^{37}Cl(p,^{3}He) 1975Gu15

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen, John Cameron and Balraj Singh	NDS 112,2715 (2011)	20-Oct-2011

1975Gu15: E=40.2 MeV protons produced from the Michigan State University cyclotron. Target: NaCl isotropically enriched in ^{37}Cl (97%) with thickness of 55 μg/cm^2, made by evaporation of of the salt onto a 30 μg/cm^2 carbon backing. Detector: a wire-counter plastic-scintillator in the focal of an Enge split-pole spectrograph, FWHM=30 keV. Measured $\sigma(E_{^3He},\theta)$. Deduced levels, L from DWBA analysis.

1971Vi02: E=40 MeV protons produced from the Grenoble variable energy cyclotron with intensities of 20-200 nA depending on the scattering angle, 90 keV energy resolution. Targets: a gas target of natural purified chlorine, 100 mm in diameter and 25 mm in high. Detectors: two separate counter telescopes with each consisting of a 200μm phosphorous-drifted silicon ΔE detector, a 2 mm lithium-drifted silicon E detector and a 3 mm lithium-drifted silicon E-reject detector Typical energy resolution(FWHM): 180 keV for ^{3}He. Measured $\sigma(E(^3He),\theta)$. Deduced L for ground state of ^{35}S.

Target ^{37}Cl $J^\pi=3/2^+$.

^{35}S Levels

σ_{max}: From 1975Gu15.

E(level)[†]	L[‡]	Comments
0	0+2+4	σ_{max}=26.5 μb/sr.
1575 *10*	0+2	σ_{max}=19 μb/sr.
1992 *10*	3+5	σ_{max}=1.5 μb/sr.
2717 *10*	0+2+4	σ_{max}=53.9 μb/sr.
2938 *10*	0+2+4	σ_{max}=29.2 μb/sr.
3421 *10*	0+2+4	σ_{max}=81.5 μb/sr.
3598 *10*	2+4	σ_{max}=27.8 μb/sr.
3811 *10*	3	σ_{max}=2.6 μb/sr.
4027 *10*	2	σ_{max}=2.9 μb/sr.
4114 *10*	0+2	σ_{max}=8.8 μb/sr.
4186 *10*	(2,3)	σ_{max}=5.6 μb/sr.
4290 *10*	(2)	σ_{max}=2.8 μb/sr.
4489 *10*	2	σ_{max}=2.7 μb/sr.
4577 *10*	0+2	σ_{max}=10.7 μb/sr.
4617 *10*	(1,2)	σ_{max}=13.2 μb/sr.
4843 *10*	2	σ_{max}=15.9 μb/sr.
4963 *10*	(0+2)	σ_{max}=17.3 μb/sr.
4990 *10*	0+2	σ_{max}=19.5 μb/sr.
5127 *10*	2	σ_{max}=3.5 μb/sr.
5345 *10*	3	σ_{max}=2.2 μb/sr.
5550 *10*	(3)	σ_{max}=6.2 μb/sr.
5771 *10*	2	σ_{max}=10.1 μb/sr.
5915? *10*	(2,3)	σ_{max}=3.4 μb/sr.
6129 *10*	0+2	σ_{max}=7.8 μb/sr.
6347 *10*	(2)	σ_{max}=4.8 μb/sr.
6654 *10*	(3)	σ_{max}=7.7 μb/sr.
6696 *10*	2	σ_{max}=6.7 μb/sr.
7151? *10*	(4)	σ_{max}=3.3 μb/sr.
7375? *10*		
7712? *10*	4	σ_{max}=4.6 μb/sr.
7770 *10*		σ_{max}=5.5 μb/sr.
8103 *10*	(1+3)	σ_{max}=10.6 μb/sr.
8160 *10*	(1)	σ_{max}=8.4 μb/sr.
8430 *10*	2	σ_{max}=5.7 μb/sr.
9155 *10*	2	σ_{max}=10 μb/sr.

Continued on next page (footnotes at end of table)

^{37}Cl(p,^{3}He) 1975Gu15 (continued)

^{35}S Levels (continued)

† From 1975Gu15.
‡ Extracted from the comparison of $\sigma(\theta)$ distributions with the DWBA predictions.