

Table 15.5 from (1976AJ04): Radiative decays in ^{15}N ^a

| E_i (MeV) | J_i^π | E_f (MeV) | J_f^π | Branch (%) | Mult. mixing ratio δ | Refs. ¹ |
|-------------------|-----------------|----------------|-----------------|----------------------------|---|--------------------------------|
| 5.27 | $\frac{5}{2}^+$ | 0 | $\frac{1}{2}^-$ | 100 | -0.131 ± 0.013 | (1975BE23, 1976BE1B) |
| 5.30 | $\frac{1}{2}^+$ | 0 | $\frac{1}{2}^-$ | 100 | | |
| 6.32 | $\frac{3}{2}^-$ | 0 | $\frac{1}{2}^-$ | 100 | $+0.122 \pm 0.006$ ^b | (1975MO28, 1976BE1B) |
| | | 5.27 | $\frac{5}{2}^+$ | < 1 | | (1965WA16, 1975MO28) |
| 7.16 | $\frac{5}{2}^+$ | 5.30 | $\frac{1}{2}^+$ | < 0.5 | | (1975MO28) |
| | | 0 | $\frac{1}{2}^-$ | < 0.1 | | (1976BE1B) |
| | | 5.27 | $\frac{5}{2}^+$ | 100 ± 0.4 ^c | $-0.014^{+0.012}_{-0.015}$ | (1976BE1B) |
| | | 5.30 | $\frac{1}{2}^+$ | < 4 | | (1966AL18, 1968GI11) |
| 7.30 ^c | $\frac{3}{2}^+$ | 6.32 | $\frac{3}{2}^-$ | < 0.5 | | (1965WA16) |
| | | 0 | $\frac{1}{2}^-$ | 99.3 ± 0.7 | $-0.017^{+0.005}_{-0.008}$ | (1976BE1B) |
| | | 5.27 | $\frac{5}{2}^+$ | 0.6 ± 0.1 | $+0.18 \pm 0.15$, or $+2.5 \pm 1.0$ | (1976BE1B) |
| | | 5.30 | $\frac{1}{2}^+$ | 0.2 ± 0.1 | -0.31 ± 0.15 , or $+4.6 \pm 3.4$ | (1976BE1B) |
| 7.57 | $\frac{7}{2}^+$ | 6.32 | $\frac{3}{2}^-$ | < 0.25 | | (1965WA16) |
| | | 0 | $\frac{1}{2}^-$ | 1.3 ± 0.6 | | (1975BE23, 1976BE1B) |
| | | 5.27 | $\frac{5}{2}^+$ | 98.7 ± 1.0 | -0.028 ± 0.012 | (1976BE1B) |
| | | 5.30 | $\frac{1}{2}^+$ | < 4 | | (1966AL18) |
| 8.31 | $\frac{1}{2}^+$ | 6.32 | $\frac{3}{2}^-$ | < 0.6 | | (1965WA16) |
| | | 0 | $\frac{1}{2}^-$ | 79 ± 2 | | (1965WA16, 1966WA08, 1967PH03) |
| | | 5.27 | $\frac{5}{2}^+$ | < 3 | | (1965WA16) |
| | | 5.30 | $\frac{1}{2}^+$ | 10 ± 2 | | (1965WA16) |
| | | 6.32 | $\frac{3}{2}^-$ | 7.8 ± 2 | | (1965WA16) |
| | | | | 4.4 ± 1.0 | | (1967PH03) |
| | | 7.16 | $\frac{5}{2}^+$ | 1.2 ± 0.6 | | (1967PH03) |
| | | 7.30 | $\frac{3}{2}^+$ | 2.2 ± 0.4 | | (1965WA16) |
| 8.57 | $\frac{3}{2}^+$ | | | 4.4 ± 0.7 | | (1967PH03) |
| | | 0 | $\frac{1}{2}^-$ | 33 ± 2 | | (1965WA16, 1966WA08, 1967PH03) |
| | | | | | $-0.085^{+0.005}_{-0.009}$ | (1976BE1B) |
| | | 5.27 | $\frac{5}{2}^+$ | 65 ± 3 | | (1966WA08) |
| | | | | | -0.091 ± 0.007 | (1976BE1B) |
| | | 5.30 | $\frac{1}{2}^+$ | < 12 | | (1965WA16) |
| | | 6.32 | $\frac{3}{2}^-$ | 3 ± 1 | | (1965WA16) |
| | | | | 1.4 ± 0.6 | | (1967PH03) |
| | | 3.6 ± 0.5 | | (1967PH03) | | |
| | | 7.30 | $\frac{3}{2}^+$ | < 0.7 | | (1965WA16) |
| | | 7.57 | $\frac{7}{2}^+$ | < 3 | | (1965WA16, 1966WA08) |

