^{9}B

First evidence for the unbound nature of ^{9}B was demonstrated by Haxby et al. in "Thresholds for the Proton-Neutron Reactions of Lithium, Beryllium, Boron, and Carbon" in 1940 (1940Ha22). Protons up to 3.7 MeV from the pressure electrostatic generator at the Westinghouse Research Laboratories in East Pittsburgh, Pennsylvania, bombarded beryllium targets, and neutrons from the (p,n) charge exchange reaction were measured with a BF_3 ionization chamber. "The observed energy difference (B^9-Be^9) would permit a positron radioactivity with maximum positron energy of 0.06 Mev or a K-electron capture... One may account for the absence of such activity in B^9 by the fact that B^9 is unstable with regard to dissociation into Be^8 + H^1... Hence we conclude that the Be^9(p,n)^{9}B reaction is immediately followed by the $B^9 \rightarrow He^4 + He^4 + H^1$ disintegration." The extracted mass for ^{9}B was 9.01600(13) amu.

Adapted from reference (2012Th01)

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