^{99}Tc(d,p) 1976Sl03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 172, 1 (2021)	31-Jan-2021

$J^\pi(^{99}\text{Tc g.s.})=9/2^+$.

1976Sl03: E=15 MeV deuteron beam was produced from the injector-tandem accelerator at the University of Oxford. Target was ≈200 μg/cm^2 ^{99}Tc on a thin carbon backing. Reaction products were momentum-analyzed with the Oxford multi-channel magnetic spectrograph (estimated FWHM≈20 keV). Measured $\sigma(\theta)$ from 10° to 60° (c.m.). Deduced levels, J, π, L-transfers, spectroscopic factors from DWBA analysis. Cross sections accurate to 12% for strong transitions.

2008WeZX: E=22 MeV. Proton spectra measured using Q3D spectrometer at Munich. No evidence was found for a 223 keV peak.

All data are from 1976Sl03, unless otherwise noted.

^{100}Tc Levels

E(level)	J$^\pi$	L[†]	(2J+1)S	Comments
0	1$^+$[b]	4	2.80	
171 *10*	2$^+$[b]	4	2.83	
199 *10*	(4)$^+$[b]	2	0.81	
244 *10*	(6)$^+$[b]	2	4.95	
264 *10*	(3)$^+$[b]	2	1.23	
290 *10*		(0)+2	0.27,6.15	
320 *10*		0+2	0.52,1.40	
339 *10*		2[#]	2.61[#]	
355 *10*		2[#]	2.61[#]	
402 *10*		2	0.46	
444 *10*		0+2[@]	8.66,13.0[@]	
460 *10*		0+2[@]	8.66,13.0[@]	
497 *10*	4$^+$,5$^+$[‡]	0+2	0.91,1.18	
514 *10*		2	1.56	
552 *10*	4$^+$,5$^+$[‡]	0	4.56	
586 *10*	+[&]	0+2[&]	0.52,3.25[&]	
600 *10*	+[&]	0+2[&]	0.52,3.25[&]	
639 *10*		0+2	0.43,1.20	E(level): broad peak.
689 *10*	(4$^+$,5$^+$)[‡]	(0+2)	0.10,0.79	
709 *10*	4$^+$,5$^+$[‡]	0+2+4		(2J+1)S: 0.72 (L=0), 1.68 (L=2), 16.5 (L=4).
758 *10*	4$^+$,5$^+$[‡]	0+2	0.13,1.43	
776 *10*	4$^+$,5$^+$[‡]	0+2+4		(2J+1)S: 0.61 (L=0), 0.66 (L=2), 5.06 (L=4).
829 *10*		2	2.91	
854 *10*		2	2.86	
882 *10*		2	1.57	
936 *10*	+[a]	0+2[a]	0.24,1.36[a]	
950 *10*	+[a]	0+2[a]	[a]	
972 *10*		2	1.37	
1000 *10*	4$^+$,5$^+$[‡]	0+2	2.45,3.85	

[†] From comparison of experimental $\sigma(\theta)$ and DWBA calculations.
[‡] From L=0 component.
[#] For 339+355 unresolved group.
[@] For 444+460 unresolved group.
[&] For 586+600 unresolved group.

Continued on next page (footnotes at end of table)

^{99}Tc(d,p) 1976Sl03 (continued)

^{100}Tc Levels (continued)

[a] For 936+950 unresolved group.
[b] From the Adopted Levels.