

Adopted Levels

Type	History		Literature Cutoff Date
	Author	Citation	
Full Evaluation	Balraj Singh	ENSDF	31-Dec-2016

$Q(\beta^-)=9057$ 4; $S(n)=2271$ 4; $S(p)=16260$ SY; $Q(\alpha)=-7730$ SY [2012Wa38](#)

Estimated $\Delta S(p)=300$, $\Delta Q(\alpha)=200$ (syst,[2012Wa38](#)).

$S(2n)=5901$ 4, $S(2p)=31290$ 300 (syst), $Q(\beta^-n)=5317$ 4 ([2012Wa38](#)).

[1994Be24](#), [1998Do08](#), [2006KeZZ](#): ^{135}Sn from $\text{Pb}(^{238}\text{U},\text{F})$, $E=750$ MeV/nucleon, fragment separator; identification by $B\rho$ - ΔE -tof techniques.

[2005Sh36](#), [2005Sh23](#), [2002Sh08](#) (also [2005Sh53](#),[2001Sh12](#)): ^{135}Sn produced by high-energy neutron fission of UC_2 target at ISOLDE/ CERN facility. The high-energy neutrons were produced by bombarding a tungsten rod (adjacent to the UC_2 target) with 1.4 GeV protons. The Sn ions were extracted and mass separated. The β^- and delayed neutron decay of ^{135}Sn were studied by β and γ spectroscopy.

[2005Ko40](#), [2001Ko45](#): ^{135}Sn produced by thermal neutron fission of ^{235}U followed by mass separation at OSIRIS mass separator facility in Studsvik.

[2015Lo04](#): ^{135}Sn nuclide produced at RIBF-RIKEN facility in $^9\text{Be}(^{238}\text{U},\text{F})$ reaction at $E=345$ MeV/nucleon with an average intensity of 6×10^{10} ions/s. Identification of ^{135}Sn 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 ^{135}Sn 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.

[2013Va12](#), [2012Ha25](#): measured mass excess by TOF ion cyclotron resonance technique.

Additional information 1.

[2002Ur04](#) predict following yrast levels from systematics of N=85 isotones: $7/2^-$ g.s.; $5/2^-$ at 200; $3/2^-$ at 400; $9/2^-$ at 700; $11/2^-$ at 800 and $15/2^-$ at 1200. These predictions are compared by [2002Ur04](#) with OXBASH model calculations.

 ^{135}Sn Levels

E(level)	J^π	$T_{1/2}$	Comments
0	$(7/2^-)$	515 ms 5	$\% \beta^- = 100$; $\% \beta^- n = 21$ 3 (2002Sh08); $\% \beta^- 2n = ?$ $\% \beta^- n$: others: 25 7 (2001Sh12), 22 7 (2002Pf04 evaluation). Theoretical $T_{1/2} = 1070$ ms, $\% \beta^- n = 51.7$, $\% \beta^- 2n = 5.5$ (2003Mo09). J^π : possible $\nu f_{7/2}^3$ configuration; systematics of N=85 isotones and shell-model predictions (2001Ko45 , 2002Ur04). $T_{1/2}$: measured by 2015Lo04 from the analysis of the (implanted ions) β correlated decay curve in time and position. Others: 530 ms 20 (2002Sh08 , also 450 ms 50 in 2001Sh12); 0.6 s 1 (2001Ko45); 485 ms 37 (2006KeZZ , preliminary value).