⁹⁴**Mo(n,n**′γ) **2003Fr02**

History						
Туре	Author	Citation	Literature Cutoff Date			
Full Evaluation	D. Abriola(a), A. A. Sonzogni	NDS 107, 2423 (2006)	1-Jan-2006			

⁹⁴Mo Levels

E=2.4, 3.3, 3.6 MeV. Measured E γ , I γ , $\gamma\gamma$, $\gamma(\theta)$ and lifetimes by Doppler-shift attenuation method using a Compton-suppressed HPGe detector and a BGO detector.

E(level) [#]	J^{π}	$T_{1/2}^{\dagger}$	E(level) [#]	\mathbf{J}^{π}	$T_{1/2}^{\dagger}$
0	0^{+}	1/2	2993 15 20	2+	$\frac{1}{2}$
871.15 5	2^{+}		3011.56 17	3-	0.22 ps +6-4
1573.82 8	4+		3026.95 21	(3)	$>0.54^{\ddagger}$ ps
1741.67 16	0^{+}		3072.47 17	$(2,3^{+})$	0.35^{\ddagger} ps +7-6
1864.36 7	2+	0.28 ps +6-5	3082.51 25	(3+)	0.70 ps +28-17
2067.39 7	2+	35 fs 3	3128.70 8	1+	6.5 [‡] fs 4
2294.84 17	4^{+}	76 fs 11	3163.34 20	(3^{+})	63 fs 7
2393.05 7	2+	83 fs +12-10	3201.16 24	(4)	44 fs +6-5
2423.53 13	6+	>0.31 ps	3243.2 5	(5^{+})	92 fs +16-15
2533.92 13	3-	0.52 ps +9-8	3260.8 5	1-	40^{\ddagger} fs 4
2565.04 20	4+	0.16 ps + 5 - 3	3307.2 4	2^{+}	0.40 ps $+14-9$
2610.62 19	5-	0.44 ps + 11 - 8	3331.80 18	(3^{+})	52 fs $\hat{6}$
2739.94 7	1^{+}	53 [‡] fs 5	3371.2 3	(2,3,4)	0.14^{\ddagger} ps +7-4
2767.67 19	4^{+}	107 fs 12	3398.3 4	(3,4)	35 fs $+7-6$
2780.57 21	0^{+}	0.48^{\ddagger} ps +12-9	3400.88 18		22.9 [‡] fs 28
2805.09 20	3+	0.35 ps + 5 - 4	3429.2 8		
2835.0 <i>3</i>	(4 ⁻)	>0.69 ps	3447.7 <i>4</i>	(2)	35 fs +5-4
2869.94 9	2^{+}	91 fs 10	3511.88 14	$1^{(+)}$	9 [‡] fs +6-3
2872.53 16	6+		3531.6 4	$(1,2^+)$	
2965.47 7	3+	52 fs 6	3588.6 5	/	

[†] From a combination of $(\alpha,n\gamma)$ and $(n,n'\gamma)$ experiments.

[‡] From $(n,n'\gamma)$ experiment only.

[#] From least-squares fit to $E\gamma$.

$\gamma(^{94}Mo)$

E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\dagger}	$\mathbf{E}_f = \mathbf{J}_f^{\pi}$	Mult. [‡]	δ^{\ddagger}	Comments
871.15	2^{+}	871.09 10	100	$0 0^+$			
1573.82	4^{+}	702.63 10	100	871.15 2+	E2(+M3)	0.00 4	
1741.67	0^{+}	871.4 5		871.15 2+	. ,		E_{γ} : from adopted gammas.
1864.36	2^{+}	993.1 <i>1</i>	100.0 10	871.15 2+	M1+E2	-2.0 10	, , , , , , , , , , , , , , , , , , , ,
		1864.3 2	10.3 10	$0 0^+$			
2067.39	2^{+}	1196.2 <i>1</i>	100.0 7	871.15 2+	M1+E2	+0.15 4	
		2067.4 1	15.1 7	$0 0^+$			
2294.84	4^{+}	721.0 2	100.0 2	1573.82 4+	M1(+E2)	+0.03 4	
		1423.7 <i>3</i>	13.3 2	871.15 2+	E2(+M3)	+0.08 8	
2393.05	2^{+}	325.7 <i>3</i>	0.61 14	2067.39 2+			
		528.7 <i>3</i>	0.72 3	1864.36 2+			
		1521.8 <i>1</i>	100.0 20	871.15 2+	M1+E2	-0.12 3	
		2393.1 <i>1</i>	11.11 22	$0 0^+$			
2423.53	6+	849.7 <i>1</i>	100	1573.82 4+	E2(+M3)	-0.04 5	
2533.92	3-	466.4 <i>3</i>	57.3 10	2067.39 2+	E1(+M2)	0.00 3	
		669.6 2	31.9 <i>13</i>	1864.36 2+	E1(+M2)	-0.03 13	

