^{34}S(pol d,^{3}He) 1988Kh04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 199,1 (2025)	30-Sep-2024

$J^{\pi}=0^{+}$ for ^{34}S target.

1988Kh04: E=52 MeV polarized deuteron beam was produced from the Karlsruhe isochronous cyclotron. Target was H_2S gas (89.8% enriched in ^{34}S). Reaction products were detected with 4 ΔE-E telescopes of surface-barrier counters (FWHM=160 keV). Measured ^{3}He spectra, $\sigma(\theta)$, analyzing powers ($iT_{11}(\theta)$) from 10° to 30° (c.m.). Deduced levels, J, π, L-transfers, spectroscopic factors from DWBA analysis of angular distribution and vector analyzing power data. Comparisons with available data.

^{33}P Levels

Spectroscopic factor is defined as $C^2S=(1.0/N)\times\sigma(\theta)^{exp}/\sigma(\theta)^{DWBA}$, where N is a normalization factor depending on the interaction between the reacting particles.

E(level)[†]	J^{π}	L[‡]	C^2S[‡]	Comments
0	$1/2^{+}$	0	1.36	E(level): 0 *4*. L: $2s_{1/2}$ proton transfer.
1435 *6*	$3/2^{+}$[#]	2	0.73[#]	
1843 *4*	$5/2^{+}$[@]	2	1.26	
3250 *20*	$3/2^{+}$[#]	2	0.15[#]	
3480 *12*	$5/2^{+}$[@]	2	0.36	
4050 *4*	$5/2^{+}$[@]	2	1.48	
5050 *4*	$5/2^{+}$[@]	2	1.91	
5650 *6*		[2+0]	0.12,0.06[@]	
5956 *12*		[2+0]	0.28,0.16[@]	
6449 *26*		2	0.42[a]	J^{π}: $5/2^{+}$ given by 1988Kh04 as from this work but no angular distribution or analyzing power plot shown by the authors to support this assignment.
6820 *60*	$5/2^{+}$[@]	2	0.42	
7146 *12*	$5/2^{+}$[@]	2	0.60	
7564 *34*		[1]	<0.40[&]	C^2S: <0.40 for assumed L=1, $1p_{1/2}$.
8510 *24*		[1]	<0.50[&]	C^2S: <0.50 for assumed L=1, $1p_{1/2}$.

[†] Deduced by 1988Kh04 from analysis of 18 different spectra.
[‡] From DWBA analysis of measured $\sigma(\theta)$ (1988Kh04).
[#] L-1/2 from analyzing power measurement.
[@] L+1/2 from analyzing power measurement.
[&] $1p_{1/2}$ proton transfer assumed in DWBA calculations.
[a] $1d_{5/2}$ proton transfer assumed in DWBA calculations.