

${}^{44}\text{P}$ β^- decay (18.2 ms) 2022Tr03,2022Cr03

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh		NDS 190,1 (2023)	20-Jun-2023

Parent: ${}^{44}\text{P}$: $E=0$; $T_{1/2}=18.2$ ms I_0 ; $Q(\beta^-)=20310$ syst; $\% \beta^-$ decay=100

${}^{44}\text{P}$ - $T_{1/2}$: From ${}^{44}\text{P}$ Adopted Levels.

${}^{44}\text{P}$ - $Q(\beta^-)$: 20310 400 (syst,2021Wa16).

${}^{44}\text{P}$ - $\% \beta^-$ decay: $\% \beta^- n=75.8$ (measured by 2022Tr03).

Half-life of ${}^{44}\text{P}$ decay measured by 2022Cr03, 2022Tr03 and 2004Gr20.

2022Tr03: ${}^{44}\text{P}$ produced in ${}^9\text{Be}({}^{48}\text{Ca},X), E({}^{48}\text{Ca})=140$ MeV/nucleon, and reaction products separated by A1900 fragment separator at the NSCL-MSU facility. Selected isotopes were transported to the Beta Counting System (BCS) consisting of Double-Sided Silicon Strip Detector (DSSD), two Si PIN detectors, and 16 Clover HPGe detectors. Measured half-life of the decay of ${}^{44}\text{P}$, $\% \beta^- n$ for the decay of ${}^{44}\text{P}$ by following the decay chain of ${}^{44}\text{P}$ through β^- and $\beta^- n$ decay daughters, E_γ .

2022Cr03: measured half-life of the decay of ${}^{44}\text{P}$ at FRIB.

2004Gr20,2003Gr22: measured ${}^{44}\text{P}$ half-life at GANIL.

 ${}^{44}\text{S}$ Levels

E(level)	J^π †	Comments
0.0	0^+	Evaluators assumed that g.s. of ${}^{44}\text{S}$ is populated in ${}^{44}\text{P}$ β^- decay.
1330	2^+	
2285?	(2^+)	

† From the Adopted Levels.

 $\gamma({}^{44}\text{S})$

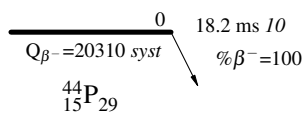
E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
955†	2285?	(2^+)	1330	2^+	Possible γ ray from ${}^{44}\text{P}$ decay (Fig. 9a in 2022Tr03).
1330	1330	2^+	0.0	0^+	Weak 1330-keV γ observed (Fig. 9a in 2022Tr03).

† Placement of transition in the level scheme is uncertain.

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Decay Scheme

Legend

----- γ Decay (Uncertain)