

$^{112}\text{Sn}(^3\text{He},\alpha\gamma)$ **1985Az03**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 110, 1239 (2009)	1-Feb-2008

$E(^3\text{He})=32$ MeV.

Measured: $\sigma(E\alpha,E\gamma)$, mag spect,Ge(Li).

^{111}Sn Levels

E(level)	J^π^\dagger	E(level)	J^π^\dagger	E(level)	J^π^\dagger	E(level)	J^π^\dagger
0	$7/2^+$	1151	$(3/2,5/2)^+$	1693	$(3/2,5/2)^+$	2090	$(7/2,9/2,13/2)$
154	$5/2^+$	1236	$(9/2)^+$	1825	$(7/2,9/2)^+$	2192	$(3/2,5/2)^+$
254	$1/2^+$	1276	$7/2^+$	1890	$(7/2)^+$	2284	$(5/2)^+$
643	$3/2^+$	1302	$(3/2,5/2)^+$	1988		2313	$(7/2,9/2)$
755	$5/2^+$	1348	$11/2^+$	1995	$(3/2,5/2)^+$		
978	$11/2^-$	1478	$9/2^+$	2031	$(3/2^+)$		
1032	$(3/2)^+$	1578	$(3/2,5/2)^+$	2060	$(15/2)$		

† From author's analysis.

$\gamma(^{111}\text{Sn})$

E_γ	I_γ^\ddagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	Comments
100		254	$1/2^+$	154	$5/2^+$		E_γ : from adopted γ 's.
154	1	154	$5/2^+$	0	$7/2^+$	D+Q	$\delta: -57 \leq \delta \leq -0.14$.
389	1	643	$3/2^+$	254	$1/2^+$	D+Q	$\delta: \leq -0.23, \geq +3.27$.
489	1	643	$3/2^+$	154	$5/2^+$	D+Q	$\delta: \delta \leq +0.14$.
742	1	2090	$(7/2,9/2,13/2)$	1348	$11/2^+$		
755 ‡	1	755	$5/2^+$	0	$7/2^+$		
854	1	2090	$(7/2,9/2,13/2)$	1236	$(9/2)^+$		
978	1	978	$11/2^-$	0	$7/2^+$		$\delta: -0.31 \leq \delta \leq +0.84$.
997 ‡	1	1151	$(3/2,5/2)^+$	154	$5/2^+$		
1032 ‡	1	1032	$(3/2)^+$	0	$7/2^+$		
1077	2	2313	$(7/2,9/2)$	1236	$(9/2)^+$		
1082 ‡	2	2060	$(15/2)$	978	$11/2^-$		
1112	1	2090	$(7/2,9/2,13/2)$	978	$11/2^-$		
1122	1	1276	$7/2^+$	154	$5/2^+$	D+Q	$\delta: -0.05 \leq \delta \leq +4.7$.
1148	1	1302	$(3/2,5/2)^+$	154	$5/2^+$		
1181 ‡	1	1825	$(7/2,9/2)^+$	643	$3/2^+$		
1236	2	1236	$(9/2)^+$	0	$7/2^+$		
1276	1	1276	$7/2^+$	0	$7/2^+$	D+Q	$\delta: -2.74 \leq \delta \leq +0.34$.
1324	1	1478	$9/2^+$	154	$5/2^+$		$\delta: -1.6 \leq \delta \leq -0.5$.
1335	1	2090	$(7/2,9/2,13/2)$	755	$5/2^+$		
1348	1	1348	$11/2^+$	0	$7/2^+$		$\delta: +0.32 \leq \delta \leq +14.3$.
1423	1	1578	$(3/2,5/2)^+$	154	$5/2^+$		
1478	1	1478	$9/2^+$	0	$7/2^+$		
1538 ‡	2	1693	$(3/2,5/2)^+$	154	$5/2^+$		
1548 ‡	2	2192	$(3/2,5/2)^+$	643	$3/2^+$		
1736 ‡	2	1890	$(7/2)^+$	154	$5/2^+$		
1841	2	1995	$(3/2,5/2)^+$	154	$5/2^+$		
1876 ‡	2	2031	$(3/2^+)$	154	$5/2^+$		
1890 ‡	2	1890	$(7/2)^+$	0	$7/2^+$		

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$^{112}\text{Sn}({}^3\text{He},\alpha\gamma)$ 1985Az03 (continued) $\gamma(^{111}\text{Sn})$ (continued)

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
1988 1	1988		0	$7/2^+$
2130 2	2284	$(5/2)^+$	154	$5/2^+$

† Observed only at one angle.

‡ % photon branching from each level.

$I_\gamma(1276\gamma)/I_\gamma(1122\gamma)=0.22$ 9 is inconsistent with values 0.55 and 0.56 12, in ε decay and $({}^3\text{He},3n\gamma),(\alpha,n\gamma)$, respectively.

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Level Scheme

Intensities: Type not specified

Legend

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

