^{50}Ti(^{3}He,^{3}He'),(α,α')   1970Br07,1967Yn01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 157, 1 (2019)	15-Apr-2019

1970Br07: E_α=44 MeV (energy spread=40-60 keV) at Orsay. Measured $\sigma(\theta$(c.m.)$\approx$12-55°); Si, FWHM=80-400 keV.

1967Yn01: E_α=43 MeV beam from Argonne 60-inch cyclotron. Measured $\sigma(\theta$=17°−47°, 2° steps); Si, FWHM=135-175 keV. DWBA.

Others:

1971Mo39: E(^{3}He)=29 MeV. Measured $\sigma(\theta$=14°−150°, 2° steps); Si, FWHM≈70 keV. DWBA.

1974Re01: E_α=104 MeV. Measured $\sigma(\theta$(c.m.)$\approx$10°−45°); ΔE-E telescope (Si), FWHM≈120-200 keV. Coupled channels analysis.

1992KuZG: E_α=40.1, 50.5 MeV. Measured $\sigma(\theta$=10° to 73°, 1° steps). ΔE-E telescope. DWIA.

Others: 1983Pe10, 1974Al10, 1995Ku26.

This dataset also includes data from other inelastic scattering reactions which give very limited information: (d,d'), (pol d,d'), (d,d'γ): 1968Wi02, 1980StZN, 1974Ba74, 1970Hi01; (n,n'γ): 1971Br18, 1972LaYB.

^{50}Ti Levels

E(level)[†]	J$^\pi$[†]	L[†]	β_LR[‡]	Comments
0				
1520	2$^+$	2	0.58	B(E2)↑=0.036 (1970Br07)
				E(level): 1560 from 1967Yn01. 1550γ in 1972LaYB.
				β_LR: β_2=0.13 from 1971Mo39 assuming (f$_{7/2}$)^2 wave function. Others: β_2=0.13 1 (1974Re01), 0.18 2 (1974Al10), and 0.136 (1967Yn01); β_2R=0.34 (1992KuZG).
				$\gamma(\theta)$ indicative of "half" spin flip (1970Hi01).
2640	4$^+$	4	0.22	B(E4)↑=1.04×10^{-5} (1970Br07)
				E(level): 2660 from 1967Yn01.
				β_LR: others: β_4=0.06 1 (1974Re01) and 0.073 (1967Yn01); β_4R=0.30 (1992KuZG).
4180	4$^+$	2	0.24	E(level): 4180 also from 1967Yn01.
				β_LR: β_4=0.083 (1967Yn01), β_4R=0.39 (1992KuZG).
4380	3$^-$	3	0.45	E(level): 4350 from 1967Yn01.
				β_LR: β_3=0.113 (1967Yn01).
4790	4$^+$	4	0.27	B(E4)↑=1.57×10^{-5} (1970Br07)
				E(level): 4760 from 1967Yn01.
				β_LR: β_4=0.088 (1967Yn01).
5380				
5810				
6570	3$^-$	3	0.27	E(level): 6510 from 1967Yn01.
				β_LR: β_3=0.066 (1967Yn01).
6720	3$^-$	3	0.22	
7130	3$^-$	3	0.29	E(level): 6980 from 1967Yn01.
				β_LR: β_3=0.088 (1967Yn01).
7720	3$^-$	3	0.19	E(level): 7600 from 1967Yn01.
				β_LR: β_3=0.063 (1967Yn01).

[†] From 1970Br07 (L,J by DWBA). Others are consistent, except as noted.

[‡] Deformation lengths, from 1970Br07.