^{33}S(^{3}He,α) 1979Cr02

Type	Author	History Citation	Literature Cutoff Date
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Target J^{π}(^{33}S g.s.)=3/2^{+}.

1979Cr02: E=15 MeV ^{3}He beam was produced at University of Pennsylvania. Target was CdS (enriched to 80% in ^{33}S) with a thickness of about 110 μg/cm^{2} on a 5 μg/cm^{2} Formvar backing. Reaction products were momentum-analyzed with a multiangle spectrograph (FWHM=35 keV) and detected in nuclear emulsion plates. Measured σ(E$_{\alpha}$,θ), θ_{cm}=0° to 70°. Deduced levels, J, π, L-transfers and spectroscopic factors from DWBA analysis.

1975In03: E=10.4 MeV ^{3}He beam was from the 5.5-MV Van de Graaff accelerator of the Laboratori Nazionali di Legnaro. Target was PbS (24.54% enriched in ^{33}S) on a thin carbon backing. Reaction products were detected with surface barrier detectors (FWHM=60 keV). Measured σ(E$_{\alpha}$,θ), θ=18° to 93°. Deduced levels, J, π, L-transfers and spectroscopic factors from DWBA analysis.

^{32}S Levels

Spectroscopic factor as given under comments is obtained from $\sigma_{exp}(\theta)$=N×C^{2}×S×$\sigma_{DWBA}(\theta)$/(2j+1), where N=10 and j the total transferred angular momentum (1979Cr02).

E(level)[†]	L[‡]	S[‡]	Comments
0	2	0.80	L: also from 1975In03. S: for 1d$_{3/2}$ orbit.
2232 *5*	0+2	0.48,0.07	S: for 2s $_{1/2}$ and 1d$_{5/2}$ orbits. L: also from 1975In03.
3781 *3*	2	0.16	S: for 1d$_{3/2}$ orbit. L: also from 1975In03.
4284 *3*	2	0.27	S: for 1d$_{5/2}$ orbit.
4462 *3*	2	0.36	S: for 1d$_{5/2}$ orbit.
4698 *3*	0+2	0.18,0.08	S: for 2s $_{1/2}$ and 1d$_{3/2}$ orbits.
5010 *5*	(3)	0.015	L,S: for 1f$_{7/2}$ orbit; poor DWBA fit.
5409 *4*	2	0.25	S: for 1d$_{5/2}$ orbit.
5547 *3*	0+2	0.03,0.19	S: for 2s $_{1/2}$ and 1d$_{3/2}$ orbits.
5796 *3*	1+3	0.004,0.01	S: for 2p $_{3/2}$ and 1f$_{5/2}$ orbits.
6226 *7*	3	0.016	S: for 1f$_{7/2}$ orbit.
6407 *5*	2	0.18	E(level): contaminated by ^{31}S g.s. (1979Cr02). S: for 1d$_{5/2}$ orbit.
6612 *7*	3	0.025	S: for 1f$_{7/2}$ orbit.
6669 *4*	0+2	0.03,0.07	S: for 2s $_{1/2}$ and 1d$_{5/2}$ orbits.
6761 *4*	3,(2)	0.03	S: for 1f$_{7/2}$ orbit.
6845 *12*			L: neither 2 nor 3 fits $\sigma(\theta)$ (1979Cr02).
6997 *4*	0+2	0.56,0.19	S: for 2s $_{1/2}$ and 1d$_{3/2}$ orbits.
7108 *7*	0+2	0.63,0.14	S: for 2s $_{1/2}$ and 1d$_{5/2}$ orbits.
7192 *6*	2	0.048	S: for 1d$_{5/2}$ orbit.
7335 *7*	2	0.15	S: for 1d$_{5/2}$ orbit.
7416 *11*	(1)	0.007	S: for 2p$_{3/2}$ orbit; limited $\sigma(\theta)$ data (1979Cr02).
7481 *10*	2	0.08	S: for 1d$_{5/2}$ orbit; limited $\sigma(\theta)$ data (1979Cr02).
7538 *5*	(2)	0.29	S: for 1d$_{3/2}$ orbit; limited $\sigma(\theta)$ data (1979Cr02).
7648 *5*			E(level): this peak contaminated by contribution from a state in ^{31}S (1979Cr02). L,S: 0.19 for 1d$_{5/2}$ orbit and 0.06 for 2s$_{1/2}$ for unresolved 7640+7700 including contribution from a ^{31}S level, with L=2 component from the latter and L=0 for one of 7640 and 7700 levels in ^{32}S; limited $\sigma(\theta)$ data (1979Cr02).
7962 *17*	(2)	0.05	L,S: for 1d$_{/2}$; $\sigma(\theta)$ data is limited (1979Cr02).

Continued on next page (footnotes at end of table)

^{33}S(^{3}He,α) 1979Cr02 (continued)

^{32}S Levels (continued)

† From 1979Cr02.
‡ From DWBA analysis of measured $\sigma(\theta)$ (1979Cr02).