^{40}Ca(^{3}He,d),(pol ^{3}He,d) 1970Yo02

History

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

1970Yo02: (^{3}He,d) with E(^{3}He)=40 MeV. Measured $\sigma(\theta)$ for θ=10° to 50° using ΔE-E semiconductor telescope (FHWM=60 keV); DWBA analysis.

1980Lu03: (pol ^{3}He,d) with E(pol ^{3}He)=33.3 MeV. Measured $\sigma(\theta)$, Ay(θ) for g.s.

1991Gu02: (^{3}He,d) with E(^{3}He)=240 MeV. Measured $\sigma(\theta)$ for θ=0° to 10° using four solid state telescopes (FWHM=200 keV); DWBA analysis.

Others:

1976Fr22 (also analysis by 1977Fr02): (^{3}He,d) with E(^{3}He)=9.0, 9.85, and 10.7 MeV. Measured $\sigma(\theta)$ for ground state.

1965Bo15: (^{3}He,d) with E(^{3}He)=18.05 MeV. Measured $\sigma(\theta)$ for 8 levels in ^{41}Sc. L values for first 4 levels consistent with subsequent measurements.

1960We04: (^{3}He,d) with E(^{3}He)=24 MeV. Measured $\sigma(\theta)$ for ground state and levels at 1690, 3350, 5100 and 6010 keV.

^{41}Sc Levels

E(level)[†]	Jπ	L[†]	S[†‡]	Comments
0	7/2$^-$	3	1.12	Jπ,L: from (pol ^{3}He,d) (1980Lu03). S: others: 0.96 (1991Gu02), 0.6 (1980Lu03).
1718 *20*		1	0.85	configuration=2p3/2 (1991Gu02). S: other: 0.86 (1991Gu02).
2100 *20*		2	0.067	
2419 *20*		1	0.091	
2686 *20*				
2892 *20*		4	0.013	
2955 *20*				
3192 *20*		3	0.034	
3471 *20*		1	0.75	configuration=2p1/2 (1991Gu02). S: other: 0.75 (1991Gu02).
3744 *20*		1	0.08	S: expected contributions from the 3769-keV (L=1) and 3779-keV (L=2) levels have been taken account in the determination of S.
4030 *20*		(3,4)		S: (0.0016-0.0070) for L=3 and (0.0025-0.0060) for L=4.
4519 *20*		4	0.015	
4812 *20*		(3,4)		S: (0.0049-0.015) for L=3 and (0.00035-0.0010) for L=4.
5037 *20*		4	0.18	S: other: 0.12 (1991Gu02). E(level): complex peak in 1991Gu02. configuration=1g9/2 (1991Gu02).
5413 *20*		2	0.031	E(level): may contain contribution from six known levels near this energy. Primary contributions are expected to be from the 5416-keV (L=2) and 5371-keV (L=2) levels.
5542 *20*				
5709 *20*		3	0.15	S: other: 0.31 (1991Gu02). configuration=1f5/2 (1991Gu02).
5862 *20*		3	0.060	configuration=1f5/2 (1991Gu02).
6470 *20*		(3)	(0.09)	E(level): likely doublet composed of the 6434-keV (L=3) and 6468-keV (L=3) levels.
6902 *40*				
7400[#]				
7814 *40*				
8119 *40*				
8594 *40*				configuration=1g9/2 (1991Gu02) for slice of excitation energy centered at 8640-keV with width of 480 keV.
9.60×10^3[#]				configuration=1g9/2 (1991Gu02) for slice of excitation energy centered at 9600-keV with width of 520 keV.
10500[#]				E(level): unresolved multiplet.

Continued on next page (footnotes at end of table)

^{40}Ca(^{3}He,d),(pol ^{3}He,d) 1970Yo02 (continued)

^{41}Sc Levels (continued)

† From 1970Yo02, except where noted.
‡ $d\sigma/d\Omega_{exp}=NC^2S(d\sigma/d\Omega)_{DWBA}$ with $C^2=1$ for the (^{3}He,d) reaction on T=0 target and N=4.42.
# From 1991Gu02.