^{40}Ca(d,t),(pol d,t) 1976Do05

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 149, 1 (2018)	1-Jan-2018

1976Do05: (d,t) E=52 MeV deuteron beam was produced from the Karlsruhe isochronous cyclotron. Target was 750 μg/cm^2 thick self-supporting foil of ^{40}Ca (99.97% enriched). Reaction products were detected by counter telescopes of ΔE and E surface barrier counters (FWHM=90 keV). Measured $\sigma(\theta)$. Deduced levels, J, π, L-transfers, spectroscopic factors from DWBA analysis. Absolute cross sections are accurate to 12% for prominent groups and 20% for weak groups.

Other:

1987Me01: (pol d,t) E=20 MeV polarized beam was from the Munich HVEC MP tandem. Enriched target. Four surface-barrier detector telescopes. Measured $\sigma(\theta)$, analyzing powers for ground state. DWBA analysis.

1978Co13: (pol d,t) E=29 MeV polarized beam was from the Texas A&M University 224-cm cyclotron. Natural targets. ΔE-E Si detector telescopes (FWHM=350 keV). Measured $\sigma(\theta)$, analyzing powers for g.s. and 2470 level. DWBA analysis.

1968Ga13: (d,t) E=28 MeV. Measured $\sigma(\theta)$ for g.s.

1965Ne01: (d,t) E=34.4 MeV.

All data are from 1976Do05, unless otherwise noted.

^{39}Ca Levels

E(level)	J$^\pi$	L[†]	C^{2}S[†‡]	Comments
0	3/2$^+$	2	4.30	J$^\pi$: from analyzing powers (1978Co13,1987Me01). C^{2}S: for 3/2$^+$. Others: 4.85 (1978Co13), 5.35 (1968Ga13).
2470 *15*	1/2$^+$	0	1.46	J$^\pi$: from analyzing powers (1978Co13). C^{2}S: other: 1.26 (1978Co13).
2790 *15*		3	0.36	
3030 *15*		1	0.02	
3640 *15*				
3820 *15*		(0)	0.01	
3940 *15*		1	0.01	
4020 *15*		0	0.07	
4320 *15*		(2)	0.05	
4460 *15*		2	0.1	
4940 *15*		(2)	0.05	
5130 *15*		2	0.97	
5320 *15*		2	0.16	
5490 *15*		2	0.46	
5790 *15*		1	0.03	
6010 *15*		1	0.02	
6160 *15*		2	0.98	
6450 *30*		2	0.25	
6820 *30*		2	0.09	
6920 *30*		2	0.09	
7210 *30*		2	0.25	
7380 *30*		2	0.14	
7520 *30*		1	0.01	C^{2}S: 0.08 for L-1/2.
7700 *30*		2	0.1	
7970 *30*		2	0.37	
8190 *30*		2	0.16	
8360 *30*		2	0.28	
8500 *30*		2	0.2	
8700 *30*		2	0.25	
8800 *30*		1	0.01	C^{2}S: 0.17 for L-1/2.
9070 *30*		2	0.18	
9190 *30*		2	0.13	
9280 *30*		(2)	0.1	
9500 *30*		(2)	0.06	

Continued on next page (footnotes at end of table)

^{40}Ca(d,t),(pol d,t) 1976Do05 (continued)

^{39}Ca Levels (continued)

† From DWBA analysis of experimental differential cross sections (1976Do05).
‡ For L+1/2 transfer, unless otherwise noted.