

⁹⁶Zr($\alpha,3n\gamma$) 1971Le20

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 111, 525 (2010)	19-Nov-2009

E α =30 MeV; measured E γ , I γ , $\gamma\gamma$, $\gamma(\theta)$, (α) γ (t);Ge(Li) detectors.

⁹⁷Mo Levels

E(level)	J $^{\pi}$ †	E(level)	J $^{\pi}$ †	E(level)	J $^{\pi}$ †	E(level)	J $^{\pi}$ †
0.0	5/2 ⁺	1284	3/2 ⁺ ,5/2 ⁺	1920	13/2 ⁺ ‡	2552?#	(17/2 ⁺)‡
658	7/2 ⁺	1410	11/2 ⁺	2002	15/2 ⁻ ‡	2830	(19/2 ⁺)‡
1025	7/2 ⁺	1436	11/2 ⁻	2160	(13/2,15/2 ⁻)‡	3749?	(23/2 ⁺)‡
1116	9/2 ⁺	1515	9/2 ⁺	2435	(15/2 ⁺)‡		

† From Adopted Levels unless noted otherwise.

‡ Spin assignment from $\gamma(\theta)$ in this experiment.

Or 2713; the ordering of 117 γ and 278 γ is uncertain (1971Le20).

$\gamma(^{97}\text{Mo})$

E γ	I γ	E _i (level)	J _i $^{\pi}$	E _f	J _f $^{\pi}$	Mult.†	Comments
117.0 10	17 3	2552?	(17/2 ⁺)	2435	(15/2 ⁺)		
^x 124.8	0.8 4						E γ : probably belongs in ⁹⁷ Mo from coin data.
259.0 10	3.6 6	1284	3/2 ⁺ ,5/2 ⁺	1025	7/2 ⁺		E γ : not seen in (n,n' γ) study.
278.3 10	18 2	2830	(19/2 ⁺)	2552?	(17/2 ⁺)		
320.5 10	56 3	1436	11/2 ⁻	1116	9/2 ⁺		
566.0 10	31 5	2002	15/2 ⁻	1436	11/2 ⁻	Q	
658.3 10	70 3	658	7/2 ⁺	0.0	5/2 ⁺		
723.1 10	20 5	2160	(13/2,15/2 ⁻)	1436	11/2 ⁻		E γ ,I γ : from coin data, the γ is masked in the singles spectrum by a 722-keV γ in ⁹⁸ Mo.
751.9 10	51 10	1410	11/2 ⁺	658	7/2 ⁺	Q	I γ : from coin data, in singles spectrum γ masks a 752.8 keV γ in ⁹⁸ Mo.
803.7 10	35 3	1920	13/2 ⁺	1116	9/2 ⁺	Q	
^x 846.3 10	8 2						E γ : possibly ⁹⁷ Mo from excit.
919.2 10	5.5 15	3749?	(23/2 ⁺)	2830	(19/2 ⁺)		
1024.7‡ 10	≈17‡	1025	7/2 ⁺	0.0	5/2 ⁺		I γ : from coin data≈40% of singles intensity of the doublet (I γ =42 3) belongs to this transition.
1024.7‡ 10	≈25‡	2435	(15/2 ⁺)	1410	11/2 ⁺		I γ : from coin data≈60% of singles intensity of the doublet (I γ =42 3) belongs this transition.
1116.0 10	100	1116	9/2 ⁺	0.0	5/2 ⁺	Q	
1515.1 10	7 2	1515	9/2 ⁺	0.0	5/2 ⁺		

† Deduced from $\gamma(\theta)$.

‡ Multiply placed with intensity suitably divided.

^x γ ray not placed in level scheme.

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Level Scheme

Intensities: Relative I_γ
 @ Multiply placed: intensity suitably divided

Legend

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

