



1 Decay Scheme

Le carbone 11 se désintègre à 99,750(13)% par émission bêta-plus, et 0,250(13)% par capture électronique vers le niveau fondamental de bore 11.

C-11 disintegrates by 99.750(13) % beta-plus, and 0.250(13)% by electron capture to the ground state of the stable nuclide B-11.

2 Nuclear Data

$$T_{1/2}({}^{11}\text{C}) : 20,370 \quad (29) \quad \text{min}$$

$$Q^+({}^{11}\text{C}) : 1982,5 \quad (9) \quad \text{keV}$$

2.1 β^+ Transitions

	Energy keV	Probability $\times 100$	Nature	lg ft
$\beta_{0,0}^+$	960,5 (9)	99,750 (13)	Allowed	3,592

2.2 Electron Capture Transitions

	Energy keV	Probability $\times 100$	Nature	P _K	P _L
$\epsilon_{0,0}$	1982,5 (9)	0,250 (13)	Allowed	0,9174 (91)	0,0826 (91)

3 Electron Emissions

	Energy keV	Electrons per 100 disint.
$\beta_{0,0}^+$	max: 960,5 (9)	99,750 (13)
$\beta_{0,0}^+$	avg: 385,7 (4)	

4 Photon Emissions

4.1 Gamma Emissions

	Energy keV	Photons per 100 disint.
γ^\pm	511	199,500 (26)

5 Main Production Modes

$\text{C} - 12(\gamma, n)\text{C} - 11$
 $\text{C} - 12(d, t)\text{C} - 11$
 $\text{Li} - 6(\text{Li} - 6, n)\text{C} - 11$
 $\text{Li} - 7(\text{Li} - 6, 2n)\text{C} - 11$
 $\text{B} - 11(p, n)\text{C} - 11$
 $\text{B} - 10(d, n)\text{C} - 11$
 $\text{N} - 14(d, n\alpha)\text{C} - 11$
 $\text{B} - 10(\alpha, t)\text{C} - 11$
 $\text{Be} - 9(\alpha, 2n)\text{C} - 11$
 $\text{B} - 10(p, \gamma)\text{C} - 11$
 $\text{B} - 11(d, 2n)\text{C} - 11$
 $\text{C} - 12(p, pn)\text{C} - 11$
 $\text{C} - 12(\text{He} - 3, \alpha)\text{C} - 11$
 $\text{Be} - 9(\text{He} - 3, n)\text{C} - 11$
 $\text{C} - 13(p, p2n)\text{C} - 11$
 $\text{B} - 10(\text{He} - 3, d)\text{C} - 11$
 $\text{C} - 12(\pi^+, p)\text{C} - 11$

6 References

- J. H. C. SMITH, D. B. COWIE. J. Appl. Phys. 12 (1941) 78
(Half-life.)
- A. K. SOLOMON. Phys. Rev. 60 (1941) 279
(Half-life.)
- J. M. DICKSON, T. C. RANDLE. Proc. Phys. Soc. (London) 64A (1951) 902
(Half-life.)
- D. N. KUNDU, T. W. DONAVEN, M. L. POOL, J. K. LONG. Phys. Rev. 89 (1953) 1200
(Half-life.)
- W. C. BARBER, W. D. GEORGE, D. D. REAGAN. Phys. Rev. 98 (1955) 73
(Half-life.)
- I. D. PROKOSHKIN, A. A. TIAPKIN. Soviet. Phys. JETP 5 (1957) 148
(Half-life.)
- J. SCOBIE, G. M. LEWIS. Phys. Mag. 2 (1957) 1089
(K/ β^+ ratio.)
- S. E. ARNELL, J. DUBOIS, O. ALMEN. Nucl. Phys. 6 (1958) 196
(Half-life.)
- V. J. JANECKE. Z. Naturforsch. 15A (1960) 593
(Half-life.)
- T. M. KAVANAGH, J. K. P. LEE, W. T. LINK. Can. J. Phys. 42 (1964) 1429
(Half-life.)
- J. R. PATTERSON, J. M. POATE, E. W. TUTTERTON, B. A. ROBSON. Proc. Phys. Soc. (London) 86 (1965) 1297
(Half-life.)
- J. L. CAMPBELL, W. LEIPER, K. W. LEDINGHAM, R. W. P. DREVER. Nucl. Phys. A 96 (1967) 279
(K/ β^+ ratio, end-point energy.)
- E. VATAI. Proc. Conf. Electron Capture and Higher order processes in Nuclear Decay 2 (1968) 71
(K/ β^+ ratio)
- M. AWSCHALOM, F. L. LARSEN, W. SCHIMMERLING. Nucl. Inst. Meth. 75 (1969) 93
(Half-life.)
- J. SINGH. Proc. Nucl. Phys. and Solid State Phys. Symp. 15B (1972) 1
(Half-life.)
- K. R. HOGSTROM, B. W. MAYES, L. Y. LEE, J. C. ALLRED, C. GOODMAN, G. S. MUTCHLER, C. R. FLETCHER, G. C. PHILLIPS. Nucl. Phys. A 215 (1973) 598
(Half-life.)
- M. L. FITZPATRICK, K. W. D. LEDINGHAM, J. Y. GOURLAY, J. G. LYNCH. J. Phys. A 6 (1973) 713
(K/ β^+ ratio, end-point energy.)
- G. AZUELOS, J. E. KITCHING. Phys. Rev. C 12 (1975) 563
(Half-life, end-point energy.)
- F. AJZENBERG-SELOVE. Nucl. Phys. A 248 (1975) 1
(Half-life, end point energy, Q, log ft.)
- H. BEHRENS, M. KOBELT, L. SZYBISZ, W. G. THIES. Nucl. Phys. A 246 (1975) 317
(Half-life, end-point energy.)
- W. BAMBYNEK, H. BEHRENS, M. H. CHEN, B. CRASEMANN, M. L. FITZPATRICK, K. W. D. LEDINGHAM, H. GENZ, M. MUTTERE, R. L. INTEMANN. Rev. Mod. Phys. 49 (1977) 77
(Electron Capture.)
- S. RAMAN, C. A. HOUSER, T. A. WALKIEWICZ, I. S. TOWNER. Atomic Data and Nucl. Data Tables 21 (1978) 567
(Half-life, Q, End point energy.)
- W. BAMBYNEK. Proc. X-Ray and Inner Shell Processes (1984)
(Atomic Data.)
- F. AJZENBERG-SELOVE. Nucl. Phys. A 506 (1990) 1
(Half-life, end point energy, Q, log ft.)
- G. AUDI, A. H. WAPSTRA. Nucl. Phys. A 595 (1995) 409
(Q.)

