Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 200,2 (2025)	22-Aug-2022

Q(β^-)=7.72×10^3 *10*; S(n)=4.36×10^3 *10*; S(p)=10240 *syst*; Q(α)=−3.97×10^3 *10* 2021Wa16
ΔS(p)=220 (syst,2021Wa16).
S(2n)=10240.0 *1000*, S(2p)=23150 *320* (syst), Q(β^-n)=1400.0 *1000* (2021Wa16).
2017Wu04 compiled for XUNDL database by F.G. Kondev (ANL).
2017Wu04: The ^{154}Pr nuclide was produced at the RIBF-RIKEN facility using the ^{9}Be(^{238}U,F) reaction at E=345 MeV/nucleon. Two experiments, optimized for the transmission of ^{158}Nd and ^{170}Dy ions, were carried out with average beam intensities of 7 pnA and 12 pnA, respectively. The identification of the nuclide of interest was made in the BigRIPS separator by determining the atomic number and the mass-to-charge ratio of the ion using the tof-Bρ-ΔE method. The reaction products were transported through the ZeroDegree Spectrometer and implanted into the beta-counting system WAS3ABi that was surrounded by the EURICA array comprising of 84 HPGe detectors. The typical implantation rate was 100 ions/s. Measured: implanted ion-β^--t, implanted ion-β^--γ-t and implanted ions-γ-t correlations. Deduced: $T_{1/2}$.
1996To05, 1990Ok04, 1988Ka16 (same group of authors): ^{154}Pr separated from ^{235}U(n,F), E=thermal with the on-line isotope separator KUR-ISOL. Measured Eγ, Iγ, E X-ray, I X-ray, $\gamma\gamma$-coin, $\gamma\gamma$(t), (X-ray)γ(t). Deduced $T_{1/2}$.

^{154}Pr Levels

E(level)	J$^\pi$	$T_{1/2}$	Comments
0.0	(3$^+$)	2.3 s *1*	%β^-=100 J$^\pi$: Suggested by 1996To05 based on proposed Nilsson configuration π3/2[541]⊗ν3/2[521]. Additional information 1. $T_{1/2}$: weighted average of 2.3 s *1* (from Iγ(t) and Ix(t) (1988Ka16, 1990Ok04, 1996To05)) and 2.29 s *20* (2017Wu04). %β^-: assumed to be 100%, since other decay modes seem to be unlikely. configuration: From systematics of well-deformed nuclei in this mass region, the π3/2[541] and ν3/2[521] Nilsson orbitals are expected near the proton and neutron Fermi surfaces, respectively. Thus, using the Gallagher-Moszkowski rule, one may expect the K^π=3$^+$, π3/2[541]⊗ν3/2[521] configuration for the ground state. The existence of a K^π=0$^+$ isomer, arising from the same configuration, is also possible.