^{64}Zn(^{3}He,d)   **1967Be18**

| | | History | |
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 202,59 (2025)	25-Feb-2025

Target J^π(^{64}Zn g.s.)=0$^+$.

1967Be18: E=18 MeV ^{3}He beam was produced from the Heidelberg Tandem Van de Graaff accelerator. Target was enriched ^{64}Zn. Reaction products were momentum-analyzed with a single-gap magnetic spectrograph at forward angles and detected with a ΔE-E telescope at large angles. Measured $\sigma(\theta)$, $\theta_{cm}\approx0°$ to 110°. Deduced levels, J, π, L-transfers, spectroscopic factors from DWBA analysis.

1974Ze01: E=18 MeV ^{3}He beam was from the Argonne tandem. Reaction products were detected with a telescope consisting of Si surface barrier detectors (FWHM$\approx$120 keV). Measured $\sigma(\theta)$, θ_{cm}=15°−80°. Deduced levels, L-transfers, spectroscopic factor from DWBA analysis.

Other: 1971BeYP.

^{65}Ga Levels

Spectroscopic factor C^{2}S is obtained using the following relation: dσ/dΩ(exp)=N×(2J+1)/(2J0+1)×dσ/dW(DWBA), where N is the normalization factor, J0 and J the spins of initial and final levels in ^{64}Zn and ^{65}Ga, repsectively. 1967Be18 use N=4.4 but N is unknown from 1974Ze01.

E(level)[†]	L[‡]	(2J+1)C^{2}S[‡]	Comments
0	1	1.3	
62 *15*	1	1.0	
192 *15*	3	4.5	
655 *15*	1	0.58	
821 *15*	1	0.26	
1083 *15*	4	0.39	
1380	3	0.78	E(level): from 1974Ze01. Uncertainty not given but probably $\approx$60 keV. Level not reported in 1967Be18, but a level is reported in ^{64}Zn(d,n) at 1364 *15*.
			L: from DWBA analysis of $\sigma(\theta)$ (1974Ze01).
			(2J+1)C^{2}S: from 1974Ze01.
1670 *15*	1	0.16	
1867 *15*	1	0.10	
2034 *15*	4	4.5	
2206 *15*	3	0.65	
2819 *15*	2	0.16	
2922 *15*	2	0.59	

[†] From 1967Be18, unless otherwise noted.
[‡] From DWBA analysis of $\sigma(\theta)$ by 1967Be18, unless indicated otherwise.