

$^{23}\text{Na}(\alpha, \alpha)$  1971Ga22,1964Hi05

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 127, 69(2015)	1-Apr-2015

$J^\pi(^{23}\text{Na})=3/2^+$ .

Other: 1975Sp02:  $^{23}\text{Na}(\alpha, \alpha)$ , E=8.46 MeV. Measures  $\alpha\gamma$  coincidences.

1971Ga22:  $^{23}\text{Na}(\alpha, \alpha)$ , E=18 MeV. Measured  $\sigma(E, \theta)$ , multi-angle spectrograph. DWBA calculations.

1964Hi05:  $^{23}\text{Na}(\alpha, \alpha)$ , E=6, 13.02 MeV. Magnetic spectrograph.

 $^{22}\text{Na}$  Levels

E(level) <sup>‡</sup>	L	NC <sup>2</sup> S <sup>†</sup>	Comments
0.0	2	27,40	
583 5	2	11.1,16.2	
660 5	2	3.24	NC <sup>2</sup> S: For $j_n=3/2$ .
890 5	2	25.5	NC <sup>2</sup> S: For $j_n=5/2$ .
1528 5			
1945 7	2	25.8,40.8	E(level): Doublet.
1980 7	2	12.9,19.6	
2212 7	1	9.52,12.0	
2567 7	1	7.8,9.6	
2978 20	(2)	<0.9,1.4	
3062 7	2	1.68,2.56	
3526 10		<0.16	NC <sup>2</sup> S: For $j_n=3/2$ .
3704.4 10			
3951 10	0	1.4	NC <sup>2</sup> S: For $j_n=1/2$ .
4071.4 6	2	7.8	NC <sup>2</sup> S: For $j_n=5/2$ .
4317 10			
4362 10	0+2		
4467.0 7			
4523.4 7			
4583 10	1	12.0,15.3	
4640 20			
4732 <sup>#</sup> 10	(0)		
4769 10	(2)	4.56,7.20	
5063 10	0+2	0.86,0.26	
5115 10			
5167 10	0+2		
5322 10			
5436 10	1	3.72,4.90	
5600 10	0+2		
5728 <sup>#</sup> 15	(0)		
5738 10			
5828 20			
5865 10	0+2		
5958 10	1	19.6,26.4	
6004 20	2	5.64,8.96	
6074 20	0+2		
6183 10	(2)	1.95,3.28	
6236 10			
6324 10	(1)	6.48,8.60	
6429 10			
6528 <sup>#</sup> 10	(0)		
6543 10			
6594 20			
6641 20			

Continued on next page (footnotes at end of table)

$^{23}\text{Na}(^3\text{He},\alpha)$  **1971Ga22,1964Hi05 (continued)** $^{22}\text{Na}$  Levels (continued)

<u>E(level)<sup>‡</sup></u>	<u>L</u>	<u>NC<sup>2</sup>S<sup>†</sup></u>	<u>Comments</u>
6674 10	(0+2)		
6711 10	(1)	2.68,3.64	
6770 20			
6866 20			
6949 20			
7000 10	2	4.56,7.00	
7075 20			
7158 20			
7225 20			
7285 10	2	6.94,8.60	
7356 20			
7403 10			
7512 10	0	0.169	NC <sup>2</sup> S: For j <sub>n</sub> =1/2.

<sup>†</sup> For j<sub>n</sub>=l<sub>n</sub>+1/2, j<sub>n</sub>=l<sub>n</sub>-1/2, respectively. From [1971Ga22](#).

<sup>‡</sup> From [1964Hi05](#) if ΔE<10, otherwise from [1971Ga22](#), except as noted.

# From [1964Hi05](#).