<u>^{124}Te(d,t)</u>   **1977Fe16**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 174, 1 (2021)	15-Apr-2021

$J^\pi(^{124}$Te g.s.)$=0^+$.

1977Fe16: E=10.126 MeV deuteron beam was produced from the 8UD Pelletron tandem accelerator of the University of Sao Paulo. Targets were 60-200 μg/cm^2 enriched metallic tellurium (96.21% in ^{124}Te) on 20 μg/cm^2 carbon backings. Reaction products were detected with a E-ΔE counter telescope (FWHM=35 keV). Measured $\sigma(E_d,\theta)$, θ=45°−105°. Deduced levels, J, π, L-transfers, spectroscopic factors from DWBA analysis. Comparisons with available data.

Other: 1964Jo12: E(d)=14.8 MeV.

All data are from 1977Fe16.

<u>^{123}Te Levels</u>

Spectroscopic factor C^{2}S is obtained from $d\sigma/d\Omega$(exp)=N×C^{2}S/(2j+1)×$d\sigma/d\Omega$(DWBA), where N=3.33 is the normalization factor for (d,t) and j the total angular momentum of the transferred neutron (1977Fe16).

E(level)	L[#]	C^{2}S[#]	Comments
0.0	0	1.10	
160 10	2	1.70	C^{2}S: for 2d$_{3/2}$.
247[†]	5	5.75	C^{2}S: for 1h$_{11/2}$.
490 20	2	1.20	C^{2}S: for 2d$_{5/2}$.
690 10	2	0.63,0.51	C^{2}S: for 2d$_{3/2}$,2d$_{5/2}$.
790 10			
894[†]	2	2.0	C^{2}S: for 2d$_{5/2}$.
1240[‡] 20			
1420[‡] 20			
1500 20			
1660 20			
1850 20			
2040 20			

[†] Used as energy calibration.

[‡] Probably multiplet.

[#] From DWBA analysis of experimental differential cross sections, assuming 2d$_{3/2}$ (for 160 and 690 levels) and 2d$_{5/2}$, 1h$_{11/2}$ single-particle orbits for L=2, 5 transfer, respectively, with 15-20% uncertainty in spectroscopic factor (1977Fe16).