Table 15.5 from (1976AJ04):Radiative decays in $^{15}\text{N}^a$ (continued)

| E_i (MeV) | J_i^π | E_f (MeV) | J_f^π | Branch (%) | Mult. mixing ratio δ | Refs. ¹ | | |
|-------------------|-----------------|----------------|-----------------|----------------|--------------------------------|-----------------------------------|---------------|------------|
| 9.05 | $\frac{1}{2}^+$ | 0 | $\frac{1}{2}^-$ | 92 ± 3 | | (1965WA16, 1966WA08) | | |
| | | | | 91.6 ± 0.9 | | (1967PH03) | | |
| | | 5.27 | $\frac{5}{2}^+$ | 3.5 ± 1 | | (1966WA08) | | |
| | | | | 4.7 ± 0.7 | | (1967PH03) | | |
| | | 6.32 | $\frac{3}{2}^-$ | 4.5 ± 1 | | (1966WA08) | | |
| | | | | 3.7 ± 0.5 | | (1967PH03) | | |
| | | 7.16 | $\frac{5}{2}^+$ | < 10 | | (1965WA16) | | |
| | | 7.30 | $\frac{3}{2}^+$ | 1.2 ± 0.4 | | (1965WA16) | | |
| | | 7.57 | $\frac{7}{2}^+$ | < 2 | (1965WA16) | | | |
| | | 8.31 | $\frac{1}{2}^+$ | < 0.5 | (1965WA16) | | | |
| 9.152 | $\frac{3}{2}^-$ | 0 | $\frac{1}{2}^-$ | 100 ± 3 | $+0.015^{+0.041}_{-0.034}$ | (1969SI04, 1976BE1B) ^d | | |
| | | | | | | (1976BE1B) | | |
| 9.155 | $\frac{5}{2}$ | 0 | $\frac{1}{2}^-$ | 9 ± 9 | | (1968ST10) | | |
| | | 5.27 | $\frac{3}{2}^+$ | ≈ 8 | | (1967TH05) | | |
| | | 5.30 | $\frac{1}{2}^+$ | ≈ 10 | | (1967TH05) | | |
| | | 6.32 | $\frac{3}{2}^-$ | 20 ± 2 | | (1967TH05, 1968ST10, 1969SI04) | | |
| | | 7.16 | $\frac{5}{2}^+$ | ≈ 50 | | (1967TH05, 1968ST10, 1969SI04) | | |
| | | 7.30 | $\frac{3}{2}^+$ | 8 ± 1 | (1968ST10) | | | |
| 9.23 | $\frac{1}{2}^-$ | 0 | $\frac{1}{2}^-$ | < 30 | | (1965WA16) | | |
| | | | | 41.5 ± 2.2 | | (1967PH03) | | |
| | | 5.27 | $\frac{5}{2}^+$ | < 25 | | (1965WA16) | | |
| | | 5.30 | $\frac{1}{2}^+$ | 100 | | (1965WA16) | | |
| | | 5.27 + 5.30 | | 31.2 ± 1.7 | | (1967PH03) | | |
| | | 6.32 | $\frac{3}{2}^-$ | ≤ 25 | | (1965WA16) | | |
| | | | | 24.7 ± 1.5 | | (1967PH03) | | |
| | | 7.16 | $\frac{5}{2}^+$ | < 30 | | (1965WA16) | | |
| | | | | < 1 | | (1967PH03) | | |
| | | 7.30 | $\frac{3}{2}^+$ | < 30 | | (1965WA16) | | |
| | | 7.57 | $\frac{7}{2}^+$ | 2.6 ± 0.7 | (1967PH03) | | | |
| | | 7.57 | $\frac{7}{2}^+$ | < 20 | (1965WA16) | | | |
| | | 8.31 | $\frac{1}{2}^+$ | < 5 | (1965WA16) | | | |
| 9.76 ^e | $\frac{5}{2}^-$ | 0 | $\frac{1}{2}^-$ | 81.5 ± 2.8 | | (1967PH03) | | |
| | | 5.27 + 5.30 | | 7.5 ± 1.5 | | (1967PH03) | | |
| | | 6.32 | $\frac{3}{2}^-$ | 3.7 ± 0.8 | | (1967PH03) | | |
| | | 7.16 | $\frac{5}{2}^+$ | 2.3 ± 0.5 | | (1967PH03) | | |
| | | 7.30 | $\frac{3}{2}^+$ | < 2 | | (1967PH03) | | |
| | | | | 7.57 | | $\frac{7}{2}^+$ | 5.0 ± 0.6 | (1967PH03) |
| | | | | 7.57 | | $\frac{7}{2}^+$ | 5.0 ± 0.6 | (1967PH03) |

