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 $^9\text{Be}(^{40}\text{Ar},^{20}\text{N})$  [2000Oz01,2007No13](#)

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Type	History		Literature Cutoff Date
	Author	Citation	
Full Evaluation	C. G. Sheu, J. H. Kelley	ENSDF	31-Dec-2018

[2000Oz01](#): A beam of  $^{40}\text{Ar}$  at  $E \approx 1$  GeV/nucleon impinged on a Be target ( $4007 \text{ mg/cm}^2$ ) at the GSI SIS/FRS facility. The  $^{20}\text{N}$  fragments of interest were identified using the  $B\rho$  settings along with scintillators to measured  $\Delta E$  and time-of-flight (tof). Fragmentation production cross sections were measured as  $\sigma_F = 3.38 \times 10^{-6} \text{ b}$  77.

[2007No13](#): Production of  $^{20}\text{N}$  via projectile fragmentation was studied at the RIKEN Accelerator Research Facility using  $^{40}\text{Ar}$  beams at  $E=90, 94 \text{ MeV/nucleon}$  that impinged on either a  $95 \text{ mg/cm}^2$  thick  $^9\text{Be}$  target or a  $17 \text{ mg/cm}^2$  thick  $^{\text{nat}}\text{Ta}$  target. The beams were momentum analyzed using the RIPS doubly achromatic spectrometer before being identified using two surface-barrier silicon counters and a plastic scintillator to identify products via  $\Delta E$  and time-of-flight (tof) at the focal plane. The fragment momentum distribution and production cross sections were deduced. See also ([2015Mo17](#)) for transverse momentum ( $P_T$ ) distribution and width ( $\sigma_T$ ) analysis.

[2012Kw02](#): Several light neutron-rich nuclides, produced by projectile fragmentation of an  $^{40}\text{Ar}$  beam at  $E=140 \text{ MeV/nucleon}$ , bombarded one of three targets,  $668 \text{ mg/cm}^2$   $^9\text{Be}$ ,  $775 \text{ mg/cm}^2$   $^{\text{nat}}\text{Ni}$ , and  $1086 \text{ mg/cm}^2$   $^{181}\text{Ta}$  at the National Superconducting Cyclotron Laboratory (NSCL). Fragments were momentum analyzed using the A1900 separator and identified at the final focus using time-of-flight and a telescope consisting of five Si  $\Delta E$  detectors. The fragmentation cross sections, parallel momentum transfers, and parallel momentum distribution widths were measured and compared to the theoretical predictions.

 $^{20}\text{N}$  LevelsE(level)

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