

²⁴Mg(⁵⁴Fe,2pn γ) 1989Ch36

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Alexandru Negret, Balraj Singh	NDS 114, 841 (2013)	30-Jun-2013

1989Ch36: ²⁴Mg(⁵⁴Fe,2pn γ) E=177, 190 MeV, measured γ , n γ , $\gamma\gamma$ using a recoil separator, 14 BGO-shielded germanium detectors and 10 neutron detectors.

⁷⁵Kr Levels

E(level)	J π [†]	E(level)	J π [†]	E(level)	J π [†]	E(level)	J π [†]
0.0 [‡]	5/2 ⁺	904.88 ^{&} 9	(9/2 ⁻)	2562.54 ^{&} 16	(17/2 ⁻)	4286.0 [@] 6	(23/2 ⁻)
179.02 [@] 6	(3/2 ⁻)	1067.63 [‡] 10	13/2 ⁺	2627.96 [#] 14	19/2 ⁺	4817.9 ^{&} 9	(25/2 ⁻)
187.28 [#] 6	7/2 ⁺	1265.45 [@] 9	(11/2 ⁻)	3048.96 [‡] 15	(21/2 ⁺)	5459.8 [@] 10	(27/2 ⁻)
358.02 ^{&} 8	(5/2 ⁻)	1593.95 [#] 10	15/2 ⁺	3109.90 [@] 21	(19/2 ⁻)	5555.41 [‡] 24	(29/2 ⁺)
377.96 [‡] 7	9/2 ⁺	1646.48 ^{&} 14	(13/2 ⁻)	3623.1 ^{&} 5	(21/2 ⁻)	6682.3 [@] 15	(31/2 ⁻)
611.43 [@] 9	(7/2 ⁻)	1964.01 [‡] 10	17/2 ⁺	3823.97 [#] 23	(23/2 ⁺)	6888.0 [‡] 4	(33/2 ⁺)
770.12 [#] 8	11/2 ⁺	2109.30 [@] 15	(15/2 ⁻)	4275.75 [‡] 18	(25/2 ⁺)	8384.6 [‡] 7	(37/2 ⁺)

[†] As listed in 1989Ch36 based on band assignments. The assignments are the same in Adopted Levels with the exception of some in parentheses.

[‡] Band(A): 5/2[422], $\alpha=+1/2$.

[#] Band(B): 5/2[422], $\alpha=-1/2$.

[@] Band(C): 3/2[301], $\alpha=-1/2$.

[&] Band(D): 3/2[301], $\alpha=+1/2$.

γ (⁷⁵Kr)

E γ	I γ [†]	E _i (level)	J π _i	E _f	J π _f	Comments
179.01 [#] 6		179.02	(3/2 ⁻)	0.0	5/2 ⁺	
179.01 [#] 6		358.02	(5/2 ⁻)	179.02	(3/2 ⁻)	Additional information 1.
187.31 7	100 6	187.28	7/2 ⁺	0.0	5/2 ⁺	
190.72 7	71 6	377.96	9/2 ⁺	187.28	7/2 ⁺	
253.42 5	55 3	611.43	(7/2 ⁻)	358.02	(5/2 ⁻)	
293.50 6	18 2	904.88	(9/2 ⁻)	611.43	(7/2 ⁻)	
297.46 10	18 2	1067.63	13/2 ⁺	770.12	11/2 ⁺	I γ (297.5)/I γ (689.5)=25 2/75 4.
358.10 18		358.02	(5/2 ⁻)	0.0	5/2 ⁺	
360.62 7	15 4	1265.45	(11/2 ⁻)	904.88	(9/2 ⁻)	I γ (360.6)/I γ (654.0)=37 2/63 4.
370.12 6	6 2	1964.01	17/2 ⁺	1593.95	15/2 ⁺	I γ (370.1)/I γ (896.3)=13 2/87 5.
377.90 10	25 7	377.96	9/2 ⁺	0.0	5/2 ⁺	I γ (377.9)/I γ (190.7)=29 2/71 3.
381.01 16	11 2	1646.48	(13/2 ⁻)	1265.45	(11/2 ⁻)	I γ (381.0)/I γ (741.6)=36 3/64 4.
392.27 9	31 3	770.12	11/2 ⁺	377.96	9/2 ⁺	
421.01 11	5 2	3048.96	(21/2 ⁺)	2627.96	19/2 ⁺	
432.31 14	20 2	611.43	(7/2 ⁻)	179.02	(3/2 ⁻)	I γ (432.3)/I γ (253.4)=28 2/72 4.
453.25 11	4 2	2562.54	(17/2 ⁻)	2109.30	(15/2 ⁻)	Additional information 2.
						I γ (453.2)/I γ (915.9)=12 3/88 6.
463.03 21	6 2	2109.30	(15/2 ⁻)	1646.48	(13/2 ⁻)	I γ (463.0)/I γ (843.9)=15 2/85 5.
526.38 18	14 2	1593.95	15/2 ⁺	1067.63	13/2 ⁺	I γ (526.4)/I γ (823.9)=42 3/58 4.
546.86 4	17 3	904.88	(9/2 ⁻)	358.02	(5/2 ⁻)	I γ (546.9)/I γ (293.5)=47 4/53 3.
547.18 19	2 1	3109.90	(19/2 ⁻)	2562.54	(17/2 ⁻)	
582.83 6	25 2	770.12	11/2 ⁺	187.28	7/2 ⁺	I γ (582.8)/I γ (392.3)=45 2/55 3.
654.00 4	25 3	1265.45	(11/2 ⁻)	611.43	(7/2 ⁻)	