Table 15.5 from (1976AJ04):Radiative decays in $^{15}\text{N}^a$ (continued)

| E_i (MeV) | J_1^π | E_f (MeV) | J_f^π | Branch (%) | Mult. mixing ratio δ | Refs. ¹ |
|--------------------|-----------------|---------------------------|--------------------------------|----------------|--------------------------------|----------------------|
| 9.83 | $\frac{7}{2}$ | 8.31 | $\frac{1}{2}^+$ | < 1 | | (1967PH03) |
| | | 8.57 | $\frac{3}{2}^+$ | < 2 | | (1965WA16, 1967PH03) |
| | | 0 | $\frac{1}{2}^-$ | < 4 | | (1967PH03) |
| | | 5.27 | $\frac{3}{2}^+$ | ≈ 85 | | (1965WA16, 1967PH03) |
| | | 5.30 | $\frac{1}{2}^+$ | < 15 | | (1965WA16) |
| | | 6.32 | $\frac{3}{2}^-$ | 2.2 ± 0.9 | | (1967PH03) |
| | | 7.16 | $\frac{3}{2}^+$ | 2.4 ± 1.1 | | (1967PH03) |
| | | 7.30 | $\frac{3}{2}^+$ | 3.7 ± 0.9 | | (1967PH03) |
| | | 7.57 | $\frac{7}{2}^+$ | 7.3 ± 1.0 | | (1967PH03) |
| | | 9.93 ^e | $(\frac{1}{2}, \frac{3}{2})^+$ | 0 | $\frac{1}{2}^-$ | 77.6 ± 1.9 |
| 5.27 + 5.30 | | | | 15.4 ± 1.5 | | (1967PH03) |
| 6.32 | $\frac{3}{2}^-$ | | | 4.9 ± 1.2 | | (1967PH03) |
| 7.16 | $\frac{3}{2}^+$ | | | < 1 | | (1967PH03) |
| 7.30 | $\frac{3}{2}^+$ | | | 2.1 ± 0.8 | | (1967PH03) |
| 7.57 | $\frac{7}{2}^+$ | | | < 1 | | (1967PH03) |
| 8.31 | $\frac{1}{2}^+$ | | | < 1 | | (1967PH03) |
| 8.57 | $\frac{3}{2}^+$ | | | < 1 | | (1967PH03) |
| 0 | $\frac{1}{2}^-$ | | | 96.0 ± 0.7 | | (1967PH03) |
| 10.07 ^e | $\frac{3}{2}^+$ | | | 5.27 + 5.30 | | 4.0 ± 0.7 |
| | | 6.32, 7.16, 7.30, 7.57 | | < 2 | | (1966WA08) |
| | | 8.31 | $\frac{1}{2}^+$ | < 2 | | (1965WA16) |
| | | 8.57 | $\frac{3}{2}^+$ | < 3 | | (1965WA16) |
| | | 0 | $\frac{1}{2}^-$ | < 12 | | (1976BE1B) |
| 10.45 | $\frac{5}{2}^-$ | 5.27 | $\frac{3}{2}^+$ | 55.0 ± 0.8 | $+0.021 \pm 0.033$ | (1976BE1B) |
| | | 5.30 | $\frac{1}{2}^+$ | < 2 | | (1976BE1B) |
| | | 6.32 | $\frac{3}{2}^-$ | 31.3 ± 1.7 | -0.59 ± 0.13 | (1976BE1B) |
| | | 7.16 | $\frac{3}{2}^+$ | 5.2 ± 0.1 | $+0.13^{+0.03}_{-0.04}$ | (1976BE1B) |
| | | 8.57 | $\frac{3}{2}^+$ | 3.8 ± 0.6 | -0.3 ± 0.4 | (1976BE1B) |
| | | 9.152 | $\frac{3}{2}^-$ | 4.7 ± 0.1 | $-0.32^{+0.09}_{-0.10}$ | (1976BE1B) |
| | | 9.83 | $\frac{7}{2}^-$ | < 0.1 | | (1976BE1B) |
| | | 0 | $\frac{1}{2}^-$ | < 0.1 | | (1976BE1B) |
| | | 5.27 | $\frac{5}{2}^+$ | 38.7 ± 0.2 | -0.27 ± 0.03 | (1976BE1B) |
| | | 6.32 | $\frac{3}{2}^-$ | 7.7 ± 0.1 | -0.028 ± 0.004 | (1976BE1B) |
| 10.53 | $\frac{5}{2}^+$ | 7.16 | $\frac{5}{2}^+$ | 19.4 ± 0.2 | $+0.007^{+0.010}_{-0.008}$ | (1976BE1B) |
| | | 7.30 | $\frac{3}{2}^+$ | 31.4 ± 0.5 | $+0.066 \pm 0.005$ | (1976BE1B) |
| | | 8.57 | $\frac{3}{2}^+$ | 2.4 ± 0.1 | $+0.012^{+0.006}_{-0.005}$ | (1976BE1B) |

