

$^{126}\text{Te}(\text{pol d,p}),(\text{d,p})$  2005Ho15

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(2005Ho15): E=20 MeV, vector polarization=60%; 98% enriched target; magnetic spectrograph;  $\sigma(\theta)$ , analyzing power  $A_y(\theta)$ ,

$\theta=20^\circ-45^\circ$ ; DWBA, coupled channel analysis, deduced spectroscopic factors.

(1968Gr16): E=7.5 MeV; magnetic spectrograph,  $\sigma(\theta)$   $\theta=10^\circ-165^\circ$ , deduced spectroscopic factors; enriched target.

Others: 1967Co16, 1964Jo12.

 $^{127}\text{Te}$  Levels

All data are from 2005Ho15, unless otherwise noted.

E(level) <sup>†‡#</sup>	$J^\pi$ &ab	L@	S	Comments
0.0 2	3/2 <sup>+</sup>	2	0.24	Configuration=( $\nu$ 2d <sub>3/2</sub> ).
61.1 2	1/2 <sup>+</sup>	0	0.20	Configuration=( $\nu$ 3s <sub>1/2</sub> ).
88.3 2	11/2 <sup>-</sup>	5	0.23	
341.2 4	(9/2 <sup>-</sup> )	(5)	0.004 <sup>d</sup>	
472.7 15	5/2 <sup>+</sup>	2	0.0002 <sup>d</sup>	Configuration=( $^{126}\text{Te}$ 2 <sup>+</sup> )( $\nu$ 3s <sub>1/2</sub> )+( $\nu$ 2d <sub>3/2</sub> ).
501.2 15	3/2 <sup>+</sup>	2	0.013	Configuration=( $\nu$ 2d <sub>3/2</sub> )( $\nu$ 3s <sub>1/2</sub> ).
624.6 20	1/2 <sup>+</sup>	0	0.007	Configuration=( $\nu$ 2d <sub>3/2</sub> )or( $^{126}\text{Te}$ 2 <sup>+</sup> )( $\nu$ 2d <sub>3/2</sub> ).
632.4 15	7/2 <sup>-</sup>	3	0.008 <sup>d</sup>	
685.5 15	7/2 <sup>+</sup>	4	0.002 <sup>d</sup>	Configuration=( $^{126}\text{Te}$ 2 <sup>+</sup> )( $\nu$ 2d <sub>3/2</sub> ).
763.0 15	3/2 <sup>+</sup>	2	0.004	Configuration=( $\nu$ 2d <sub>3/2</sub> )( $\nu$ 3s <sub>1/2</sub> )or ( $\nu$ 2d <sub>3/2</sub> )( $\nu$ 3s <sub>1/2</sub> )( $\nu$ 1g <sub>7/2</sub> ).
786.0 15	7/2 <sup>-</sup>	3	0.049	
924.3 15	7/2 <sup>+</sup>	4	0.030	Configuration=( $^{126}\text{Te}$ 2 <sup>+</sup> )( $\nu$ 2d <sub>3/2</sub> ).
1074.8 15	3/2 <sup>+</sup>	2	0.001 <sup>d</sup>	
1140.6 15	5/2 <sup>+</sup>	2	0.011	
1156.8 15	(9/2 <sup>-</sup> ,11/2 <sup>-</sup> )		0.0006 <sup>d</sup>	
1183.0 15				
1290.6 15	5/2 <sup>+</sup>	2	0.007 <sup>d</sup>	
1308.3 15				
1353.1 15	3/2 <sup>-</sup>	1	0.0012 <sup>d</sup>	
1378.9 15	5/2 <sup>+</sup>	2	0.0062 <sup>d</sup>	
1405.1 15	1/2 <sup>+</sup>	0	0.014	Configuration=( $^{126}\text{Te}$ 2 <sup>+</sup> )( $\nu$ 3s <sub>1/2</sub> )( $\nu$ 2d <sub>3/2</sub> ).
1428.1 15	7/2 <sup>+</sup>	4		
1447.4 15				
1489.4? 15				May belong to $^{129}\text{Te}$ (2005Ho15).
1549.7 15				
1555.2 15	5/2 <sup>+</sup>	2	0.012	
1567.6 15	5/2 <sup>+</sup>	2	0.0016	
1602.3 15				
1612.8 15		4		
1676 <sup>c</sup> 5		1	0.003	Not confirmed by (2005Ho15), but reported in (t,d).
1687.4 15	3/2 <sup>-</sup>	1	0.0032	
1731.8 15				
1757.1 15	7/2 <sup>-</sup>	(2), 3	0.0006 <sup>d</sup>	
1774.0 15				
1779.9 15				
1804.5 15				
1814.8 15	7/2 <sup>-</sup>	(2), 3	0.0049	
1844.0 15	5/2 <sup>-</sup>	3	0.001	
1878.4 15				

