu$s *6*; Q($\alpha$)=9704 *11*; %$\alpha$ decay=100

$^{220}$Pa-$J^\pi$: Suggested in 2017Hu08 based on apparently low hindrance of this transition to the $^{216}$Ac ground state.

$^{220}$Pa-$T_{1/2}$: Weighted average of 0.90 $\mu$s *13* (2017Hu08), 0.91 $\mu$s *10* (2019Ya04), and 0.75 $\mu$s *8* (2021Ma66). Other: 1.1 $\mu$s *1* (1987MiZO), 0.78 $\mu$s *16* (1988FaZY), 0.98 $\mu$s *+40−22* (2019Zh54), 0.73 $\mu$s *11* (2020Ma27, presumably superseded by 2021Ma66). The values from 1987MiZO and 1988FaZY appear to have discrepant $\alpha$-decay energies.

$^{220}$Pa-Q($\alpha$): From 2021Wa16.

$^{220}$Pa-%$\alpha$ decay: Only $\alpha$ decay has been observed.

### $^{216}$Ac Levels

| E(level) | $J^\pi$ | $T_{1/2}$ | Comments |
|---|---|---|---|
| 0 | (1$^-$) | 0.374 ms *22* | $J^\pi$,$T_{1/2}$: From Adopted Levels. |

### $\alpha$ radiations

| E$\alpha$ | E(level) | I$\alpha$[#] | HF[†‡] | Comments |
|---|---|---|---|---|
| 9530 *10* | 0 | 100 | 1.8 *4* | E$\alpha$: Weighted average of 9520 keV *16* (2017Hu08), 9522 keV *25* (2019Ya04), 9541 keV *20* (2019Zh54), and 9548 keV *30* (2020Ma27,2021Ma66). |

† Additional information 1.

‡ The nuclear radius parameter $r_0(^{216}Ac)$=1.5508 *92* is deduced from interpolation of radius parameters of the adjacent even-even nuclides in 2020Si16.

# Absolute intensity per 100 decays.