

^{16}C

^{16}C was discovered in 1961 by Hinds et al. in “New Isotope of Carbon: C^{16} ” (1961Hi01). The Aldermaston electrostatic generator was used to accelerate tritons to 6 MeV which bombarded a ^{14}C target. ^{16}C was produced in the (t,p) reaction and the protons were analyzed with a broad-range magnetic spectrograph. In addition, the half-life was determined by measuring β -delayed neutrons. “The energy of the incident triton beam was determined in terms of the Q value of the $\text{C}^{12}(\text{t,p})\text{C}^{14}$ reaction and from this the Q value of the $\text{C}^{14}(\text{t,p})\text{C}^{16}$ reaction was calculated to be -3.014 ± 0.016 Mev. This is consistent with a C^{16} mass excess of 13.694 ± 0.017 Mev and a mass of 16.014702 ± 0.000017 mass units, both referred to the scale on which the mass excess of C^{12} is zero.”

Adapted from reference (2012Th01)

1961Hi01 S. Hinds, R. Middleton, A. E. Litherland, and D. J. Pullen, Phys. Rev. Lett. **6**, 113 (1961).

2012Th01 M. Thoennessen, At. Data Nucl. Data Tables **98**, 43 (2012).

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