

$^{142}\text{Nd}(\text{}^3\text{He},\alpha)$ **2020Ho05,1978VaZS,1977EI02**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 187,1 (2023)	12-Oct-2022

E=34 MeV (2020Ho05), 75 MeV (1978VaZS), 24 MeV (1977EI02), 25 MeV (1976Be10).

Measured: $\sigma(E,\theta)$, $\sigma(\text{}^3\text{He},\alpha)/\sigma(\text{d,t})$, DWBA analysis.

 ^{141}Nd Levels

E, J, L and C^2S are from 2020Ho05 unless noted otherwise. Other values are given in comments (with L value given if different from the adopted value).

For L=0,2 from (p,d) reaction, E=23 MeV (2020Ho05).

E(level)	J^π	$\text{T}_{1/2}$	L	C^2S	Comments
0.0	$3/2^+$		2	3.04	$\text{C}^2\text{S}=3.0$ (1977EI02).
192 5	$1/2^+$		0	1.69	$\text{C}^2\text{S}=2.1$, E=194 10 (1977EI02).
759 5	$11/2^-$	62.0^\dagger s 8	5	8.99	$\text{C}^2\text{S}=5.4$, E=757 10 (1977EI02).
1222 5	$5/2^+$		2	2.44	$\text{C}^2\text{S}=1.8$, E=1226 10 (1977EI02).
1343 5	$7/2^+$		4	0.62	$\text{C}^2\text{S}=1.2$, E=1343 10 (1977EI02).
1565 5	$(3/2)^+$		2	0.23	$\text{C}^2\text{S}=0.17$, E=1568 10 (1977EI02).
1597 5	$(3/2,5/2)^+$		2	0.06	
1822 5			2	0.69	$\text{C}^2\text{S}=0.62$, E=1822 10 (1977EI02).
1888 5			0	0.14	
1968 5	$7/2^+$		4	0.17	$\text{C}^2\text{S}=0.41$, E=1968 10 (1977EI02).
2070 5	$(3/2^+,5/2^+)$		2	0.41	$\text{C}^2\text{S}=0.38$, E=2071 10 (1977EI02).
2111 5	$3/2^+,5/2^+$		2	0.15	
2180 5			0	0.05	
2208 5	$(11/2)^-$		5	1.84	$\text{C}^2\text{S}=1.1$, E=2205 10 (1977EI02).
2310 5	$7/2^+, (9/2^+)$		4	0.83	E(level): 2.31 MeV in Table II (2020Ho05) adopted as 2310 keV by the evaluator. L: L=4 (2020Ho05,1976Be10,1977EI02). Others: L=5 (1978VaZS). $\text{C}^2\text{S}=1.1$, E=2313 10, L=(4) (1977EI02).
2343 10			4	0.75	$\text{C}^2\text{S}=0.75$, E=2343 10 (1976Be10) and $\text{C}^2\text{S}=0.50$, E=2349 5 (2020Ho05). The values of 1976Be10 are adopted in corroboration with 2336.0, ($7/2^+$) level from the ε decay.
2384 5	$7/2^+$		4	0.20	$\text{C}^2\text{S}=0.35$, E=2385 10 (1976Be10).
2512 5					
2581 5			(2)	0.05	
2616 5			(2)	0.02	
2705 5			(2)	0.05	
2809 5			(2)	0.07	
2915 5			5	0.80	$\text{C}^2\text{S}=0.90$, E=2924 10, L=(5) (1977EI02). E=2952 21 L=4 in 1978VaZS (possibly different level).
2939 5			2	0.16	
3042 5			4	0.40	$\text{C}^2\text{S}=1.1$, E=3041 10 (1977EI02).
3112 5			4	0.56	$\text{C}^2\text{S}=1.8$, E=3112 10 (1977EI02); $\text{C}^2\text{S}=0.77$, E=3137 25 (1978VaZS).
3315 5			(2)	0.04	
3369 5			2	0.19	
3407 5			2	0.25	$\text{C}^2\text{S}=0.45$, E=3402 10 (1977EI02).

† From Adopted Levels.