^{25}Mg(d,α) 1978Po03,1967Ha17,1967Du02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia[#], A. Chakraborty[##]	NDS 171,1 (2021)	1-Jun-2020

Other references: 1974Ta03, 1969Ho08, 1969Bo30, 1968Ne08, 1967Wa15, 1967Du02, 1966Ja05, 1965Go03.
$J^\pi(^{25}Mg)=5/2^+$.
1978Po03: ^{25}Mg(d,α) E=12.07,11.82,11.57 MeV. Measured $\sigma(E_\alpha)$ Measured integrated σ.
1967Ha17: ^{25}Mg(d,α) E=8,10 MeV. Measured $\sigma(E_\alpha)$. Deduced excited level energies.
1967Du02: ^{25}Mg(d,α) E=10 MeV. 93% enriched target. Measured α particle energy spectrum; Deduced excited level energies.

^{23}Na Levels

E(level)[†]	J^π[#]	Average σ[&]	Comments
0	$3/2^+$	124 *4*	$\sigma/(2J+1)$=31.0 μb *10* (1978Po03).
438 *3*	$5/2^+$	191 *13*	E(level): Other: 438 *6* (1967Du02). $\sigma/(2J+1)$=31.8 μb *22* (1978Po03).
2076 *3*	$7/2^+$	231 *15*	E(level): Other: 2079 *8* (1967Du02). $\sigma/(2J+1)$=28.9 μb *19* (1978Po03).
2395 *4*	$1/2^+$	36 *4*	E(level): Other: 2393 *8* (1967Du02). $\sigma/(2J+1)$=18.0 μb *20* (1978Po03).
2643 *5*	$1/2^-$	44 *3*	E(level): Other: 2640 *10* (1967Du02). $\sigma/(2J+1)$=22.0 μb *15* (1978Po03).
2707 *5*	$9/2^+$	245 *8*	E(level): Other: 2705 *8* (1967Du02). $\sigma/(2J+1)$=24.5 μb *8* (1978Po03).
2983 *5*	$3/2^+$	113 *4*	E(level): Other: 2988 *8* (1967Du02). $\sigma/(2J+1)$=28.2 μb *10* (1978Po03). J^π: 5/2 in 1969Bo30.
3678 *3*	$3/2^-$	76 *6*	E(level): Other: 3681 *10* (1967Du02). $\sigma/(2J+1)$=19.0 μb *15* (1978Po03).
3849 *3*	$5/2^-$	174 *6*	E(level): Other: 3851 *12* (1967Du02). $\sigma/(2J+1)$=29.0 μb *10* (1978Po03).
3915 *3*	$5/2^+$	124 *7*	E(level): Other: 3951 *12* (1967Du02). $\sigma/(2J+1)$=20.7 μb *12* (1978Po03).
4431 *4*	$1/2^+$	51 *3*	E(level): Other: 4433 *12* (1967Du02). $\sigma/(2J+1)$=25.5 μb *15* (1978Po03).
4774 *5*	$7/2^+$	169 *4*	E(level): Other: 4772 *12* (1967Du02). $\sigma/(2J+1)$=21.1 μb *5* (1978Po03).
5380 *4*	5/2[@]	149 *8*	E(level): Other: 5380 *15* (1967Du02).
5535 *3*	$11/2^+$	264 *4*	E(level): Other: 5535 *12* (1967Du02). $\sigma/(2J+1)$=22.0 μb *10* (1978Po03).
5742 *3*			E(level): Other: 5741 *20* (1967Du02).
5762 *6*	7/2,(3/2,9/2)[@]	225 *8*	E(level): Other: 5759 *20* (1967Du02).
5776 *6*			E(level): Other: 5779 *20* (1967Du02).
5928 *3*	5/2,7/2[@]	167 *7*	E(level): Other: 5930 *15* (1967Du02).
5964 *3*	1/2[@]	63 *5*	E(level): Other: 5965 *15* (1967Du02).
6042 *3*	5/2,7/2[@]	167 *7*	E(level): Other: 6046 *12* (1967Du02).
6115 *2*		480 *27*	E(level): Other: 6114 *12* (1967Du02). J^π: 15/2 to 23/2 (1978Po03).
6193 *4*	3/2,5/2[@]	114 *9*	E(level): Other: 6194 *15* (1967Du02).
6234 *3*	$(13/2^+)$	273 *19*	E(level): Other: 6236 *15* (1967Du02). $\sigma/(2J+1)$=19.5 μb *14* (1978Po03).
6308 *4*	$1/2^+$	65 *7*	E(level): Other: 6311 *20* (1967Du02). $\sigma/(2J+1)$=32.5 μb *35* (1978Po03).
6351 *3*		344 *4*	E(level): Other: 6347 *15* (1967Du02). J^π: 11/2 to 15/2 (1978Po03).
6577 *5*	5/2,7/2,9/2[@]	188 *15*	E(level): Other: 6583 *12* (1967Du02).

