

[Adopted Levels, Gammas](#)

Type	Author	History	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 152, 331 (2018)	1-Apr-2018

$Q(\beta^-)=8610 \text{ SY}$; $S(n)=3340 \text{ SY}$; $S(p)=16660 \text{ SY}$; $Q(\alpha)=-8060 \text{ SY}$ [2017Wa10](#)

$\Delta Q(\beta^-)=300$; $\Delta S(n)=300$; $\Delta S(p)=500$; $\Delta Q(\alpha)=360$ ([2017Wa10](#)).

$S(2n)=5610 \text{ syst } 300$; $S(2p)=31560 \text{ syst } 500$; $Q(\beta^-n)=5720 \text{ syst } 300$ ([2017Wa10](#)).

[1998Do08,1994Be24](#): $^{208}\text{Pb}(^{238}\text{U},\text{F})$ with $E(^{238}\text{U})=750 \text{ MeV/nucleon}$. Fission products separated using the FRS fragment mass separator and identified through energy loss and time of flight measurement. Identification of ^{136}Sn isotopes.

[2011Ar18,2002Sh08,2001Sh12](#): $^{238}\text{U}(\text{p},\text{F})$ with $E(\text{p})=1 \text{ GeV}$. ^{136}Sn selected with the Resonance Ionization Laser Ion Source (RILIS) followed by a high-resolution mass spectrometer. Measured β -delayed neutrons and $\beta n(t)$ using the Mainz neutron long counter consisting of a three-ring concentric array of 50 ^3He proportional counters.

α : [Additional information 1](#).

[136Sn Levels](#)[Cross Reference \(XREF\) Flags](#)

A $^9\text{Be}(^{137}\text{Sb},X\gamma)$
B $^9\text{Be}(^{238}\text{U},\text{F}\gamma)$

E(level) [†]	J^π [‡]	T _{1/2}	XREF	Comments
0	0 ⁺	345 ms 15	AB	% β^- =100; % β^-n =27 4 (2011Ar18)
				T _{1/2} : weighted average of 300 ms 15 from $\beta n(t)$ (2011Ar18) and 350 ms 5 from implant- $\beta(t)$ (2015Lo04). Earlier results by same group as 2011Ar18 using similar setup: 0.25 s 3 (2002Sh08) and <0.4 s (2001Sh12).
				% β^-n : from neutron counting (2011Ar18). Earlier result by same group using similar setup: 30 5 (2002Sh08).
688 I	(2 ⁺)		AB	
1079 2	(4 ⁺)		B	
1295 2	(6 ⁺)	46 ns 7	B	configuration= $v f_{7/2}^2$. T _{1/2} : from implant- $\gamma(t)$ in $^9\text{Be}(^{238}\text{U},\text{F}\gamma)$; $\gamma(t)$ was summed for 688 γ , 391 γ , and 216 γ .

[†] From E γ .

[‡] From shell model predictions and systematics of semi-magic even-even nuclei ([2014Si18](#)).

[γ\(¹³⁶Sn\)](#)

E _i (level)	J_i^π	E γ [†]	I γ [†]	E _f	J f^π	Mult.	α	Comments
688	(2 ⁺)	688 I	100	0	0 ⁺			
1079	(4 ⁺)	391 I	100	688	(2 ⁺)			
1295	(6 ⁺)	216 I	100	1079	(4 ⁺)	[E2]	0.1068 23	$\alpha(K)=0.0878 \text{ 19}$; $\alpha(L)=0.0153 \text{ 4}$; $\alpha(M)=0.00306 \text{ 7}$; $\alpha(N)=0.000556 \text{ 13}$; $\alpha(O)=3.54 \times 10^{-5} \text{ 8}$ B(E2)(W.u.)=0.57 9

[†] From $^9\text{Be}(^{238}\text{U},\text{F}\gamma)$.

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Legend

Level Scheme

Intensities: Type not specified

- > $I_{\gamma} < 2\% \times I_{\gamma}^{\max}$
- > $I_{\gamma} < 10\% \times I_{\gamma}^{\max}$
- > $I_{\gamma} > 10\% \times I_{\gamma}^{\max}$