Continued on next page (footnotes at end of table)

$^{24}\text{Mg}(^{54}\text{Fe}, 2\text{pn}\gamma)$ 1989Ch36 (continued) $\gamma(^{75}\text{Kr})$ (continued)

E_γ	I_γ^\dagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
663.95 12	6 2	2627.96	19/2 ⁺	1964.01	17/2 ⁺	$I_\gamma(663.9)/I_\gamma(1034.1)=24\ 4/76\ 6.$
689.54 11	56 3	1067.63	13/2 ⁺	377.96	9/2 ⁺	
741.58 23	20 3	1646.48	(13/2 ⁻)	904.88	(9/2 ⁻)	
823.92 8	19 3	1593.95	15/2 ⁺	770.12	11/2 ⁺	
843.87 14	34 3	2109.30	(15/2 ⁻)	1265.45	(11/2 ⁻)	
896.29 7	43 4	1964.01	17/2 ⁺	1067.63	13/2 ⁺	
915.88 17	27 4	2562.54	(17/2 ⁻)	1646.48	(13/2 ⁻)	
1000.84 22	21 4	3109.90	(19/2 ⁻)	2109.30	(15/2 ⁻)	
1034.07 22	18 2	2627.96	19/2 ⁺	1593.95	15/2 ⁺	
1060.6 4	11 2	3623.1	(21/2 ⁻)	2562.54	(17/2 ⁻)	
1084.92 14	27 3	3048.96	(21/2 ⁺)	1964.01	17/2 ⁺	
1173.8 8	<20 [‡]	5459.8	(27/2 ⁻)	4286.0	(23/2 ⁻)	
1176.1 5	<20 [‡]	4286.0	(23/2 ⁻)	3109.90	(19/2 ⁻)	
1194.7 8	10 3	4817.9	(25/2 ⁻)	3623.1	(21/2 ⁻)	
1195.99 18	14 3	3823.97	(23/2 ⁺)	2627.96	19/2 ⁺	
1222.5 11	5 2	6682.3	(31/2 ⁻)	5459.8	(27/2 ⁻)	
1226.78 11	16 3	4275.75	(25/2 ⁺)	3048.96	(21/2 ⁺)	
1280.65 15	13 3	5555.41	(29/2 ⁺)	4275.75	(25/2 ⁺)	
1331.61 25	6 3	6888.0	(33/2 ⁺)	5555.41	(29/2 ⁺)	
1496.5 6	5 3	8384.6	(37/2 ⁺)	6888.0	(33/2 ⁺)	

[†] From neutron-gated coincidence spectra and from sums of the gated spectra. Branching ratios, determined independently from γ spectra gated by feeding transitions, are given under comments.