Table 15.5 from (1976AJ04):Radiative decays in ^{15}N ^a (continued)

| E_i (MeV) | J_i^π | E_f (MeV) | J_f^π | Branch (%) | Mult. mixing ratio δ | Refs. ¹ |
|--------------------|----------------------------------|--------------------|-----------------|-----------------------------|--------------------------------|----------------------|
| 10.69 | $\frac{9}{2}^+$ | 9.152 | $\frac{1}{2}^-$ | 0.3 ± 0.1 | $-0.20^{+0.03}_{-0.02}$ | (1976BE1B) |
| | | 5.27 | $\frac{1}{2}^+$ | 61.6 ± 0.3 | $\equiv 0$ | (1975BE23, 1976BE1B) |
| | | 7.16 | $\frac{1}{2}^+$ | 2.1 ± 0.1 | -0.03 ± 0.07 | (1975BE23, 1976BE1B) |
| | | 7.57 | $\frac{1}{2}^+$ | 36.3 ± 0.6 | $+0.118 \pm 0.008$ | (1975BE23, 1976BE1B) |
| 10.70 ^f | $\frac{3}{2}^-$ | 0 | $\frac{1}{2}^-$ | 52.6 ± 0.8 | $+0.180^{+0.006}_{-0.002}$ | (1976BE1B) |
| | | 5.27 | $\frac{1}{2}^+$ | 37.4 ± 0.6 | $-0.024^{+0.004}_{-0.008}$ | (1976BE1B) |
| | | 5.30 | $\frac{1}{2}^+$ | 0.8 ± 0.1 | -0.13 ± 0.07 | (1976BE1B) |
| | | 6.32 | $\frac{3}{2}^-$ | 3.8 ± 0.1 | $+0.135 \pm 0.015$ | (1976BE1B) |
| | | 7.16 | $\frac{1}{2}^+$ | 0.4 ± 0.1 | 0.3 ± 0.3 | (1976BE1B) |
| | | 7.30 | $\frac{1}{2}^+$ | 2.3 ± 0.1 | -0.027 ± 0.023 | (1976BE1B) |
| | | 8.31 | $\frac{1}{2}^+$ | 0.8 ± 0.1 | $-0.017^{+0.018}_{-0.016}$ | (1976BE1B) |
| | | 9.05 | $\frac{1}{2}^+$ | 0.2 ± 0.1 | -0.007 ± 0.12 | (1976BE1B) |
| | | 9.152 | $\frac{1}{2}^-$ | 0.2 ± 0.1 | -0.11 ± 0.03 | (1976BE1B) |
| | | 9.23 | $\frac{1}{2}^-$ | 1.5 ± 0.1 | $+0.049^{+0.006}_{-0.005}$ | (1976BE1B) |
| | | 10.80 ^g | $\frac{3}{2}^+$ | 0 | $\frac{1}{2}^-$ | 51.5 ± 0.4 |
| 5.27 | $\frac{1}{2}^+$ | | | 4.9 ± 0.1 | -0.63 ± 0.04 ^f | (1976BE1B) |
| 5.30 | $\frac{1}{2}^+$ | | | 15.5 ± 0.2 | -0.55 ± 0.02 ^f | (1976BE1B) |
| 6.32 | $\frac{3}{2}^-$ | | | 5.4 ± 0.2 | -0.07 ± 0.05 ^f | (1976BE1B) |
| 7.16 | $\frac{1}{2}^+$ | | | 7.8 ± 0.1 | $+0.14 \pm 0.03$ ^f | (1976BE1B) |
| 7.30 | $\frac{1}{2}^+$ | | | 5.8 ± 0.1 | -0.12 ± 0.02 ^f | (1976BE1B) |
| 8.31 | $\frac{1}{2}^+$ | | | 3.6 ± 0.1 | $+0.12 \pm 0.03$ ^f | (1976BE1B) |
| 9.05 | $\frac{1}{2}^+$ | | | 0.3 ± 0.1 | | (1976BE1B) |
| 9.152 | $\frac{1}{2}^-$ | | | 0.9 ± 0.1 | | (1976BE1B) |
| 9.155 | $\frac{1}{2}^-$ | | | 4.2 ± 0.1 | | (1976BE1B) |
| 11.62 ^h | $\frac{1}{2}^+; T = \frac{3}{2}$ | | | 0 | $\frac{1}{2}^-$ | 90.7 ± 3.0 |
| | | 5.27 | $\frac{1}{2}^+$ | < 1 | | (1971KU01) |
| | | 5.30 | $\frac{1}{2}^+$ | 7.4 ± 1.5 | | (1971KU01) |
| | | 6.32 | $\frac{1}{2}^-$ | 1.9 ± 1.5 | | (1971KU01) |
| 12.52 | $\frac{5}{2}^+; T = \frac{3}{2}$ | 0 | $\frac{1}{2}^-$ | < 1 | | (1971KU01) |
| | | 5.27 | $\frac{1}{2}^+$ | 94.2 ± 0.6 ⁱ | | (1971YO03) |
| | | 5.30 | $\frac{1}{2}^+$ | < 1 | | (1971KU01) |
| 13.42 ^k | $\frac{3}{2}^+$ | 6.32 | $\frac{1}{2}^-$ | 5.8 ± 0.6 ^j | | (1971YO03) |
| | | 0 | $\frac{1}{2}^-$ | 100 | | (1976KU01) |

