^{152}Sm(^{3}He,^{4}He) 1980Re05,1983Ga07,1973Ne16

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 110, 1 (2009)	20-Nov-2008

1980Re05: E(^{3}He)=24 MeV. Multi-angle spectrograph. FWHM≈30 keV. $\sigma(\theta)$ data from 7.5° to 77.5° at 12 angles. Absolute cross sections accurate to 15%. DWBA calculations of angular distributions.

1983Ga07: E(^{3}He)=70 MeV. Enge spectrograph. FWHM=70 keV. $\sigma(\theta)$ data from 3° (lab) to 30° (lab) in steps of 3°. Absolute σ's accurate to 10%. DWBA calculations.

1973Ne16: E(^{3}He)=24 MeV. Enge spectrograph. FWHM=19 keV. Cross section data at three angles. Relative σ's accurate to 10%. Absolute σ's accurate to 25%. DWBA calculations. L transfers deduced from $\sigma(^{3}He,^{4}He)/\sigma(d,t)$ by normalizing to L(n)=5 for the 261.1 level.

Other: 1977Se04. E(^{3}He)=82 MeV. FWHM=60-120 keV.

^{151}Sm Levels

E(level)†&	Jπ‡	L	S#@	Comments
≈5		(1)&		
71[b] *10*		3	0.98	
92 *10*		(3,4)&		
147 *10*	13/2^{+}	6	1.34	S: 1.32 (1983Ga07).
179 *10*	(9/2)$^{-}$	5	<1.0	E(level): not fully resolved peak.
≈210		(3)&		
258 *10*	(11/2)$^{-}$	5	1.34	S: 1.52 (1983Ga07).
306 *10*	3/2^{+}	2	2.05	
347 *10*		(2)&		
379 *10*	(17/2^{+})			Excited by a two-step process.
396 *10*		(2,3)&		
428 *10*	(11/2)$^{-}$	5	0.20	
490 *10*	(7/2)$^{-}$	3	0.38	
523 *10*				
646 *10*	(15/2^{-})			Excited by a two-step process.
702 *10*		(5,6)	0.34	
746 *10*		5	0.28	L,S: from 1983Ga07. E(level): it is possible that 702 and 746 levels from 1980Re05 correspond to 765 level from 1983Ga07.
834 *10*				
936 *10*				From 1983Ga07 given for a doublet at 1000.
1142 *10*		4,5	0.18,0.42	L,S: from 1983Ga07. 1180 level from 1983Ga07 is identified with the 1142 level from 1980Re05.
1236 *10*				
1322 *10*				
1373 *10*		5	0.73	S: 0.73 (1983Ga07).
1498 *10*				
1568 *10*				
1639 *10*		2	0.10	L,S: from 1983Ga07. Unresolved doublet at 1690 from 1983Ga07 identified with 1639 level from 1980Re05.
1713 *10*				
1748 *10*				
1806 *10*		5	0.28	L: 4,5 for unresolved doublet at 1840 (1983Ga07). S: 0.82, 0.34 for Jπ=712^{+} and 11/2^{-}, respectively (1983Ga07).
1892 *10*				
2900		4,5[a]		Center of a bump between 2100 and 3800 (1983Ga07).
5900		4,5[a]		Center of a bump between 3800 and 8000 (1983Ga07).

Continued on next page (footnotes at end of table)

^{152}Sm(^{3}He,^{4}He) 1980Re05,1983Ga07,1973Ne16 (continued)

^{151}Sm Levels (continued)

† Unless stated otherwise, values are from 1980Re05. 1983Ga07 report only 8 groups, 6 of which are unresolved.
‡ See 'Adopted Levels'.
# Label=C^2V^2.
@ From 1980Re05 unless otherwise stated.
& From 1973Ne16. L transfer from $\sigma(^3He,^4He)/\sigma(d,t)$.
a From 1983Ga07. Center of a wide group.
b Unresolved doublet.