[‡] Unresolved, combined $I_\gamma=20\ 3.$

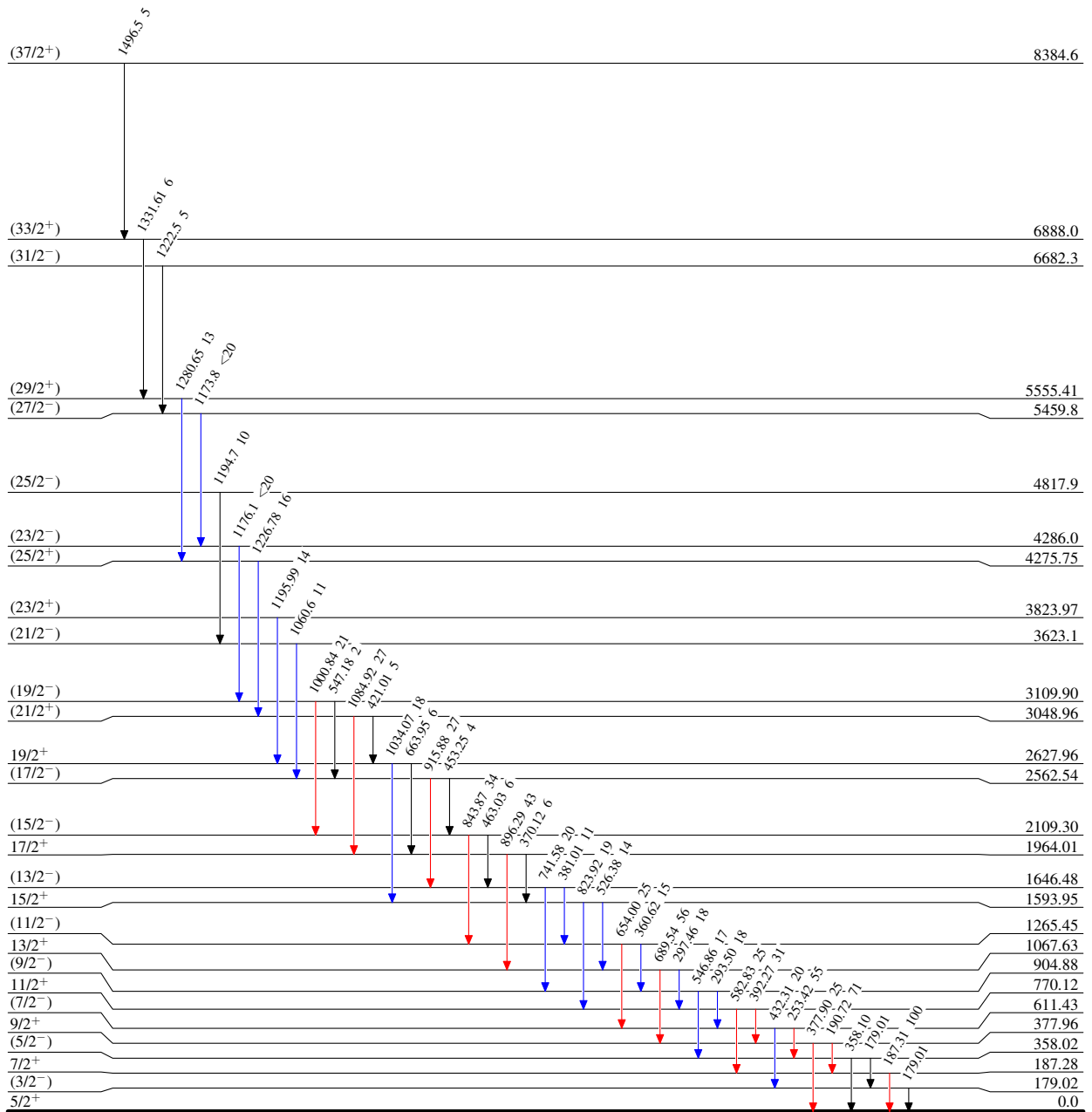
[#] Multiply placed.

$^{24}\text{Mg}(^{54}\text{Fe},2\text{pn}\gamma)$ 1989Ch36

Level Scheme
Intensities: Relative I_γ

Legend

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



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