
 $^{19}\text{F}(\text{p},3\text{n})$ [1963Ba63,1964Mc16](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, G. C. Sheu		ENSDF	16-Jan-2018

[1963Ba63](#): Barton et al., are credited with the discovery of ^{17}Ne . a variety of targets were bombarded by a 97 MeV proton beam from the McGill synchrocyclotron. The results on ^{17}Ne were obtained by comparing the delayed protons emitted following bombardment of NaF and LiF targets. Proton groups with $E_p \approx 3.6$ and 4.6 were measured using a silicon detector telescope and were attributed to β -delayed proton decay from ^{17}Ne . The lifetime was longer than the 2.5 ms period between cyclotron beam bursts.

[1964Mc16](#): An activation target assembly was mounted on a probe that could be inserted into the McGill synchrocyclotron. Various targets containing LiF or Cf_2 (teflon) were inserted into the cyclotron for proton bombardment at $E_p=40$ to 80 MeV. The cyclotron was operated in a mode to provide an activation period, a beam dissipation period of 100 ms and a ≈ 500 ms counting period. Three proton groups at $E_p=4.10$, 4.92 and 5.40 are consistent with β -delayed proton emission. The different target compositions yielded different lifetime results, suggesting some diffusion from the target. A half-life of $T=102$ ms ⁷ is measured, though 103 ms ⁷ is arbitrarily suggested to account for neon diffusion from the target. Analysis of the excitation function indicates a reaction threshold of 36.6 MeV ³.

[1965Ha20](#): In this follow-up of ([1964Mc16](#)) additional statistics were obtained and further analysis was carried out on ^{17}F levels fed in the decay of ^{17}Ne . See also ([1966Ha22,1966Ma12](#)).

 ^{17}Ne Levels

E(level)	$T_{1/2}$
0	102 ms ⁷