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⁹⁴Mo(n,n'γ) 2003Fr02 (continued)

$\gamma(^{94}Mo)$ (continued)

E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\dagger}	$E_f J_f^{\pi}$	Mult. [‡]	δ^{\ddagger}	Comments
2533.92	3-	960.1 <i>3</i>	81 3	1573.82 4+	E1(+M2)	0.00 2	
		1662.7.3	100.0 22	871.15 2+	E1(+M2)	+0.037	
2565.04	4+	991.2 2	100.0 8	1573.82 4+	M1(+E2)	+0.10 + 25 - 17	
		1693.9 7	11.8 8	871.15 2+	E2(+M3)	$-0.01 \ 10$	
2610.62	5-	1036.8 2	100	1573.82 4+	E1(+M2)	0.00 4	
2739.94	1+	672.0 7	3.0.5	2067.39 2+			
		875.5 2	24.4 5	1864.36 2+	M1+E2	-0.102	
		998.2.2	4.44 10	1741.67 0+			
		1868.8 7	100.0 20	871.15 2+	M1+E2	-0.122	
		2739.9 1	65.4 13	$0 0^+$			
2767.67	4+	1193.8.5	71 4	1573.82 4+			
		1896.5 2	100 4	871.15 2+	$E_{2}(+M_{3})$	+0.02.3	
2780.57	0^{+}	916.2.2	100	1864.36 2+	(`````		
2805.09	3+	940.7 4	63 4	1864.36 2+	M1+E2	+2.3 + 7 - 5	
	-	1231.2.3	100.5	1573.82 4+	M1+E2	+8 + 5 - 3	
		1933.9 4	76.3	871.15 2+	M1+E2		δ : - 1.7 + 4 - 5 or - 0.66 14.
2835.0	(4^{-})	224.2 5	7.2 10	2610.62 5-	M1+E2		δ : + 3.3 +10-19 or + 0.18 12.
		301.1 3	13.1 12	2533.92 3-	M1+E2	+0.12 10	
		1261.1 5	100.0	1573.82 4+	E1(+M2)	+0.067	
2869.94	2^{+}	802.6 2	26.2 15	2067.39 2+			
		1005.5 /	100 4	1864.36 2+	M1+E2	-0.054	
		1998.9 2	13.1 6	871.15 2+	M1+E2	+1.3 + 14 - 4	
		2870.0 2	17.3.5	$0 0^+$			
2872.53	6+	449.0 1	100	2423.53 6+	M1+E2	+0.14 6	
2965.47	3+	898.17	23.0 12	$2067.39 2^+$	M1+E2		δ : + 2.0 + 12-6 or + 0.39 25.
		1101.1 <i>I</i>	100.0 23	1864.36 2+	M1+E2	-0.09 6	
		1391.6 <i>1</i>	63.0 24	1573.82 4+	M1+E2	-0.08 6	
		2094.3 1	36.9 14	871.15 2+	M1+E2	+1.1 + 10 - 4	
2993.15	2^{+}	925.8 <i>3</i>	45 <i>3</i>	2067.39 2+	M1(+E2)	-0.07 + 7 - 6	
		1128.6 5	100 4	1864.36 2+	M1+E2	-3.4 + 7 - 9	
		2122.0 3	63.7 15	871.15 2+	M1+E2	-2.6 +6-7	
		2993.0 10	6.8 9	$0 0^+$			
3011.56	3-	477.5 5	50.9 17	2533.92 3-	M1(+E2)	-0.10 19	
		944.3 6	11.9 16	2067.39 2+			
		1147.3 5	11.5 15	1864.36 2+	E1(+M2)	+0.01 6	
		1437.6 5	37 <i>3</i>	1573.82 4+	E1(+M2)	+0.04 6	
		2140.4 2	100.0 23	871.15 2+	E1(+M2)	+0.03 5	
3026.95	(3)	416.4 <i>3</i>	100 4	2610.62 5-			
		493.0 2	60 4	2533.92 3-			
3072.47	$(2,3^{+})$	538.5 7	11.5 23	2533.92 3-			
		1208.1 2	100 5	1864.36 2+			
		2201.3 <i>3</i>	37.3 22	871.15 2+			
3082.51	(3^{+})	1218.2 4	14.2 21	1864.36 2+	M1+E2	+0.09 5	
		2211.3 <i>3</i>	100.0 21	871.15 2+	M1(+E2)	-0.01 6	
3128.70	1^{+}	1061.1 5	1.16 11	2067.39 2+	M1+E2		δ : - 7 +3-20 or - 0.57 16.
		1264.3 <i>1</i>	18.3 4	1864.36 2+	M1+E2	-0.08 3	
		2257.6 1	4.29 10	871.15 2+	M1+E2	+0.74 +21-17	
		3128.5 2	100.0 3	$0 0^+$			
3163.34	(3^{+})	358.0 5	16.7 <i>13</i>	2805.09 3+	M1+E2	-0.35 12	
		2292.2 2	100.0 13	871.15 2+	M1+E2	+0.17 4	
3201.16	(4)	906.3 2	100.0 22	2294.84 4+	D(+Q)	0.00 6	
		1627.4 5	29.4 22	1573.82 4+	D(+Q)	+0.2 2	
3243.2	(5 ⁺)	1669.4 5	100	1573.82 4+	M1+E2	+0.71 14	
3260.8	1-	3260.7 5	100	$0 0^+$			
3307.2	2^{+}	2436.0 4	100	871.15 2+	M1+E2		δ : - 4.0 +11-24 or + 0.03 8.
3331.80	(3^{+})	1467.3 <i>3</i>	48 <i>3</i>	1864.36 2+	M1(+E2)	+0.3 + 29 - 2	

