^{9}Be(^{40}Ar,^{16}Be) 2003Ba47

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. Kelley	ENSDF	29-Sept-2014

2003Ba47: The authors analyzed the ^{40}Ar+^{9}Be fragmentation products in search of evidence for particle bound states in ^{16}Be.

A beam of 140 MeV/nucleon ^{40}Ar ions, from the NSCL coupled cyclotron facility, impinged on a 1.5 g/cm^{2} ^{nat}Be target. The resulting fragmentation products were momentum analyzed using the A1900 fragment separator. The products were detected using a position sensitive PPAC, a 500 μm thick Si ΔE detector and a stopping thickness plastic E scintillator that were located at the final focal plane of the device. The time difference between a thin plastic scintillator located at the intermediate image of the separator and the thick stopping detector were compared to determine the the time-of-flight (ToF) between the two image planes. The particle identification at the focal plane was determined using both ΔE-E and ΔE-ToF techniques.

No events corresponding to ^{16}Be were observed. By comparison, ^{6,8}He, ^{9,11}Li, ^{12,14}Be, ^{17,19}B and ^{20}C nuclides were observed at the focal plane. The measured intensity of ^{19}B was expected to be an order of magnitude lower than that of ^{16}Be. As a result, the authors conclude ^{16}Be is unbound. See also (2004Th15).