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$^{126}\text{Te}(\text{pol d,p}),(\text{d,p})$  **2005Ho15** (continued) $^{127}\text{Te}$  Levels (continued)

E(level) <sup>†‡#</sup>	$J^{\pi}&ab$	L <sup>@</sup>	S	Comments
1902 <sup>c</sup> 5		2	0.021	Not confirmed by (2005Ho15), but a 1906 level is reported also in (d,t) and (t,d).
1918.2 15	7/2 <sup>-</sup>	(2), 3	0.014	
1943? 5				
1956.4 15	(3/2 <sup>+</sup> , 5/2 <sup>+</sup> )	(1, 2)	0.002	Tentatively proposed in 2005Ho15: uncertainty is estimated by evaluator. 1941 (5), and L=(1,2) in 1967Co16.
1960.7? 15				J <sup>π</sup> : From adopted level.
1975.5 15	(5/2 <sup>+</sup> ), 7/2 <sup>-</sup>	(2), 3		
1985.2 15	(7/2 <sup>+</sup> )	(4)		
2001.7? 20				
2009.7 20	3/2 <sup>-</sup>	1	0.027	
2026.7 20	7/2 <sup>-</sup>	3	0.071	
2047.9? 20				
2099.8 20	7/2 <sup>-</sup>	3	0.032	Others: 2081 level with L=3 in 1968Gr16.
2120.0 20				
2137.5 20	7/2 <sup>-</sup>	3	0.075	
2145.1 20	3/2 <sup>-</sup>	1	0.018	
2168.2 20	7/2 <sup>-</sup>	3	0.013	
2190.2 20				
2206.7 20	3/2 <sup>-</sup>	1	0.14	
2223.7 20				
2247.3 20	3/2 <sup>-</sup>	1	0.017	
2278.4 20	5/2 <sup>-</sup>	3	0.0019	
2300.3 25	5/2 <sup>-</sup>	(2), 3	0.0015	
2317.2 25	3/2 <sup>-</sup>	1	0.019	
2327.7 25	7/2 <sup>-</sup>	3	0.017	
2340.2 25	(3/2 <sup>-</sup> )	(1)	(0.0015)	
2360.5 25	3/2 <sup>-</sup>	1	0.0015	
2368.3 25				
2392.4 25				
2401.3 25	7/2 <sup>-</sup>	3	0.0017	
2427.0 25				
2438.2 25	(3/2 <sup>-</sup> )	(1)		
2469.3 25	1/2 <sup>-</sup>	1	0.081	
2494.7 25	3/2 <sup>+</sup> , (5/2 <sup>-</sup> )	2, (3)		
2519 3		(2, 3)		
2563 3	3/2 <sup>-</sup> , 5/2 <sup>+</sup>	(1), 2	(0.003)	
2593 3	(3/2 <sup>-</sup> , 7/2 <sup>-</sup> )	(1, 3)	(0.003)	
2619 3	1/2 <sup>-</sup>	1	0.0091	
2668 3	1/2 <sup>-</sup>	1	0.0068	
2692 3				
2699 3				
2713 3				
2731 3	3/2 <sup>+</sup>	2	0.004	
2759 3	3/2 <sup>+</sup>	2	0.001	
2767 3	3/2 <sup>+</sup> , (5/2 <sup>-</sup> )	2, (3)	0.001	
2783 3	(7/2 <sup>-</sup> )	(3)	0.0004	
2790 3	5/2 <sup>-</sup>	3	0.014	
2799 3				
2819 3	5/2 <sup>-</sup>	3	0.016	
2844 3	(1/2 <sup>-</sup> )	(1)		
2859 3	1/2 <sup>-</sup>	1	0.003	
2869 3	(5/2 <sup>-</sup> )	(3)		
2896 3	5/2 <sup>+</sup> , 7/2 <sup>-</sup>	2, 3	(0.0014)	
2914 3	(1/2 <sup>-</sup> )	(1)		
2926 3	(3/2 <sup>-</sup> )	(1)	0.0007 <sup>d</sup>	
2935 3				