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				⁹⁴ Mo(n,	n'γ) 200	3Fr02 (con	tinued)		
γ ⁽⁹⁴ Mo) (continued)									
E _i (level)	\mathbf{J}_i^π	E_{γ}^{\dagger}	I_{γ}^{\dagger}	$\mathbf{E}_f = \mathbf{J}_f^{\pi}$	Mult. [‡]	δ^{\ddagger}	Comments		
3331.80	(3 ⁺)	1758.0 2	100 6	1573.82 4+	M1+E2	-0.10 3			
		2460.8 8	7.4 11	871.15 2+					
3371.2	(2,3,4)	405.8 5	83 7	2965.47 3+					
		806.1 5	93 8	2565.04 4+					
		1303.7 7	26 4	2067.39 2+					
		1797.4 5	100 7	1573.82 4+					
3398.3	(3,4)	1824.5 4	100	1573.82 4+					
3400.88		1536.5 2	4.2 8	1864.36 2+					
		2529.7 <i>3</i>	100.0 8	871.15 2+					
3429.2		2558.0 8	100	871.15 2+					
3447.7	(2)	2576.5 5	100.0 3	871.15 2+	D+Q		δ : - 1.9 +50-6 or - 0.08 10.		
		3447.5 10	5.1 <i>3</i>	$0 0^+$					
3511.88	$1^{(+)}$	1770.4 2	49 9	1741.67 0+					
		2640.7 <i>3</i>	51.6 <i>13</i>	871.15 2+					
		3511.6 2	100.0 11	$0 0^+$					
3531.6	$(1,2^{+})$	1789.8 5	78 <i>5</i>	1741.67 0+					
		2660.1 10	100 8	871.15 2+					
		3532.0 10	19.8 25	$0 0^+$					
3588.6		978.0 5	100	2610.62 5-					

[†] From a combination of four experiments: (γ, γ') ; ⁹⁴Tc ε decay; $(\alpha, n\gamma)$ and $(n, n'\gamma)$. [‡] From a combination of three experiments: ⁹⁴Tc ε decay; $(\alpha, n\gamma)$ and $(n, n'\gamma)$.

94 Mo(n,n' γ) 2003Fr02

Level Scheme

Intensities: Relative photon branching from each level





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Level Scheme (continued)

Intensities: Relative photon branching from each level



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 $^{94}_{42}\mathrm{Mo}_{52}\text{--}5$