

Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	31-Jul-2015

$Q(\beta^-)=10010$ SY; $S(n)=3740$ SY; $S(p)=16340$ SY; $Q(\alpha)=-11600$ SY [2012Wa38](#)

Estimated uncertainties ([2012Wa38](#)): 720 for $Q(\beta^-)$, 500 for $S(n)$, 570 for $S(p)$ and $Q(\alpha)$.

$S(2n)=9950$ 450, $S(2p)=31440$ 640, $Q(\beta^-n)=3910$ 470 (syst,[2012Wa38](#)).

[2008Oh06](#): ^{125}Pd nuclide identified in $^9\text{Be}(^{238}\text{U},X)$ reaction with a $^{238}\text{U}^{86+}$ beam energy of 345 MeV/nucleon produced by the cascade operation of the RBIF accelerator complex of the linear accelerator RILAC and four cyclotrons RRC, fRC, IRC and SRC. Identification of ^{125}Pd nuclei was made on the basis of magnetic rigidity, time-of-flight and energy loss of the fragments using BigRIPS fragment separator. Experiments performed at RIKEN facility. Based on A/Q spectrum and Z versus A/Q plot, 22 counts were assigned to ^{125}Pd isotope. (Q =charge state).

[2008Be33](#): identification and production of ^{125}Pd nuclide in $\text{Be}(^{136}\text{Xe},X)$ reaction at $E(^{136}\text{Xe})=1$ GeV/nucleon, beam provided by SIS18 synchrotron at GSI facility. The fragments were analyzed using FRS magnetic separator on the basis of magnetic rigidity and time-of-flight. Atomic number of residual nucleus was determined from energy loss in an ionization chamber MUSIC.

[2015Lo04](#): ^{125}Pd nuclide produced at RIBF-RIKEN facility in $^9\text{Be}(^{238}\text{U},F)$ reaction at $E=345$ MeV/nucleon with an average intensity of 6×10^{10} ions/s. Identification of ^{125}Pd was made by determining atomic Z and mass-to-charge ratio A/Q, where Q =charge state of the ions. The selectivity of ions was based on magnetic rigidity, time-of-flight and energy loss. The separated nuclei were implanted at a rate of 50 ions/s in a stack of eight double-sided silicon-strip detector (WAS3ABi), surrounded by EURICA array of 84 HPGe detectors. Correlations were recorded between the implanted ions and β rays. The half-life of ^{125}Pd isotope was measured from the correlated ion- β decay curves and maximum likelihood analysis technique as described in

[2014Xu07](#). Comparison of measured half-lives with FRDM+QRPA, KTUY+GT2 and DF3+CQRPA theoretical calculations.

[Additional information 1](#).

 ^{125}Pd Levels

E(level)	$T_{1/2}$	Comments
0	57 ms 10	<p>$\% \beta^- = 100$; $\% \beta^- n = ?$</p> <p>Theoretical $T_{1/2} = 265$ ms, $\% \beta^- n = 2.9$ (2003Mo09).</p> <p>Measured $\sigma = 7$ nb (2008Oh06), 94 pb 27 (2008Be33).</p> <p>E(level): the reported half-life is assumed to correspond to the g.s. of ^{125}Pd.</p> <p>$T_{1/2}$: measured by 2015Lo04 from (implanted ions)β correlated curves in time and position using maximum likelihood method. See 2015Lo04 for comparison of their experimental value with theoretical values.</p> <p>J^π: $3/2^+$ from systematic trend (2012Au07), $9/2^-$ in theoretical calculations (1997Mo25).</p>