

<sup>98</sup>Mo(<sup>3</sup>He,d) **1977Ch06,1977Pe18**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli		NDS 145, 25 (2017)	1-Jul-2017

**1977Ch06:** E=18 MeV. Enriched target. Magnetic spectrograph, FWHM=18 keV.  $\theta=8^\circ$  to  $70^\circ$ .

**1977Pe18:** E=33.3 MeV. Enriched target. Energy loss spectrograph, FWHM=30 keV.

<sup>99</sup>Tc Levels

E(level) <sup>†</sup>	L <sup>‡</sup>	C <sup>2</sup> S <sup>#</sup>	Comments
0	4	0.668	
142	1+(4)	0.290+0.045	
181	2	0.007	
509	1	0.089	L: J=3/2 from J dependence ( <b>1977Pe18</b> ).
534 <sup>@</sup>	(2) <sup>@</sup>		
625	4	0.067	C <sup>2</sup> S: if J=9/2. C <sup>2</sup> S=0.178 if J=7/2.
672	1		L: L=3, C <sup>2</sup> S=0.053 from <b>1977Ch06</b> . However, the <b>1977Pe18</b> measurement at higher energy shows clearly L=1. J=1/2 from J dependence ( <b>1977Pe18</b> ).
720	4	0.027	C <sup>2</sup> S: if J=9/2. C <sup>2</sup> S=0.072 if J=7/2.
762	2	0.056	
919	0	0.009	
1020	(2)	0.008	C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.015 if J=3/2.
1081 <sup>&amp;</sup>	(4) <sup>&amp;</sup>		
1145	2 <sup>a</sup>		
1203	(1)	0.006	C <sup>2</sup> S: if J=3/2. C <sup>2</sup> S=0.014 if J=1/2.
1321	1	0.012	L: J=1/2 from J dependence ( <b>1977Pe18</b> ). C <sup>2</sup> S: if J=3/2. C <sup>2</sup> S=0.030 if J=1/2.
1407 <sup>c</sup>		<i>b</i>	
1435	2	0.021	L: 1 from <b>1977Pe18</b> . J=3/2 from J dependence ( <b>1977Pe18</b> ). C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.039 if J=3/2.
1505	(2)	0.010	C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.018 if J=3/2.
1560	0	0.083	
1679	2	0.020	C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.037 if J=3/2.
1760	2	0.013	E(level): 1779 measured by <b>1977Pe18</b> . C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.025 if J=3/2.
1803 <sup>c</sup>	(0)	0.027	
1825	(2)	0.064	C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.123 if J=3/2.
1911	0		L: from <b>1977Pe18</b> . C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.025 if J=3/2.
1982	(2)	0.044	C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.084 if J=3/2.
2000 <sup>c</sup>	(2)	0.030	C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.058 if J=3/2.
2064 <sup>c</sup>		<i>b</i>	
2111	2	0.055	C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.105 if J=3/2.
2160	(2)	0.023	C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.043 if J=3/2.
2176 <sup>c</sup>	(0)	0.026	
2203	2	0.022	C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.043 if J=3/2.
2281	0	0.068	
2362 <sup>c</sup>		<i>b</i>	
2396	(2)	0.012	C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.023 if J=3/2.
2414	(2)	0.013	C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.026 if J=3/2.
2466	(0)	0.020	
2486	(0)	0.030	
2522	2	0.026	C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.049 if J=3/2.
2581	2	0.030	C <sup>2</sup> S: if J=5/2. C <sup>2</sup> S=0.058 if J=3/2.

Continued on next page (footnotes at end of table)

$^{98}\text{Mo}(^3\text{He,d})$  [1977Ch06](#),[1977Pe18](#) (continued) $^{99}\text{Tc}$  Levels (continued)

<u>E(level)<sup>†</sup></u>	<u>L<sup>‡</sup></u>	<u>C<sup>2</sup>S<sup>#</sup></u>	<u>E(level)<sup>†</sup></u>	<u>L<sup>‡</sup></u>	<u>E(level)<sup>†</sup></u>	<u>L<sup>‡</sup></u>	<u>E(level)<sup>†</sup></u>	<u>L<sup>‡</sup></u>
2611 <sup>c</sup>		<i>b</i>	2714	2	2916 <sup>d</sup>	0+2	3115	0
2653	(0)	0.028	2765	2	2997	2	3186	(2)
2675	(0)	0.013	2846	2	3066	2	3245	(0)

<sup>†</sup> From [1977Ch06](#) up to 2700 keV.  $\Delta E=3$  keV per 1 MeV. Above 2700, only data from [1977Pe18](#) are available.  $\Delta E=8$  keV.

<sup>‡</sup> From DWBA ([1977Ch06](#)), if not noted otherwise. Above 2700 keV data are from [1977Pe18](#).

<sup>#</sup> From DWBA ([1977Ch06](#)). The values are renormalized to a total of eight proton holes in the 1g<sub>9/2</sub>, 2p<sub>1/2</sub>, 2p<sub>3/2</sub>, and 1f<sub>5/2</sub> orbitals. This caused an increase of 17% from original values. See [1977Pe18](#) for their set of C<sup>2</sup>S values.

<sup>@</sup> Only seen by [1977Pe18](#). Energy from Adopted Levels since [1977Pe18](#) quote energy from other experiment.

<sup>&</sup> Only seen by [1977Pe18](#).

<sup>a</sup> From [1977Pe18](#). Only weak transition observed by [1977Ch06](#).

<sup>b</sup> Weak.

<sup>c</sup> Seen only by [1977Ch06](#).

<sup>d</sup> Doublet.