^{98}In ε decay (30 ms) 2019Pa16

History

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

Parent: ^{98}In: E=0; $J^\pi=(0^+)$; $T_{1/2}$=30 ms *1*; Q(ε)=1293×10[1] *40*; %ε+%$β^+$ decay=100.0

^{98}In-J^π,$T_{1/2}$: From ^{98}In Adopted Levels.

^{98}In-Q(ε): Measured by 2019Pa16 from $β^+$ spectrum. Other: 13740 *300* from systematic trend (2017Wa10).

^{98}In-%ε+%$β^+$ decay: Delayed proton branch from the decay of 30-ms activity of ^{98}In has not been observed by 2019Pa16. Authors assign %εp<0.13.

2019Pa16: E(^{124}Xe)=345 MeV/nucleon beam incident on a 740 mg/cm^2 thick ^{9}Be 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-Bρ-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 Eγ, βγ-coin, βp-coin, βpγ-coin, half-lives by βγ(t), βp(t). Deduced $β^+$ end-point energies, Q(ε) value, excitation energy of the (9^+) isomer. Comparisons with previous experimental data and shell-model calculations.

^{98}Cd Levels

E(level)	J^π	$T_{1/2}$
0.0	0^+	9.3 s *1*

ε,$β^+$ radiations

E(decay)	E(level)	Iβ+ †	Iε†	Log *ft*	I(ε+β+)†	Comments
(1.29×10[4] *4*)	0.0	99.7	0.3	3.58 *8*	100	av Eβ=5.69×10[3] *20*; εK=0.0027 *3*; εL=0.00034 *4*; εM+=8.6×10^{-5} *9* The β transition is expected to be superallowed for (0^+) to 0^+, and T=1 for both the ground states. From evaluation of superallowed β transitions in Table IX of 2015Ha07, average log *ft* should be 3.485 *1* for such transitions.

† Absolute intensity per 100 decays.