
 $^{36}\text{S}(\text{d}, ^3\text{He})$ [1984Th08](#)

$J^\pi=0^+$ for ^{36}S ground state.

[1984Th08](#): A 30-MeV deuteron beam was produced from the BNL Double MP tandem facility. Targets were 20.1 and 23.0 $\mu\text{g}/\text{cm}^2$ sulphur with ^{36}S enriched to 81.1%. Reaction products were momentum-analyzed with the BNL Q3D magnetic spectrometer (FWHM \approx 32 keV) and detected with a multi-wire proportional counter backed by a topping plastic scintillator. Measured $\sigma(E(^3\text{He}), \theta)$. Deduced levels, J, π , L-transfers, spectroscopic factors from the finite-range DWUCK4-DWBA analysis of the angular distributions.

 ^{35}P Levels

Spectroscopic factor $C^2S=(2j+1)\times\sigma(\theta)_{\text{exp}}/\sigma(\theta)_{\text{DWBA}}/N$, where j denotes the total angular momentum of the transferred nucleon.

N=29.5 is a normalization factor adopted by [1984Th08](#). The discrepancy from the original N=2.95 in [1966Ba54](#) likely arises from different units of cross sections.

$E(\text{level})^\dagger$	L^\ddagger	C^2S^\ddagger
0	0	2.3 12
3864 10	2	1.45, 1.10 [#]
4664 10	2	0.53, 0.41 [#]
5202 10	2	0.40, 0.30 [#]

[†] Deduced from measured ^3He spectra.

[‡] From DWBA analysis of measured $\sigma(\theta)$. The uncertainty of C^2S is estimated to be 50% by [1984Th08](#).

[#] Quoted values are for $j=L-1/2$ ($1d_{3/2}$) and $L+1/2$ ($1d_{5/2}$), respectively.