^{42}Ca(d,^{3}He) 1976Do05

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja, E. A. Mccutchan	NDS 133, 1 (2016)	30-Sep-2015

1976Do05: E(d)=52 MeV. Measured $\sigma(\theta)$ for θ=8° to 30° using counter telescopes consisting of ΔE and E surface barrier detectors (FWHM=120 keV); DWBA analysis.

1969Yn01: E(d)=21.4 MeV. Measured $\sigma(\theta)$ for θ=12° to 30° using magnetic analysis and ΔE-E telescope of surface-barrier detectors (FWHM=70-130 keV); DWBA analysis.

^{41}K Levels

E(level)[†]	L[‡]	C^2S[#@]	Comments
0	2	3.43	C^2S: other: 3.3 (1969Yn01).
980 *20*	0	0.77	E(level): other: 980 *40* (1969Yn01). C^2S: other: 0.9 (1969Yn01).
1290 *20*	3	0.93	E(level): 1969Yn01 report two levels 1270 *40* with L=0 and 1290 *40* with L=(3). C^2S: other: 0.17 for L=0, fit improves if an L=3 component with C^2S=0.36 is included (1969Yn01).
1570 *20*	0+1+2		E(level): triplet of 1560+1582+1593 levels. C^2S: 0.17 for L=0 (1593 level); 0.10 for L=1 (1582), 0.16 for L=2 (1560 level) (1976Do05). C^2S=0.4 fit with L=0 for the multiplet (1969Yn01). E(level): other: 1590 *40* (1969Yn01).
2670 *20*	0	0.64	E(level): other: 2730 *40* (1969Yn01). C^2S: other: 0.65 (1969Yn01).
3190 *20*	2	0.21	E(level): probable doublet or triplet.
3480 *20*	2	0.81	E(level): other: 3570 *40* (1969Yn01). C^2S: other: 1.0 (1969Yn01).
4400 *20*	2	0.23	
4900 *20*	2	0.42	
5060 *20*	2	0.57	
5540 *20*	2	0.45	
5840 *20*	2	0.48	
6500 *20*	2	0.37	
6630 *20*	2	0.22	
8000 *20*	(2)	0.2	

[†] From 1976Do05. Level energies for 6 groups from 1969Yn01 are included in the comments.

[‡] From DWBA calculations.

[#] From fitting experimental data in the forward maximum with $\sigma_{exp}=NC^2S\sigma_{DWBA}$ with N=2.95. In the DWBA calculations, the following orbitals were assumed: $2s_{1/2}$ for L=0, $2p_{3/2}$ for L=1, $1d_{5/2}$ for L=2 except for the ground state where $1d_{3/2}$ was assumed, and $1f_{7/2}$ for L=3.

[@] 1978En02 quote S values for first six groups, adjusted upwards by ≈35% based on standardized normalization factors as in 1977En02. Higher levels are considered by 1978En02 as unresolved structures.