

$^{124}\text{Te}(t,\alpha)$ **1973Co33**

Type	Author	History Citation	Literature Cutoff Date
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$J^\pi(^{124}\text{Te g.s.})=0^+$.

1973Co33: E=12 MeV triton beam was produced from the Aldermaston tandem accelerator. Target was $100 \mu\text{g}/\text{cm}^2$ 83.7% enriched ^{124}Te on a $20 \mu\text{g}/\text{cm}^2$ carbon backing. Reaction products were momentum-analyzed with a multi-angle spectrograph (FWHM \approx 30 keV). Measured $\sigma(E_\alpha, \theta)$ at $\theta=12.5^\circ-175^\circ$. Deduced levels, L-transfers, spectroscopic factors from DWBA analysis. Comparisons with available data.

Others: **1980Sh03** (E=16 MeV), **1972Ca41** (E=11.8 MeV).

 ^{123}Sb Levels

E(level)	L	C^2S^\dagger	Comments
0.0	4	1.45	C^2S : other: 1.59 (1980Sh03).
144 <i>10</i>	2	0.28	C^2S : other: 0.22 (1980Sh03).
528 <i>10</i>	2	0.22	C^2S : other: 0.14 (1980Sh03).
705 <i>10</i>	0	0.04	
1262 <i>10</i>			
1324 <i>10</i>	4	1.60	
1649 <i>10</i>			
1729 <i>10</i>	1	0.91	
1884 <i>10</i>	1	0.85	
2105 <i>10</i>			
2184 <i>10</i>			
2235 <i>10</i>	1	0.18,0.15	
2296 <i>10</i>			
2378 <i>10</i>			
2441 <i>10</i>			
2506 <i>10</i>			
2636 <i>10</i>	4	1.09	
2799 <i>10</i>			
2915 <i>10</i>	4	0.40	
2982 <i>10</i>			
3178 <i>10</i>	4	0.48	
3327 <i>10</i>	1	0.12,0.10	

† DWBA analysis was made by using local and zero-range approximations (**1973Co33**). Spectroscopic factors C^2S are relative values, normalizing $\text{sum}(C^2S)=2$ with the assumption that Te isotopes are represented by two protons above $Z=50$ core distributed along the $1g_{7/2}$, $2d_{5/2}$, $2d_{3/2}$, $3s_{1/2}$ and $1h_{11/2}$ orbitals; C^2S deduced assuming $2p_{1/2}$ (1729), $2p_{3/2}$ (1884) and $2p_{1/2}, 2p_{3/2}$ (2235,3327); $2d_{3/2}$ (528), $2d_{5/2}$ (144); $1g_{7/2}$ (g.s.), $1g_{9/2}$ single-particle orbits for L=1; 2; 4 transfer, respectively.