

^{99}Cd εp decay (17 s) [2019Pa16](#),[1978EI09](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen, Balraj Singh		NDS 164, 1 (2020)	15-Feb-2020

Parent: ^{99}Cd : $E=0$; $J^\pi=(5/2^+)$; $T_{1/2}=17$ s I ; $Q(\varepsilon\text{p})=4101$ 5; $\% \varepsilon\text{p}$ decay=0.21 2

^{99}Cd - J^π : From ^{99}Cd Adopted Levels in the ENSDF database (July 2017 update).

^{99}Cd - $T_{1/2}$: From weighted average of 17 s I ([2019Pa16](#), $\beta\gamma$ and βp decay curves); and 16 s 3 ([1978EI09](#)).

^{99}Cd - $Q(\varepsilon\text{p})$: From [2017Wa10](#).

^{99}Cd - $\% \varepsilon\text{p}$ decay: $\% \varepsilon\text{p}=0.21$ 2 ([2019Pa16](#)) for the decay of ^{99}Cd . Other: $0.17 +11-5$ ([1978EI09](#)).

[2019Pa16](#): $E(^{124}\text{Xe})=345$ MeV/nucleon beam incident on a 740 mg/cm² thick ^9Be target at the RIKEN-RIBF facility. The identification of the nuclide of interest was made through the BigRIPS separator and the ZeroDegree spectrometer by determining the atomic number and the mass-to-charge ratio of the ion using the tof-B ρ - ΔE method. The secondary beam was stopped in the double-sided silicon strip detector of the WAS3ABi spectrometer. The γ rays were detected by EURICA array comprising of 84 HPGe detectors. Measured $E\gamma$, $\beta\gamma$ -coin, βp -coin, $\beta\text{p}\gamma$ -coin, half-lives by $\beta\gamma(t)$, $\beta\text{p}(t)$. Comparisons with previous experimental data and shell-model calculations.

[1978EI09](#): ^{99}Cd isotopes were produced in spallation reactions induced by bombarding a 115 g/cm² target of natural tin with 600 MeV protons from the CERN Synchro-cyclotron and separated by the ISOLDE separator. β -delayed protons were detected with a position-sensitive surface-barrier detector (FWHM=43 keV or 17 keV in two set-ups). Measured proton spectra, decay curve.

Deduced proton decay branching, parent $T_{1/2}$.

Proton branches to levels in ^{98}Pd are not known.

 ^{98}Pd Levels

<u>E(level)</u>	<u>J^π</u>	<u>Comments</u>
0.0	0^+	Assumed that the g.s. is populated in ^{99}Cd εp decay.