

^{228}Pu α decay (1.1 s) [2003Ni10](#),[1994An02](#)

Type	Author	Citation	History	Literature Cutoff Date
Full Evaluation	Balraj Singh, Sukhjeet Singh	ENSDF		08-Mar-2022

Parent: ^{228}Pu : $E=0$; $J^\pi=0^+$; $T_{1/2}=1.1\text{ s} +20-5$; $Q(\alpha)=7940\text{ 18}$; $\% \alpha$ decay=100.0

^{228}Pu - $T_{1/2}$: From ^{228}Pu Adopted Levels in the ENSDF database (Dec 2012 update, value taken from [2003Ni10](#), no new references after this evaluation).

^{228}Pu - $Q(\alpha)$: From [2021Wa16](#).

^{228}Pu - $\% \alpha$ decay: $\% \alpha=100$, based on $\% \epsilon + \% \beta^+ < 0.5$ from Gross theory of β decay ([1973Ta30](#)); $< 0.03\%$ from theoretical calculations in [2019Mo01](#).

[2003Ni10](#): ^{228}Pu produced in $^{198}\text{Pt}(^{34}\text{S},4n)$, $E=170,172\text{ MeV}$; measured $E\alpha$, $T_{1/2}$.

[1994An02](#), [1994Ye08](#): $^{208}\text{Pb}(^{24}\text{Mg},4n)$ at beam energy $E=5.50\text{ MeV/nucleon}$, genetic correlations with the α decay of ^{224}U and its daughter products; measured $E\alpha$. Half-life could not be measured in this work.

 ^{224}U Levels

E(level)	J^π
0	0^+

 α radiations

$E\alpha$	E(level)	HF [†]	Comments
7810 20	0	1.0	$E\alpha$: from 1994An02 . Other: 7772 35 (2003Ni10).

[†] For $\text{HF}(7810\alpha)=1.0$, deduced $r_0=1.480\text{ fm}$ for $T_{1/2}=1.1\text{ s}$, 1.435 fm for $T_{1/2}=3.1\text{ s}$, 1.506 fm for $T_{1/2}=0.6\text{ s}$; with an average $r_0=1.474\text{ 20}$ for ^{224}U . In [2020Si16](#) evaluation, $r_0=1.480\text{ 42}$.