

${}^7\text{Be}({}^3\text{He},n)$  1971Mo01

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, B. Grees		ENSDF	31-July-2020

**1971Mo01:** The mass and half-life of  ${}^9\text{C}$  were measured using at the Office of Naval Research-California Institute of Technology tandem Van de Graff accelerator. The  ${}^7\text{Be}({}^3\text{He},n){}^9\text{C}$ , at  $\approx 9\text{-}12$  MeV was used to produce the  ${}^9\text{C}$  ions on a target mounted on a solenoid-operated arm that switched the activation position and the counting position. The activation period was followed by a counting period that was varied between 0.9 and 2.2 s. The event rate data were binned in 10 ms time bins. Because of the high background rate from the  ${}^7\text{Be}$  target, a silicon  $\Delta E\text{-}E$  telescope was used to detect  $\beta\text{-}p$  events during the counting period. The half-life was measured as 126.5 ms 2.

The  ${}^7\text{Be}({}^3\text{He},n){}^9\text{C}$  reaction threshold was also determined as 8980 keV 5, which corresponds to mass excess  $\Delta M({}^9\text{C})=28907$  keV 4. The author analyzed the  $A=9$  isospin-quartet states to test the quadratic mass formula and discussed the results and implications.

 ${}^9\text{C}$  Levels

E(level)	$T_{1/2}$	Comments
0	126.5 ms 2	E(level): $\Delta M=28907$ keV 4.