- ^a See also [Table 15.10 in \(1970AJ04\)](#).
- ^b $\Gamma_{\gamma_0} = 3.1 \pm 0.3$ eV, $\delta(\text{E2/M1}) = 0.137 \pm 0.005$ ([1975MO28](#)); see also [Table 15.16](#).
- ^c See also ([1965WA16](#), [1966PE04](#), [1968GI11](#)).
- ^d See also ([1968ST06](#)) and [reaction 44](#).
- ^e See also ([1965WA16](#)).
- ^f See ([1969SI04](#) and private communication).
- ^g See also ([1965WA16](#), [1966WA08](#)).
- ^h $\Gamma_{\gamma} = 49 \pm 20, 4 \pm 2, 1.0 \pm 0.8$ for transitions to $^{15}\text{N}^*(0, 5.30, 6.32)$ ([1971KU01](#)): see also [Table 15.12](#).
- ⁱ $\Gamma_{\gamma} = 4.3 \pm 0.7$ eV ([1971YO03](#)); $\delta = -0.02 \pm 0.04$ (E2/M1) ([1971KU01](#)).
- ^j $\Gamma_{\gamma} = 0.27 \pm 0.05$ eV ([1971YO03](#)); $\delta = -0.02 \pm 0.04$ (E2/M1) ([1971KU01](#)).
- ^k $\Gamma_{\gamma_0} = 3.0 \pm 0.9$ eV, $\Gamma_{\text{p}}\Gamma_{\gamma_0}/\Gamma = 1.70 \pm 0.5$ eV; $\delta = 0.00 \pm 0.04$ (M2/E1); $B(\text{E1}) = 1.2 \pm 0.4 \times 10^{-3} e^2 \cdot \text{fm}^2$. Transitions to $^{15}\text{N}^*(5.27, 5.30) < 8\%$ and to $^{15}\text{N}^*(6.32, 7.16, 7.30) < 5\%$ ([1976KU01](#)). See also ([1975HA39](#)).
- ^l And private communication with authors of ([1969SI04](#)).