

$^{22}\text{Na}(^3\text{He,d})$ 1995Sc36

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

$J^\pi(^{22}\text{Na})=3^+$.

Target: 0.7 mCi ^{22}Na target was prepared at ISOLDE, CERN, implanting ^{22}Na ions on a carbon foil (thickness $75 \mu\text{g}/\text{cm}^2$);

Projectile: ^3He beam, $E=30 \text{ MeV}$; Q3D spectrograph, deuteron spectra were obtained with a position-sensitive detection array (a sequence of several proportional wire chambers with cathod readouts), energy resolution of about $\Delta E \sim 1.5 \text{ keV}$, depending on reaction kinematics, the ejectiles were finally stopped in a scintillation detector. Deuteron and other particles were separated with ΔE -E arrangement. Measured deuteron spectra, angular distribution of deuteron groups at angles $\theta(\text{lab}=7.5^\circ \text{ to } 31^\circ)$, deduced spectroscopic factors. FWHM 15 keV.

 ^{23}Mg Levels

E(level) [†]	L [‡]	(2J+1)C ² S [#]	Comments
6236 8	2+0	0.47 10	(2J+1)C ² S: 0.08 for l=0.
6375 8	2(+0)	1.04 7	(2J+1)C ² S: 0.00 for l=0.
6507 8	2+0	0.24 6	(2J+1)C ² S: 0.08 5 for l=0.
6538 8	2(+0)	0.20 3	(2J+1)C ² S: 0.00 for l=0.
6568 8	0+2	0.37 8	(2J+1)C ² S: 1.58 18 for l=0.
6899 8	2+0	0.50 7	(2J+1)C ² S: 0.07 for l=0.
6984 8	0+2	0.06 3	(2J+1)C ² S: 0.30 7 for l=0.
7017 8	2+0	0.14 3	(2J+1)C ² S: 0.02 for l=0.
7111 8	0+2	0.37 9	(2J+1)C ² S: 1.06 30 for l=0.
7258 8	2+0,1+3		(2J+1)C ² S: 0.44 21 for l=2, 0.21 (≤ 0.67) for l=0, 0.12 (≤ 0.63) for l=1, and 1.02 23 for l=3.
7493 8	2(+0)	0.45 6	(2J+1)C ² S: 0.00 for l=0.
7582 8		≤ 0.03	(2J+1)C ² S: ≤ 0.07 for l=0.
7621 8	2+0	1.12 12	(2J+1)C ² S: 0.12 for l=0.
7641 8	2+0	0.34 6	(2J+1)C ² S: 0.04 for l=0.
7780 8	2+0,1+3		(2J+1)C ² S: 0.43 13 for l=2, 0.36 34 for l=0, 0.27 9 for l=1, and 0.50 16 for l=3.
7795 8	0+2	0.38 14	(2J+1)C ² S: 0.33 for l=0.
7853 8	2(+0)	0.56 9	(2J+1)C ² S: 0.00 (≤ 0.08) for l=0.
8016 8	2	0.74 5	
8058 8	0+2,1+3		(2J+1)C ² S: 0.91 7 for l=2, 0.88 30 for l=0, 1.02 21 for l=1, and 0.32 16 for l=3.
8076 8	0+2,1+3	0.79 10	(2J+1)C ² S: 0.79 10 for l=2, 1.41 34 for l=0, 0.55 16 for l=1, and 1.02 23 for l=3.

[†] From 1995Sc36. Absolute uncertainty stated to be about 8 keV. The relative uncertainty was 2 keV.

[‡] From comparison of experimental angular distribution with DWBA calculations.

[#] Values for l=2 listed in the column and for l=0, 1, 3 in the comments section. In some cases, 1995Sc36 list an upperlimit without a definition for l=0 values. Those values are not listed in the dataset.