

$^{23}\text{Na}(n,p)$  1995Si19

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia <sup>#</sup> , A. Chakraborty <sup>##</sup>		NDS 171, 1 (2021)	1-Jun-2020

Nearly monoenergetic neutron beam, E=198 MeV, obtained from  $^7\text{Li}(p,n)$  reaction and a neutron flux at secondary target was  $1 \times 10^5$  #/sec.cm<sup>2</sup>. Na targets (thickness 100 mg/cm<sup>2</sup>) between 6.0  $\mu\text{m}$  Mylar in Cu support frames. Target stack of four  $^{23}\text{Na}$ , one CH<sub>2</sub> (for calibration), one Mylar (for background subtraction). Protons were momentum analyzed in the Medium Resolution Spectrometer at five angles from 0° to 24° in step of 6°. Measured differential cross sections. Overall energy resolution 900 keV. Deduce Gamow-Teller (GT) transition probabilities to low lying 1/2<sup>+</sup>, 3/2<sup>+</sup>, and 5/2 Ne states and the GT<sup>+</sup> strength distribution up to 25000 keV excitation energy.

An expected value of unit cross section of 8.90 mb/sr 45 was used by 1995Si19 to determine the values of B<sub>GT</sub><sup>+</sup>.

 $^{23}\text{Ne}$  Levels

E(level) <sup>†</sup>	J <sup>π</sup> <sup>†</sup>	Comments
0	5/2 <sup>+</sup>	$\sigma(1.5^\circ)=0.300$ mb 51, B <sub>GT</sub> <sup>+</sup> =0.038 6.
1017	1/2 <sup>+</sup>	$\sigma(1.5^\circ)=0.364$ mb 55, B <sub>GT</sub> <sup>+</sup> =0.048 7.
1823	3/2 <sup>+</sup>	$\sigma(1.5^\circ)=0.312$ mb 58, B <sub>GT</sub> <sup>+</sup> =0.041 8.
2315	5/2 <sup>+</sup>	$\sigma(1.5^\circ)\leq 0.162$ mb, B <sub>GT</sub> <sup>+</sup> $\leq 0.021$ 8.
3445 13	3/2 <sup>+</sup> to 1/2 <sup>+</sup>	E(level): 3432-3458. $\sigma(1.5^\circ)=2.35$ mb 24, B <sub>GT</sub> <sup>+</sup> =0.318 33.

<sup>†</sup> As listed in 1995Si19.