Adopted Levels

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Filip G. Kondev	ENSDF	20-Feb-2017

Q(β^-)=7921 (syst) *301*; S(n)=5044 (syst) *361*; S(p)=11009 (syst) *424*; Q(α)=−4905 (syst) *424* 2017Wa10
S(2n)=9268 (syst) *361*; S(2p)=25188 (syst) *424*; Q(β^-n)=3862 (syst) *361* 2017Wa10
Additional information 1.
2017Wu04: The ^{157}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: $T_{1/2}$.

^{157}Pr Levels

E(level)	J^π	$T_{1/2}$	Comments
0.0	(3/2$^-$)	0.295 s *+29−11*	%β^-=100; %β^-n=? %β^-: Only β^- decay mode is expected. J^π: From systematics of known quasiparticle states in neighboring nuclei and the proposed configuration (by the evaluator). The assignment is tentative. $T_{1/2}$: From 2017Wu04, using a fit to the implanted ion-β^--t spectrum using the least-squares and maximum-likelihood methods. The data analysis included contributions from the parent, daughter and grand-daughter decays, as well as a constant background. configuration: π3/2[541] Nilsson orbital, based on systematics of known structures in neighboring, well-deformed nuclei (by the evaluator). The assignment is tentative.