

⁴⁷Ti(³He,d) 1968Do06

Type	Author	History Citation	Literature Cutoff Date
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$J^\pi(^{47}\text{Ti g.s.})=5/2^-$.

1968Do06: E=11 MeV ³He beam. Target was 30 μg/cm² TiO₂ (16.5% in ⁴⁷Ti) on a thin formvar backing. Reaction products were momentum-analyzed with the MIT multiple-gap spectrograph (FWHM=20 keV) and detected in nuclear emulsions. Measured $\sigma(\theta)$, $\theta(\text{c.m.})=10^\circ$ to 170° . Deduced levels, J, π , L-transfers from DWBA analysis. Uncertainty in the absolute cross section is estimated as 20%.

All data are from **1968Do06**.

⁴⁸V Levels

Spectroscopic factor C²S in this dataset is obtained from $d\sigma/d\Omega_{\text{exp}}=4.42 \times (2J_f+1)/(2J_i+1) \times C^2S \times \sigma(\theta)_{\text{DWBA}}$, where J_f is the level spin in ⁴⁸V and J_i is the spin of ⁴⁷Ti g.s. (**1968Do06**).

E(level)	L	C ² S [†]	E(level)	L	C ² S [†]	E(level)	L	C ² S [†]
0.0	1+3	0.02,0.33	2178 15	1	0.04	3243 15	1	0.09
310 15	3(+1)	0.23,(0.004)	2247 15	1+3	0.03,0.10	3294 15	1	0.04
428 15	3	0.87	2411 15	3	0.26	3322 15	1	0.05
520 15	3 [‡]	0.15	2455 15	1+3	0.06,0.70	3371 15	1+3	0.02,0.11
616 15	3	0.83	2568 15	1(+3)	0.02,(0.04)	3440 15	1	0.06
772 15	3	0.66	2605 15			3523 15	1	0.04
1064 15	3 [‡]	0.06	2786 15	1	0.30	3565 15	1	0.12
1100 15	3 [‡]	0.38	2937 15	1(+3)	0.06,(0.17)	3693 15	1	0.06
1532 15	1	0.02	3031 15	3	0.13	3736 15	1	0.02
1779 15	1	0.04	3043 [#] 15			3801 15	1	0.06
1995 15	0	0.06	3075 15	1	0.07	4017 [@] 15	3	0.58
2111 15	1	0.09	3168 15	1	0.08	4086 15	1	0.05

[†] C²S'=(2J_f+1)/(2J_i+1)×C²S. Where multiple values are quoted, each value is for the corresponding L-transfer in order.

[‡] Not consistent with adopted $\pi=-$.

[#] Identified as IAS of ⁴⁸Ti ground state in **1968Do06**. The (³He,d) transition to this state is weak. The authors mentioned that the IAS is strongly excited in (³He,p) in **1968Do03** of the same authors. **1968Do03** report the IAS at 3018 15.

[@] Identified as IAS(⁴⁸Ti 983).