^{176}Hf(^{3}He,d) 2006Bu19

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 159, 1 (2019)	30-Aug-2019

E(^{3}He)=32 MeV. 77.49% enriched in ^{176}Hf target. The deuterons were analyzed by Enge split-pole magnetic spectrograph and detected with photographic emulsion plates. FWHM=20-25 keV. Measured: $\sigma(\theta)$ at 10 angles from 7.5° to 50°. DWBA analysis. Deduced: L-transfer values and spectroscopic factors.

^{177}Ta Levels

Cross secions listed under comments are at 30°, unless otherwise stated.

E(level)[†]	J$^{\pi}$[†]	L[†]	S[a]	Comments
0.0	7/2^{+}	4	0.43	dσ/dΩ=12 μb/sr *2*. configuration: π7/2[404].
70.5	5/2^{+}	2	0.73	E(level): Rounded off value from the Adopted Levels. J$^{\pi}$,L,S: Doublet. This level have small admixture from the known 73.4-keV, 9/2^{-}, π9/2[514] level with S(theory)=0.01. dσ/dΩ=207 μb/sr *7*. Configuration=π5/2[402].
187[#] *1*	5/2^{-}	3	0.45	dσ/dΩ=84 μb/sr *4*.
220[#] *1*	1/2^{-}&11/2^{-}	1+5	0.08,0.89	E(level): Doublet. configuration: π9/2[514] for the 11/2^{-} component. dσ/dΩ=75 μb/sr *5*.
245[#] *1*	9/2^{-}	5	1.07	dσ/dΩ=25 μb/sr *3*.
371[#] *1*	3/2^{-}	1	0.19	dσ/dΩ=65 μb/sr *4*.
492[@] *2*	1/2^{+}&3/2^{+}		0.07	dσ/dΩ=20 μb/sr *2*. E(level): Doublet. Both components are assigned to the 1/2[411] band. S: Value given for J$^{\pi}$=3/2^{+}.
523?[#] *1*	(7/2^{-})		(0.2)	dσ/dΩ=45 μb/sr *4*.
640[@] *1*	5/2^{+}			dσ/dΩ=36 μb/sr *3*, contains a significant contribution from a peak assigned to ^{179}Ta.
690.3?	(3/2)$^{-}$		≤0.02	E(level),J$^{\pi}$: From Adopted Levels. dσ/dΩ≤15 μb/sr. configuration: π3/2[532].
738[#] *2*	11/2^{-}			dσ/dΩ=18 μb/sr *2* at 40°, contains a significant contribution from a peak assigned to ^{179}Ta.
1010 *1*		3		dσ/dΩ=130 μb/sr *6*.
1045[&] *1*	3/2^{-}	1	0.42	dσ/dΩ=298 μb/sr *8*.
1086 *3*		(2)		dσ/dΩ=40 μb/sr *5*.
1120 *1*		2,3		dσ/dΩ=48 μb/sr *4*.
1161[&] *1*	7/2^{-}	3	0.65	dσ/dΩ=159 μb/sr *6*.
1264 *1*		(2)		dσ/dΩ=153 μb/sr *6*.
1336 *2*		2,3		dσ/dΩ=24 μb/sr *4*.
1362 *3*				dσ/dΩ=9 μb/sr *3*.
1448 *3*		(3)[‡]		dσ/dΩ=26 μb/sr *4*.
1484 *2*		(2,3)[‡]		dσ/dΩ=96 μb/sr *5*.
1510 *2*		(3)[‡]		dσ/dΩ=77 μb/sr *5*.
1634 *2*		(2)[‡]		dσ/dΩ=65 μb/sr *4*.
1800 *3*				dσ/dΩ=22 μb/sr *2*.

[†] From 2006Bu19. The level energies were measured relative to the 70.6-keV level, rounded off value from the Adopted Levels. The

Continued on next page (footnotes at end of table)

^{176}Hf(^{3}He,d) 2006Bu19 (continued)

^{177}Ta Levels (continued)

uncertainties are statistical only, the calibration uncertainty is ≤1 keV up to ≈1 MeV, but increases to as much as ≈10 keV at ≈2.5 MeV excitation energy.

‡ Uncertain assignment.

Band(A): π1/2[541] band.

@ Band(B): π1/2[411] band.

& Band(C): π1/2[530] band.

a Defined as [dσ/dΩ(exp)]/[2N×dσ/dΩ(DW)] with N=4.42. See 2006Bu19 for details.

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Band(C): π1/2[530] band

7/2$^-$ 1161

3/2$^-$ 1045

Band(A): π1/2[541] band

11/2$^-$ 738

Band(B): π1/2[411] band

5/2$^+$ 640

(7/2$^-$) 523

1/2$^+$ &3/2$^+$ 492

3/2$^-$ 371

9/2$^-$ 245

1/2$^-$ &11/2$^-$ 220

5/2$^-$ 187

$^{177}_{73}Ta_{104}$