$^{36}\text{Ar}(\text{pol d},^{3}\text{He})$ **1993Ma50**

History

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

1993Ma50: E=52 MeV polarized deuteron beam of 15 nA produced from the Karlsruhe isochronous cyclotron at the Max-Plank-Institut fur Kernphysik. A isotropically enriched (99.86%) ^{36}Ar gas target. A detector telescope consisting of a 250 μm ΔE-strip detector and a 1.5 mm E-surface-barrier counter for detecting ^{3}He particles, FWHM=130 keV. Measured $\sigma(E_{3He}, \theta)$, analyzing power $iT_{11}(\theta)$. Deduced levels, J^{π}, L, spectroscopic factors from DWBA analysis.

^{35}Cl Levels

Target ^{36}Ar $J^{\pi}=0^{+}$.
Spectroscopic factor $C^{2}S$: $N*C^{2}S=\sigma(\theta)^{\text{exp}}/\sigma(\theta)^{\text{DWBA}}$, where N is the normalization factor (1966Ba54), N=2.95 (1993Ma50).

E(level)	$J^{\pi\ddagger}$	$L^{\dagger}$	$C^{2}S$	Comments
0	$3/2^{+\#}$	2	$1.72^{\#}$	
1213 *4*	$1/2^{+}$ @	0	0.78 @	
1785 *50*	$(5/2^{+})$		0.04	
2676 *7*	$(3/2^{+})$		0.16	
3002 *6*	$5/2^{+}$ @	2	1.32 @	
3159 *20*	$7/2^{-}$ @	3	0.19 @	
3948 *40*	$(1/2^{+},3/2^{+})$		0.08	E(level): unresolved doublet (3918,3968) (1993Ma50).
				$C^{2}S$: for $J^{\pi}=1/2^{+}$; 0.03 for $J^{\pi}=3/2^{+}$ (1993Ma50).
4839 *12*	$(5/2^{+})$		0.08	$C^{2}S$: for $J^{\pi}=5/2^{+}$; 0.03 for $J^{\pi}=1/2^{+}$ (1993Ma50).
5155 *11*	$(5/2^{+},7/2^{-})$ @		0.12 @	$C^{2}S$: for $J^{\pi}=5/2^{+}$ (1993Ma50).
5583 *13*	$5/2^{+}$ @	2	0.38 @	
5720 *11*	$5/2^{+}$ @	2	1.10 @	
6136 *8*	$5/2^{+}$ @	2	0.63 @	
6745 *12*	$(1/2,5/2)^{+}$		0.09	$C^{2}S$: for $J^{\pi}=1/2^{+}$; 0.28 for $J^{\pi}=5/2^{+}$ (1993Ma50).
6953 *43*	$5/2^{+}$ @	2	0.49 @	
7181 *60*	$5/2^{+}$ @	2	0.20 @	
7565 *20*	$5/2^{+}$ @	2	0.30 @	
8007 *36*	$(1/2^{-},5/2^{+})$		0.16	$C^{2}S$: for $J^{\pi}=1/2^{-}$; 0.20 for $J^{\pi}=5/2^{+}$ (1993Ma50).
8204 *34*	$5/2^{+}$ @	2	0.14 @	
8580 *20*	$5/2^{+}$ @	2	0.22 @	
8921 *70*	$5/2^{+}$ @	2	0.18 @	
9.22×10^{3} *12*	$5/2^{+}$ @	2	0.12 @	
9514 *20*	$(1/2^{-},5/2^{+})$		0.18	$C^{2}S$: for $J^{\pi}=1/2^{-}$; 0.30 for $J^{\pi}=5/2^{+}$ (1993Ma50).
9.82×10^{3} *12*	$(1/2^{-},5/2^{+})$		0.10	$C^{2}S$: for $J^{\pi}=1/2^{-}$; 0.26 for $J^{\pi}=5/2^{+}$ (1993Ma50).

† From the comparison of the DWBA prediction of the angular distribution with the experimental data.
‡ L+1/2 or L-1/2 choice from vector analyzing powers.
$^{\#}$ L-1/2 from analyzing power measurement; $1d_{3/2}$ neutron transfer assumed in DWBA calculations.
$^{@}$ L+1/2 from analyzing power measurement; $1d_{5/2}$ neutron transfer assumed in DWBA calculations.