

$^{36}\text{Ar}(^3\text{He},\alpha)$ 1973Be26

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

1973Be26: E=18 MeV ^3He beam produced from the University of Pennsylvania tandem Van de Graaff accelerator. A target of pure argon gas enriched to 99.8% in ^{36}Ar . Reaction α -particles detected in Ilford K-1 nuclear emulsions after being momentum-analyzed in a multi-angle spectrograph. Measured $\sigma(E_\alpha, \theta)$. Deduced levels, J^π , L, spectroscopic factors from the DWBA analysis.

 ^{35}Ar Levels

Target ^{36}Ar $J^\pi=0^+$.

Spectroscopic factor C^2S : $N \cdot C^2S / (2 \cdot j + 1) = \sigma(\theta)^{\text{exp}} / \sigma(\theta)^{\text{DWBA}}$, where j is the total angular momentum of transferred nucleon, $C^2=1/2$ for this reaction and $N=16.8$ deduced in **1973Be26**.

E(level) [†]	L [#]	C ² S	E(level) [†]	L [#]	C ² S	E(level) [†]	L [#]	C ² S
0	2	2.545	4721 10	0	0.05	6631 [‡] 10	0	0.36
1179 10	0	1.19	4782 10			6827 10		
1738 10	2	0.025	5048 10			6959 10		
2637 10	2	0.57	5116 10	2	0.25,0.145	7055 10		
2982 10	2	1.39	5205 10			7117 10		
3193 10	3	0.39	5387 10			7293 10		
3884 10	0	0.02	5484 10	2	0.77,0.445	7423 10		
4012 10	1	0.065	5591 10	2	1.98,1.14	7502 10		
4110 10			5911 10			7840 10		
4142 10	1	0.025	6033 10	2	1.3,0.755	8019 10		
4350 10			6153 10					
4530 10			6258 10					

[†] From **1973Be26**.

[‡] Probable doublet (**1973Be26**).

[#] From the comparison of the DWBA predictions with experimental data.