^{19}F(p,^{3}He) 1967Co05,1974Ne03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. G. Sheu, J. H. Kelley, J. Purcell	ENSDF	5-Aug-2021

1967Co05: Reaction ^{19}F(p,^{3}He) was studied by bombarding a Teflon (Cf_2) target with a beam of 30.5 MeV protons from the University of Southern California linear accelerator. Charged particles were detected by a counter telescope consisting of 2 Si surfacs-barrier detectors and were identified by the E-ΔE method. Abosolute differential cross sections were measured at θ=16°−111°. The ground state and the first excited state of ^{17}O*(0.871 MeV) were observed.

1972HuZR: ^{19}F(p,^{3}He), E=45 MeV; measured total σ, $\sigma(\theta)$. ^{17}O transitions deduced L.

1974Ne03: An E_p=42.4 MeV beam from the University of Manitoba sector focussed cyclotron impinged on a 2.19 mg/cm^2 (surface density) fluorine target. Two detector telescopes, each consisting of a 200 μm ΔE detector, a 3 mm lithium drifted E-detector and a veto counter, mounted in a 71 cm diameter scattering chamber, were used to detect emitted particles. An Ortec particle identifier units was used to identify particles. The differential cross sections of the reaction ^{19}F(p,^{3}He) corresponding to the levels of ^{17}O*(0, 0.871, 3.055, 3.841) were measured. Comparisons were made with the analog transitions in the mirror reaction ^{19}F(p,t)^{17}F.

^{17}O Levels

E(level)[†]	J^{π}[†]
0[‡#]	$5/2^+$
871[‡#]	$1/2^+$
3060[#]	$1/2^-$
3850[#]	$5/2^-$

[†] Nominal values listed in (1967Co05,1974Ne03).
[‡] Observed in (1967Co05).
[#] Observed in (1974Ne03).