

$^{12}\text{C}(^{18}\text{N},\text{X})$ 2001Oz03,2019Ba11

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	R. Spitzer, J. H. Kelley	ENSDF	30-Jun-2021

Includes ^9Be , ^{12}C , ^{28}Si , ^{197}Au targets.

[2001Oz03](#): The interaction cross section of $^{12}\text{C}(^{18}\text{N},\text{X})$ was measured at 1020 MeV/nucleon using the GSI/FRS. $\sigma_{\text{I}}=1046$ mb 8 for ^{18}N was deduced. The matter radius $R_{\text{r.m.s.}}=2.65$ fm 2 was deduced. See also ([2001Oz04](#)).

[2002Li40](#): A beam of 33 MeV/nucleon ^{18}N ions from the Lanzhou/RIBLL was fragmented on either a ^9Be or ^{197}Au target. The reaction products were identified using a set of fourteen ΔE - ΔE -E Si telescopes that covered $\theta=2.1^\circ-10^\circ$; coincident neutrons were also measured using a set of sixteen NE110 plastic scintillator detectors. The fragment isotopic yields were obtained in the analysis and compared with a relativistic mean field calculation of the ^{18}N nucleon density distribution.

[2006Kh08](#): The reaction cross section of ^{18}N ions on ^{28}Si was measured at GANIL by impinging a 53.2 MeV/nucleon ^{18}N beam, produced using the SISSI solenoids, into a ΔE - ΔE -E-VETO telescope that was placed at the focal plane of the SPEG spectrometer. The cross section $\sigma_{\text{R}}=2104$ mb 32 was measured.

[2019Ba11](#): The charge-changing cross sections of nitrogen nuclei were measured at GSI to determine the systematic variations of the charge distributions. Beams of ≈ 775 -940 MeV/nucleon $^{14-22}\text{N}$ ions were separately produced in the FRS and impinged on a 4.01 g/cm² carbon target. MUSIC ionization chambers identified beam particles before and after the target on an event-by-event basis. The charge-changing cross sections were determined and analyzed using a Glauber model. The rms point proton and matter radii for ^{18}N deduced in the measurement are $R_{\text{rms}}^{\text{p}}=2.53$ fm 3 and $R_{\text{rms}}^{\text{m}}=2.68$ fm 2.

See related discussion in ([2002Me12,2017Ah08](#)).

 ^{18}N Levels

E(level)	Comments
0	$R_{\text{r.m.s.}}^{\text{m}}=2.65$ fm 2 (2001Oz03), see also $R_{\text{rms}}^{\text{p}}=2.53$ fm 3 and $R_{\text{rms}}^{\text{m}}=2.68$ fm 2 (2019Ba11).