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$^{126}\text{Te}(\text{pol d,p}),(\text{d,p})$  2005Ho15 (continued) $^{127}\text{Te}$  Levels (continued)

E(level) <sup>†‡#</sup>	$J^{\pi}&ab$	L@	S	E(level) <sup>†‡#</sup>	L@	S
2957 3	(3/2 <sup>-</sup> )	(1)	0.004 <sup>d</sup>	4114 <sup>c</sup> 10		
2966 3		(2, 3)		4133 <sup>c</sup> 10		
2994 3				4161 <sup>c</sup> 10		
3005 3				4175 <sup>c</sup> 10		
3017 3	(5/2 <sup>+</sup> ),7/2 <sup>-</sup>	2, 3	0.0023	4196 <sup>c</sup> 10	1	0.047
3035 3	(5/2 <sup>+</sup> ),7/2 <sup>-</sup>	2, 3	0.0015	4215 <sup>c</sup> 10		
3064 3	(3/2 <sup>-</sup> )	(1)		4239 <sup>c</sup> 10	(1,2)	0.029
3096 3	(5/2 <sup>+</sup> ),7/2 <sup>-</sup>	2, 3	0.0012	4258 <sup>c</sup> 10	(1)	0.038
3128 3	7/2 <sup>-</sup>	3	0.007	4284 <sup>c</sup> 10	1	0.033
3138 3				4313 <sup>c</sup> 10		
3155 3	(3/2 <sup>-</sup> ),7/2 <sup>-</sup>	(1), 3	0.003	4332 <sup>c</sup> 10	(1)	0.027
3176 3				4353 <sup>c</sup> 10		
3187 3	(7/2 <sup>-</sup> )	(3)	(0.0027)	4386 <sup>c</sup> 10	1	0.061
3218 3				4424 <sup>c</sup> 10		
3238 3		(2, 3)		4470 <sup>c</sup> 10		
3252 3				4489 <sup>c</sup> 10	1	0.058
3265 3		(2, 3)		4523 <sup>c</sup> 10		
3287 3				4544 <sup>c</sup> 10		
3304 3				4573 <sup>c</sup> 10		
3314 3				4590 <sup>c</sup> 10		
3342 3		2, 3		4624 <sup>c</sup> 10		
3376 3	(3/2 <sup>-</sup> ,7/2 <sup>-</sup> )	(1, 3)	(0.008)	4660 <sup>c</sup> 10		
3395 5	3/2 <sup>-</sup>	1	0.009	4675 <sup>c</sup> 10		
3417 3	3/2 <sup>-</sup>	1	0.019	4688 <sup>c</sup> 10		
3450 3	3/2 <sup>-</sup>	1	0.004	4717 <sup>c</sup> 10		
3480 3				4741 <sup>c</sup> 10		
3503 3				4765 <sup>c</sup> 10	(1)	0.036
3545 3	(3/2 <sup>-</sup> )	(1)	0.024	4796 <sup>c</sup> 10		
3554 3				4812 <sup>c</sup> 10		
3572 3	(3/2 <sup>-</sup> )	(1)	(0.007)	4841 <sup>c</sup> 10	(1)	0.029
3583 3				4867 <sup>c</sup> 10		
3596 3				4883 <sup>c</sup> 10		
3609 3				4905 <sup>c</sup> 10	(1)	0.033
3615 <sup>c</sup> 8				4934 <sup>c</sup> 10		
3653 3				4958 <sup>c</sup> 10	(1)	0.046
3661 <sup>c</sup> 8				4995 <sup>c</sup> 10		
3711 <sup>c</sup> 8		(1)	0.019	5017 <sup>c</sup> 10		
3739 <sup>c</sup> 8				5050 <sup>c</sup> 10		
3749 <sup>c</sup> 8				5070 <sup>c</sup> 10		
3780 <sup>c</sup> 8		(3)	0.020	5102 <sup>c</sup> 10		
3814 <sup>c</sup> 8		(1)	0.052	5130 <sup>c</sup> 10	(1,0)	0.050
3836 <sup>c</sup> 8				5167 <sup>c</sup> 10		
3868 <sup>c</sup> 8				5198 <sup>c</sup> 10	(1)	0.029
3891 <sup>c</sup> 8				5223 <sup>c</sup> 10		
3908 <sup>c</sup> 8				5254 <sup>c</sup> 10		
3920 <sup>c</sup> 8				5286 <sup>c</sup> 10		
3959 <sup>c</sup> 8		(1,2)	0.019	5297 <sup>c</sup> 10		
3983 <sup>c</sup> 8				5317 <sup>c</sup> 10		
4000 <sup>c</sup> 10				5338 <sup>c</sup> 10		
4022 <sup>c</sup> 10				5365 <sup>c</sup> 10		
4043 <sup>c</sup> 10				5380 <sup>c</sup> 10		
4055 <sup>c</sup> 10				5407 <sup>c</sup> 10		
4072 <sup>c</sup> 10				5417 <sup>c</sup> 10		
4100 <sup>c</sup> 10				5441 <sup>c</sup> 10		

