^{36}S(d,^{3}He),(pol d,^{3}He) 1984Th08,1985Kh04

History

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

1984Th08: E=30 MeV deuteron beam produced from the BNL Double MP tandem facility. Targets: 20.1 and 23 μg/cm^2 ^{34}S in Ag_2S. Detectors: a multiwire proportional counter backed by a topping plastic scintillator (FWHM=32 keV). Measured ^{3}He spectra, $\sigma(\theta)$. Deduced levels, L, J^π from the DWBA analysis of the angular distributions for the levels of 0, 3864, 4664 and 5202 keV.

1985Kh04: E=52 MeV unpolarized and vector-polarized deuteron beam of 100 nA produced from the Karlsruhe cyclotron on a 1 mg/cm^2 ^{208}Pb sulfide target with 81.1% enriched ^{36}S on ^{12}C backing. Two ΔE-E surface barrier detector telescopes (300 μm, 1500μm) for detecting ^{3}He, FWHM=90 keV. Measured σ(E(^{3}He),θ), $iT_{11}(\theta)$. Deduced mass excess, levels, J^π, spectroscopic factors for levels of 0, 2386, 3857, 4474, 4665, 5189 and 7520 keV.

^{35}P Levels

E(level)[†]	J^π[#]	L[c]	C^2S[†bc]	Comments
0	$1/2^+$	0	1.63	C^2S: 2.3 *12* in 1984Th08.
2386 *6*	$3/2^+$[@]	2	0.31[@]	
3857[‡] *2*	$5/2^+$[&]	2	2.91[&]	C^2S: 1.10 *55* in 1984Th08. Additional information 1.
4474 *21*			<0.2[a]	
4665[‡] *3*	$5/2^+$[&]	2	1.06[&]	C^2S: 0.41 *21* in 1984Th08. Additional information 2.
5197[‡] *10*	$5/2^+$[&]	2	1.38[&]	C^2S: 0.30 *15* in 1984Th08. Additional information 3.
7520 *30*			<0.4[a]	

[†] From 1985Kh04, unless otherwise noted.
[‡] Weighted average from 1984Th08 and 1985Kh04.
[#] L+1/2 or L-1/2 choice from vector analyzing powers. $J^\pi=0^+$ for ^{36}S target.
[@] L-1/2 from analyzing power measurement; $1d_{3/2}$ proton transfer assumed in DWBA calculations.
[&] L+1/2 from analyzing power measurement; $1d_{5/2}$ proton transfer assumed in DWBA calculations.
[a] $1d_{5/2}$ proton transfer assumed in DWBA calculations.
[b] $C^2S=N*\sigma(\theta)^{exp}/\sigma(\theta)^{DWBA}$, where the N is a normalization factor depending on the interaction between the reacting particles.
[c] From DWBA analysis in 1984Th08 and 1985Kh04.