

$^1\text{H}(^{55}\text{Co},\text{N})$  2012Sa37

Type	History		Literature Cutoff Date
	Author	Citation	
Full Evaluation	Balraj Singh	ENSDF	30-Apr-2022

2012Sa37, 2011Sa52:  $^{55}\text{Co}(p,n)^{55}\text{Ni}$  charge exchange reaction in inverse kinematics with  $^{55}\text{Co}$  beam, and liquid hydrogen target 60 mg/cm<sup>2</sup> thick, placed 65 cm from the pivot point of S800 spectrograph at the NSCL-MSU facility.  $^{55}\text{Co}$  secondary beam at 110 MeV/nucleon produced in fragmentation of E=160 MeV/nucleon  $^{58}\text{Ni}$  beam on a  $^9\text{Be}$  target, and  $^{55}\text{Co}$  fragments separated in flight by the A1900 fragment separator. Ion identification by time-of-flight and energy loss information in a Si detector. Measured neutron spectrum using LENDA array of 24 plastic scintillators in singles and coincidences with  $^{55}\text{Ni}$  ions. Angular distributions were measured up to 8° in c.m. system. Measured Gamow-Teller strength for excitations in  $^{55}\text{Ni}$  up to 15 MeV. Comparison with shell-model calculations in the *pf* shell using the KB3G and GXPF1J interactions.

$J^\pi(^{55}\text{Co g.s.})=7/2^-$ .

This reaction was used for calibration purpose for the  $^1\text{H}(^{56}\text{Ni},n)^{56}\text{Cu}$  reaction.

 $^{55}\text{Ni}$  Levels

E(level)	$J^\pi$	L	Comments
0 <15×10 <sup>3</sup>	7/2 <sup>-</sup>	0	Measured Gamow-Teller strength=5.3 5(stat) +25-15(syst) for 0-15 MeV excitation energy range in $^{55}\text{Ni}$ (2012Sa37). This value is compared by authors to 6.8 and 6.2 from shell-model calculations using GXPF1J and KB3G interactions, respectively.