Adopted Levels

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	H. Iimura, J. Katakura, S. Ohya	NDS 180, 1 (2022)	1-Oct-2021

Q(β^-)=14590 *SY*; S(n)=3440 *SY*; S(p)=16120 *SY*; Q(α)=−13320 *SY* 2021Wa16
ΔQ(β^-)=640, ΔS(n)=710, ΔS(p)=580, ΔQ(α)=580 (2021WA16).

2010Oh02: ^{126}Rh nuclide identified in Be(^{238}U,F) and Pb(^{238}U,F) reactions with a $^{238}U^{86+}$ beam energy of 345 MeV/nucleon produced by the cascade operation of the RIBF accelerator complex of the linear accelerator RILAC and four cyclotrons RRC, fRC, IRC and SRC. Identification of ^{126}Rh nuclei was made on the basis of magnetic rigidity, time-of-flight and energy loss of the fragments using BigRIPS fragment separator. Based on A/Q spectrum and Z versus A/Q plot, one count was assigned to ^{126}Rh isotope (Q=charge state).

2015Lo04: ^{126}Rh nuclide produced at RIBF-RIKEN facility in ^{9}Be(^{238}U,F) reaction at E=345 MeV/nucleon with an average intensity of 6×10^{10} ions/s. Identification of ^{126}Rh 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 ^{126}Rh 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.

2013Fa08: theoretical calculations of $T_{1/2}$ and %β^-n.

Additional information 1.

^{126}Rh Levels

E(level)	$T_{1/2}$	Comments
0	19 ms *3*	%β^-=100; %β^-n=?; %β^-2n=? Theoretical %β^-n=23.0, %β^-2n=0.43 (2003Mo09). Measured σ=0.7 pb (2010Oh02), systematic uncertainty≈40%. Probability of misidentification of ^{126}Rh isotope=0.46% (2010Oh02). E(level): measured half-life is assumed to correspond to the ground state of ^{126}Rh. $T_{1/2}$: 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 ones.