

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 113,909 (2012)	1-Jan-2012

$Q(\beta^-)=7602$ 12; $S(n)=3655$ 12; $S(p)=16903$ 16; $Q(\alpha)=-1.097\times 10^4$ 5 [2012Wa38](#)
 Note: Current evaluation has used the following Q record 7613 11 3655 12 16903 15 -10968 46 [2011AuZZ,2003Au03](#).
[2003Au03](#): $Q(\beta^-)=7596$ 14.

[2007No13](#): ~ 0.1 mb and ~ 0.12 mb production cross sections were measured for ^{29}Mg in ^{40}Ar fragmentation reactions of $^9\text{Be}(^{40}\text{Ar},X)$, $E=90$ MeV/nucleon, and $^{181}\text{Ta}(^{40}\text{Ar},X)$, $E=94$ MeV/nucleon, respectively.

[2006Kh08](#): ^{29}Mg beam, 59.64 and 52.15 MeV/nucleon, bombarded a Si target, measured $\sigma=2226$ mb 334 and $\sigma=2246$ mb 85, respectively, for the $\text{Si}(^{29}\text{Mg},x)$ reaction and a squared reduced absorption radius $r_0^2=1.18$ fm² 4 is deduced and used to study the isospin dependence.

 ^{29}Mg LevelsCross Reference (XREF) Flags

A	$^{29}\text{Na} \beta^-$ decay	F	$^{13}\text{C}(^{18}\text{O},2p)$
B	$^{30}\text{Na} \beta^- n$ decay	G	$^{26}\text{Mg}(^{11}\text{B},^8\text{B})$
C	$^{31}\text{Na} \beta^- 2n$ decay	H	$^{26}\text{Mg}(^{18}\text{O},^{15}\text{O})$
D	$^2\text{H}(^{30}\text{Mg},^{29}\text{Mg}\gamma)$	I	$^{30}\text{Si}(^{13}\text{C},^{14}\text{O})$
E	$^9\text{Be}(^{30}\text{Mg},^{29}\text{Mg}\gamma)$		

E(level) [†]	J ^π	T _{1/2}	XREF	Comments
0	3/2 ⁺	1.30 s 12	ABCDEFGHI	$\% \beta^- = 100$ $\mu = +0.9780$ 6 J^π : From β -NMR spectroscopy (2008Ko05). configuration: $\nu d_{3/2}$. $\delta \langle r^2 \rangle (^{26}\text{Mg}, ^{29}\text{Mg}) = +0.256$ fm ² 6 (stat) 36 (syst) (2012Yo01). Charge radius $\langle r^2 \rangle^{1/2} = 3.0759$ fm 9 (stat) 64 (syst) (2012Yo01). Matter radius $\langle r^2 \rangle^{1/2} = 3.00$ fm 3 and 3.00 fm 5 (1998Su07). $T_{1/2}$: weighted av: 1.20 s 13 (2224 γ -t in $^{29}\text{Mg} \beta^-$ decay – 1973Go34), 1.49 s 9 ($^{29}\text{Mg} \beta^-$ decay multiscaling – 1974Ro31), and 1.09 s 12 (sum 960.3 γ +2223.8 γ – time in $^{29}\text{Mg} \beta^-$ decay – 1979De02). μ : From 2008Ko05 , 2011StZZ . $T_{1/2}$: Deduced from the delayed coincidence measurement of cascade 2560 γ -55 γ and 3169 γ -55 γ in the $^{29}\text{Na} \beta^-$ decay (1987Ba46).
54.60 10		1.27 ns 7	ABCDE I	
590? 80			F	
1094.62 21	(1/2 ⁻ , 3/2 ⁻)		ABC E I	J^π : L=1 in ($^{30}\text{Mg}, ^{29}\text{Mg}\gamma$).
1430.7 4	(5/2 ⁻ , 7/2 ⁻)	1.4 ns 5	B EFGHI	J^π : L=3 in ($^{30}\text{Mg}, ^{29}\text{Mg}\gamma$).
1638.06 19	(3/2 ⁺ , 5/2 ⁺)		ABC E	$T_{1/2}$: From ($^{30}\text{Mg}, ^{29}\text{Mg}\gamma$). XREF: E(1643). J^π : L=2 in ($^{30}\text{Mg}, ^{29}\text{Mg}\gamma$).
2265.9 7			B FGH	
2499.9 10	(3/2 to 7/2)		A E H	J^π : L=(2,3) in ($^{30}\text{Mg}, ^{29}\text{Mg}\gamma$).
2614.9 4	(1/2, 3/2)		A E	J^π : L=(0,1) in ($^{30}\text{Mg}, ^{29}\text{Mg}\gamma$).
3223.71 24			A GHI	
3227.5 6	(3/2 ⁺ , 5/2 ⁺)		A E	J^π : L=2 in ($^{30}\text{Mg}, ^{29}\text{Mg}\gamma$).
3674.1 15			A E	
3985.7 15			A H	
4280 40			GH	

[†] From a least-squares fit to γ -ray energies, for levels with depopulating γ -rays. Otherwise from the corresponding dataset.

Adopted Levels, Gammas (continued)

$\gamma(^{29}\text{Mg})$					
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π
54.60		54.6 1	100	0	$3/2^+$
1094.62	$(1/2^-, 3/2^-)$	1040.0 [#] 2	100	54.60	
1430.7	$(5/2^-, 7/2^-)$	336.1 [‡] 3	100 [‡]	1094.62	$(1/2^-, 3/2^-)$
1638.06	$(3/2^+, 5/2^+)$	1638.0 2	100	0	$3/2^+$
2265.9		2211.0 [‡] 10	100 [‡] 25	54.60	
		2266.0 [‡] 10	25 [‡] 8	0	$3/2^+$
2499.9	$(3/2 \text{ to } 7/2)$	2445.1 13	100 [@] 10	54.60	
		2499.9 13	61 [@] 10	0	$3/2^+$
2614.9	$(1/2, 3/2)$	2560.2 4	100.0 [@] 3	54.60	
		2614.8 5	4.7 [@] 3	0	$3/2^+$
3223.71		1585.6 2	100 [@] 4	1638.06	$(3/2^+, 5/2^+)$
		2129.0 6	23.9 [@] 22	1094.62	$(1/2^-, 3/2^-)$
		3169.0 8	65 [@] 4	54.60	
		3223.6 10	28.3 [@] 22	0	$3/2^+$
3227.5	$(3/2^+, 5/2^+)$	2132.8 8	22 [@] 3	1094.62	$(1/2^-, 3/2^-)$
		3172.6 10	6.4 [@] 13	54.60	
		3227.3 10	100 [@] 3	0	$3/2^+$
3674.1		3673.9 15	100	0	$3/2^+$
3985.7		3985.4 15	100	0	$3/2^+$

[†] From ^{29}Na β^- decay, except otherwise noted.

[‡] From ^{30}Na β^-n decay.

[#] Weighted average of data from ^{29}Na β^- decay and ^{30}Na β^-n decay.

[@] Branching from 1987Ba46 (^{29}Na β^- decay).

Adopted Levels, GammasLevel Scheme

Intensities: Relative photon branching from each level

