

| <u><math>^{15}\text{N}(\text{d},\alpha)</math></u>                                                                                                                                                                                                                                                               |                                            |         |                  |                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|---------|------------------|------------------------|
| Type                                                                                                                                                                                                                                                                                                             | Author                                     | History | Citation         | Literature Cutoff Date |
| Full Evaluation                                                                                                                                                                                                                                                                                                  | J. H. Kelley, C. G. Sheu and J. E. Purcell |         | NDS 198,1 (2024) | 1-Aug-2024             |
| <a href="#">1951Ma08</a> : $^{15}\text{N}(\text{d},\alpha)$ E=1.4 MeV; measured Q values; deduced $^{13}\text{C}$ excited states.                                                                                                                                                                                |                                            |         |                  |                        |
| <a href="#">1957Wa01</a> : $^{15}\text{N}(\text{d},\alpha)$ E=14.8 MeV; $\alpha$ -particle groups corresponding to level energies in $^{13}\text{C}$ up to 9.9 MeV excitation were observed at $\theta=12.6^\circ$ , $18^\circ$ , $30^\circ$ . Reported $d\sigma/d\Omega(18^\circ)$ for all states.              |                                            |         |                  |                        |
| <a href="#">1958Fi27</a> , <a href="#">1959Fi30</a> : $^{15}\text{N}(\text{d},\alpha_0)$ E=21 MeV; measured $\sigma(\theta)$ for $\theta_{\text{c.m.}}=-20^\circ$ to $140^\circ$ . The angular distribution of the ground-state $\alpha$ particles shows a relative maximum at $\theta_{\text{c.m.}}=70^\circ$ . |                                            |         |                  |                        |
| <a href="#">1961Ja23</a> : $^{15}\text{N}(\text{d},\alpha)$ ; deduced $Q_0=7675$ keV 9 and $E_x=3100$ keV 20 and 3695 keV 10 for the 1st and the 2nd excited states, respectively.                                                                                                                               |                                            |         |                  |                        |
| <a href="#">1961Lo10</a> : $^{15}\text{N}(\text{d},\alpha)$ ; the reaction was studied at $\theta_{\text{lab}}=90^\circ$ , measured $Q_0$ value of 7675 keV 9. See also ( <a href="#">1961Lo02</a> ).                                                                                                            |                                            |         |                  |                        |
| <a href="#">1965Ma59</a> : $^{15}\text{N}(\text{d},\alpha_{0,1})$ E=1.2-2.5 MeV; measured $\sigma(\theta)$ for $\theta_{\text{lab.}}=30^\circ$ to $150^\circ$ .                                                                                                                                                  |                                            |         |                  |                        |
| <a href="#">1966St16</a> : $^{15}\text{N}(\text{d},\alpha_0)$ E=1.0-1.2 MeV; measured the angular distributions of the $\alpha$ particles.                                                                                                                                                                       |                                            |         |                  |                        |
| <a href="#">1968Pr04</a> : $^{15}\text{N}(\text{d},\alpha_{0,1})$ E=20.9 MeV; measured the angular distributions of the $\alpha$ particles for $\theta_{\text{c.m.}}=20^\circ$ to $110^\circ$ .                                                                                                                  |                                            |         |                  |                        |
| <a href="#">1974WeZT</a> : $^{15}\text{N}(\text{d},\alpha)$ ; measured $\sigma(E\alpha)$ . $^{13}\text{C}$ deduced levels.                                                                                                                                                                                       |                                            |         |                  |                        |
| <a href="#">1976Ca28</a> : $^{15}\text{N}(\text{d},\alpha_{0,1})$ E<3 MeV; measured $\sigma(E,E\alpha,\theta)$ for $\theta=71^\circ$ to $146^\circ$ .                                                                                                                                                            |                                            |         |                  |                        |
| <a href="#">1986Sa41</a> : $^{15}\text{N}(\text{d},\alpha_0)$ E=804 keV-1.2 MeV; measured products, $^{13}\text{C}$ deduced $\sigma(\theta=150^\circ)$ .                                                                                                                                                         |                                            |         |                  |                        |
| <a href="#">1996Vi12</a> : $^{15}\text{N}(\text{d},\alpha_0)$ E=0.4-2 MeV; measured $\sigma(E,\theta)$ for $\theta_{\text{c.m.}}=85^\circ$ to $160^\circ$ . Comparison with earlier results.                                                                                                                     |                                            |         |                  |                        |

 $^{13}\text{C}$  Levels

| E(level) <sup>†</sup> | L | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0                     | 2 | E(level): See ( <a href="#">1951Ma08</a> , <a href="#">1957Wa01</a> , <a href="#">1958Fi27</a> , <a href="#">1959Fi30</a> , <a href="#">1961Ja23</a> , <a href="#">1961Lo10</a> , <a href="#">1966St16</a> , <a href="#">1968Pr04</a> , <a href="#">1976Ca28</a> , <a href="#">1986Sa41</a> , <a href="#">1996Vi12</a> ).<br>Q <sub>0</sub> =7681 keV 6 ( <a href="#">1951Ma08</a> ), 7675 keV 9 ( <a href="#">1961Ja23</a> , <a href="#">1961Lo10</a> ).<br>L: See ( <a href="#">1968Pr04</a> ). |
| 3084 5                |   | E(level): Weighted average of 3083 keV 5 ( <a href="#">1951Ma08</a> ) and 3100 keV 20 ( <a href="#">1961Ja23</a> ); see also ( <a href="#">1957Wa01</a> , <a href="#">1968Pr04</a> , <a href="#">1976Ca28</a> ).<br>Q <sub>1</sub> =4598 keV 4 ( <a href="#">1951Ma08</a> ).                                                                                                                                                                                                                      |
| 3681 7                |   | E(level): Weighted average of 3677 keV 5 ( <a href="#">1951Ma08</a> ) and 3695 keV 10 ( <a href="#">1961Ja23</a> ); see also ( <a href="#">1957Wa01</a> , <a href="#">1976Ca28</a> ).<br>Q <sub>2</sub> =4004 keV 3 ( <a href="#">1951Ma08</a> ).                                                                                                                                                                                                                                                 |
| 3860                  |   | E(level): See ( <a href="#">1957Wa01</a> , <a href="#">1976Ca28</a> ).                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 6870                  |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 7470 <sup>‡</sup>     |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 7530 <sup>‡</sup>     |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 7640 <sup>‡</sup>     |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 8800 40               |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 9500                  |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 9900                  |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

<sup>†</sup> Values listed in ([1957Wa01](#)) except where noted.

<sup>‡</sup> Unresolved triplet.