

$^{94}\text{Zr}(t,p\gamma)$ 1986HeZP

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	D. Abriola(a), A. A. Sonzogni		NDS 109, 2501 (2008)	1-Apr-2008

1986HeZP,1986HeZT: E=8-18 MeV; measured $E\gamma$, $I\gamma$, ce spectra, $p\gamma$ coin, pce coin, $p\gamma\gamma$ coin, $\alpha(K)\text{exp}$. $\alpha(K)\text{exp}$ data not given by authors.

Other: 1988HeZM.

 ^{96}Zr Levels

E(level) [†]	J π [#]	T _{1/2}	Comments
0.0	0 ⁺		
1582	0 ⁺		
1750.4	2 ⁺		
1897.1	3 ⁻		
2225.6	2 ⁺		
2438.7	3 ⁺		
2669.0	(2 ⁺)		
2694.1	0 ⁺	<0.3 ns	T _{1/2} : from 1986HeZP; by centroid shift method.
2857.5	4 ⁺		
2925.3	0 ⁺		
3082.5	4 ⁺		
3120.0	5 ⁻		
3150.5 [‡]	3 ⁻		
3176.6	4 ⁺		
3211.9 [‡]	2 ⁺		
3309.9	(4 ⁺ ,5 ⁺ ,6 ⁺)		
3483.5	6 ⁺		
3749.3 [‡]	4 ⁺		
3772.4 [‡]	6 ⁺		
4014.1 [‡]	5 ⁻		
4234.5	7 ⁻		
4389 [‡]	8 ⁺		

[†] From expanded data of 1986HeZP for (t,p γ) given in 1989Mo15.

[‡] Given in 1989Mo15; not shown in 1986HeZP.

[#] From Adopted Levels.

 $\gamma(^{96}\text{Zr})$

E _i (level)	J π _i	E γ [†]	I γ [‡]	E _f	J π _f	Mult. [#]
1582	0 ⁺	1582		0.0	0 ⁺	
1750.4	2 ⁺	1750.4		0.0	0 ⁺	
1897.1	3 ⁻	146.7	91	1750.4	2 ⁺	
		1897.1	9	0.0	0 ⁺	
2225.6	2 ⁺	328.5	8	1897.1	3 ⁻	
		475.2	29	1750.4	2 ⁺	M1,E2
		643.6	15	1582	0 ⁺	
		2225.6	48	0.0	0 ⁺	
2438.7	3 ⁺	688.3		1750.4	2 ⁺	
2669.0	(2 ⁺)	771.9	7	1897.1	3 ⁻	
		918.6	93	1750.4	2 ⁺	M1,E2
2694.1	0 ⁺	468.5	100	2225.6	2 ⁺	[E2]

Continued on next page (footnotes at end of table)

${}^{94}\text{Zr}(t,p\gamma)$ 1986HeZP (continued) $\gamma({}^{96}\text{Zr})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\ddagger	E_f	J_f^π	Mult. #	$\alpha^\&$	Comments
2694.1	0 ⁺	1112.1		1582	0 ⁺	E0		I_γ : ce(K)/I(469 γ)=0.00015 to 0.00018 (1986HeZP).
		2694.1		0.0	0 ⁺	E0		I_γ : ce(K)/I(469 γ)=0.000030 (1986HeZP).
2857.5	4 ⁺	631.9	14	2225.6	2 ⁺			
		1107.1	86	1750.4	2 ⁺			
2925.3	0 ⁺	699.7	30	2225.6	2 ⁺	(E2) [@]		
		1174.9	70	1750.4	2 ⁺	(E2) [@]		
3082.5	4 ⁺	1185.4		1897.1	3 ⁻	E1		
3120.0	5 ⁻	1222.9		1897.1	3 ⁻	(E2) [@]		
3176.6	4 ⁺	1279.5		1897.1	3 ⁻	E1		
3309.9	(4 ⁺ ,5 ⁺ ,6 ⁺)	227.4		3082.5	4 ⁺	E2	0.0581	$\alpha(\text{K})=0.0496$; $\alpha(\text{L})=0.00644$; $\alpha(\text{N}+\dots)=0.00019$
3483.5	6 ⁺	173.6	≈ 2	3309.9	(4 ⁺ ,5 ⁺ ,6 ⁺)			
		363.5	≈ 98	3120.0	5 ⁻	E1		
4234.5	7 ⁻	1114.5		3120.0	5 ⁻			

[†] From difference in energies of initial and final levels. Placement of gammas from 1986HeZP.

[‡] % photon branching from each level (1986HeZP).

From 1986HeZP based on $\alpha(\text{exp})$ data; $\alpha(\text{exp})$ not given by authors.

@ Reported as M1,E2; M1 eliminated from spin difference.

& Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ -ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.

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Level Scheme

Intensities: % photon branching from each level