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^{25}Mg(d,α) 1978Po03,1967Ha17,1967Du02 (continued)

^{23}Na Levels (continued)

E(level)[†]	J$^\pi$[#]	Average σ[&]	Comments
6619 *5*	5/2,(7/2)[@]	152 *6*	E(level): Other: 6621 *15* (1967Du02).
6737 *3*	3/2[@]	93 *2*	E(level): Other: 6738 *15* (1967Du02).
6820 *3*	3/2,5/2[@]	127 *4*	E(level): Other: 6825 *15* (1967Du02).
6868 *3*	5/2[@]	181 *18*	E(level): Other: 6870 *15* (1967Du02).
6917 *5*	3/2[@]	73 *2*	E(level): Other: 6913 *20* (1967Du02).
6947 *3*	3/2[@]	74 *6*	E(level): Other: 6944 *20* (1967Du02).
7069 *4*		200 *14*	Average σ: For doublet (1978Po03).
7080 *4*			E(level): Other: 7077 *15* (1967Du02).
7131 *3*		384 *28*	E(level): Other: 7131 *15* (1967Du02). Average σ: For doublet (1978Po03).
7150 *3*			
7187 *3*		164 *9*	E(level): Other: 7188 *15* (1967Du02).
7271 *3*		385 *11*	E(level): Other: 7272 *15* (1967Du02).
7386 *5*		383 *20*	E(level): Other: 7394 *20* (1967Du02). Average σ: For doublet (1978Po03).
7403 *6*			E(level): Other: 7409 *20* (1967Du02).
7448 *4*	3/2,5/2[@]	125 *8*	E(level): Other: 7448 *15* (1967Du02).
7482 *5*	1/2[@]	30 *5*	E(level): Other: 7481 *20* (1967Du02).
7568 *3*	3/2[@]	97 *9*	E(level): Other: 7565 *20* (1967Du02).
7689 *4*	5/2,7/2[@]	167 *16*	E(level): Other: 7686 *15* (1967Du02).
7718 *8*	1/2[@]	35 *4*	E(level): Other: 7713 *25* (1967Du02).
7759 *3*	5/2,(3/2)[@]	138 *11*	E(level): Other: 7746 *15* (1967Du02).
7842 *3*		312 *21*	J$^\pi$: 9/2 to 15/2 (1978Po03).
7873 *7*		216 *9*	E(level): Other: 7882 *3* (1978Po03) – possible doublet in comparison to the energies of Adopted Levels. Average σ: For doublet (1978Po03).
7961 *8*			
7983 *8*			
8057 *7*			
8100 *9*			
8123 *10*			
8151 *10*			
8177 *10*			
8220 *10*			
8251 *8*			
8320 *8*			
8357 *8*			
8413 *8*			
8469 *8*			
8501 *8*			
8555 *8*			
8605 *8*			
8643 *7*			
8715 *10*			E(level): Possible doublet.
8796 *9*			
8819 *10*			
8942 *10*			
8965 *10*			
9037 *9*			
9071 *9*			
9104 *10*			
9170 *9*			
9210 *9*			

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^{25}Mg(d,α) 1978Po03,1967Ha17,1967Du02 (continued)

^{23}Na Levels (continued)

E(level)†	E(level)†	E(level)†
9280?‡ *11*	9425 *10*	9629?‡ *11*
9320?‡ *11*	9478 *10*	9675?‡ *11*
9400 *9*	9537?‡ *11*	9732?‡ *11*
		9802?‡ *11*

† From 1978Po03 for energies up to 7842 keV, and above from 1967Ha17.
‡ Observed at one angle only (1967Ha17).
# From Adopted Levels, except where otherwise noted.
@ From 1978Po03, based on measured cross sections and the proportionality established in their work, i.e. $\sigma/(2J+1)\sigma$=25 μb *5*.
& In units of μb (1978Po03).