^{93}Pd ε decay 2000Sc31

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 112, 1163 (2011)	15-Dec-2010

Parent: ^{93}Pd: E=0.0; J$^\pi$=(9/2$^+$); $T_{1/2}$=1.00 s *9*; Q(ε)=9570 *SY*; %ε+%β^+ decay=100.0

2000Sc31: source from mass-separated A=93 product following the ^{58}Ni(^{40}Ca,an) reaction At E=188 MeV on an enriched ^{58}Ni target; plastic scin detector and 12 Ge detectors; measured Eγ, Iγ, $\gamma\beta$+ coin and $\gamma\gamma\beta$+ coin. see also 2002Ro25.

^{93}Rh Levels

E(level)†	J$^\pi$‡	Comments
0.0	(9/2$^+$)	
239.8	(7/2$^+$)	
621.6	(5/2$^+$)	
864.1		J$^\pi$: 13/2$^+$ suggested by 2000Sc31 was based on the supposition that the 864.1γ seen In ^{93}Pd ε decay is the same As the 865.9γ previously reported In the ^{58}Ni(^{40}Ca,3p2nγ) reaction by 1995Ro06. In ^{94}Ag εp decay, the latter line has Eγ=866.0 *1* and deexcites a (17/2$^+$) 1719 level. the evaluator concludes that the 864.1γ from ε decay must be a different transition.

† From least-squares fit to Eγ, allowing equal weight for all data.
‡ From Adopted Levels.

γ(^{93}Rh)

Iγ normalization: the evaluator has not normalized this decay scheme; the Q value (9.5 MeV) is large, %εp is unknown, feeding to the ^{93}Rh g.s. is expected and it is possible that significant ε+β^+ feeding occurs to excited states whose deexcitation gammas are too weak to have been seen In the experiment of 2000Sc31. however, from a comparison of I(511γ) with that expected based on the level scheme, 2000Sc31 estimate an upper limit of 30% 9 for the combined ε+β^+ feeding of the g.s. and any As yet unobserved excited states.

E$_\gamma$†	I$_\gamma$†	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$	Mult.	α‡	Comments
239.7	81 *7*	239.8	(7/2$^+$)	0.0	(9/2$^+$)	[M1]	0.0321	α(K)=0.0280 *4*; α(L)=0.00334 *5*; α(M)=0.000621 *9*; α(N+..)=0.0001082 *16* α(N)=0.0001030 *15*; α(O)=5.21×10^{-6} *8*
381.7	25 *3*	621.6	(5/2$^+$)	239.8	(7/2$^+$)			
621.7	9.6 *20*	621.6	(5/2$^+$)	0.0	(9/2$^+$)			
864.1	9.1 *20*	864.1		0.0	(9/2$^+$)			

† From 2000Sc31. all transitions are In coincidence with $\gamma^\pm$.
‡ Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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Decay Scheme

Intensities: Relative I_γ