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$^{126}\text{Te}(\text{pol d,p}),(\text{d,p})$  **2005Ho15** (continued) $^{127}\text{Te}$  Levels (continued)

$E(\text{level})^{\dagger\ddagger\#}$	$E(\text{level})^{\dagger\ddagger\#}$	$E(\text{level})^{\dagger\ddagger\#}$	$E(\text{level})^{\dagger\ddagger\#}$
5475 <sup>c</sup> 10	5545 <sup>c</sup> 10	5603 <sup>c</sup> 10	5655 <sup>c</sup> 10
5498 <sup>c</sup> 10	5570 <sup>c</sup> 10	5623 <sup>c</sup> 10	5675 <sup>c</sup> 10
5531 <sup>c</sup> 10	5584 <sup>c</sup> 10	5634 <sup>c</sup> 10	5700 <sup>c</sup> 10

<sup>†</sup> Weighted average value over the all angle measurements (2005Ho15).

<sup>‡</sup> The proposed levels by 1968Gr16, but not confirmed by 2005Ho15 are following: 510, 636, 2382, 2451, 2478, 2649, 2744, 3049, 3077, 3108, 3166, 3199, 3327, 3359, 3404, 3436, 3461, 3519 MeV. These levels are not adopted (evaluator).

<sup>#</sup> The experimental uncertainties of level energies proposed in (d,p) (2005Ho15) are too small if one compares the corresponding level energy in (n, $\gamma$ ) (2005Ho15). The uncertainties of level energies in (d,p) reported by 2005Ho15 are readjusted from 0.2-1.3 keV to 0.2-5 keV so as to include their differences (evaluator).

<sup>@</sup> From comparison of measured angular distributions with DWBA calculations.

<sup>&</sup> From 2005Ho15. All  $A_y(\theta)$  data were not available. On the  $J^\pi$  assignments in the Adopted Levels, evaluator assumed that only if the transferred L value is given clearly, one can use the asymmetry( $\theta$ ) data.

<sup>a</sup> In energy levels above 1.9 MeV, transferred l values proposed by 1968Gr16 don't have good correspondences to those proposed by 2005Ho15.

<sup>b</sup> Configuration: From spectroscopic strength analysis by IBFM (interacting Boson-fermion model) and/or QPM (quasiparticle phonon model) (2005Ho15).

<sup>c</sup> From 1968Gr16.

<sup>d</sup> Spectroscopic factors obtained by pure CCBA. The upper limit of the direct contribution is given (2005Ho15).