

${}^9\text{Be}(\alpha,\alpha')$, ${}^9\text{Be}(\alpha,2\alpha)$ 1966La04

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, C. G. Sheu, J. L. Godwin, et al.		NP A745 155 (2004)	31-Mar-2004

- 1965Ta04: ${}^9\text{Be}(\alpha,\alpha)$ E=4-20 MeV, measured $\sigma(E,\theta)$.
 1969Ha14: ${}^9\text{Be}(\alpha,\alpha)$ E=104 MeV, measured $\sigma(\theta)$. Deduced phase shifts, optical potentials.
 1973Go15: ${}^9\text{Be}(\alpha,\alpha)$ E=1.7-6.2 MeV, measured $\sigma(E,E_\alpha,\theta)$.
 1974Ku15: ${}^9\text{Be}(\alpha,\alpha)$ E=26.6 MeV, measured $\sigma(\theta)$.
 1974Sa16: ${}^9\text{Be}(\alpha,\alpha)$ E=1.4-2.5 MeV, measured $\sigma(E,\theta)$.
 1978Hi06: ${}^9\text{Be}(\alpha,\alpha_0)$ E=6.4-6.5 MeV, measured $\sigma(E,\theta)$.
 1982Pe03: ${}^9\text{Be}(\alpha,\alpha)$, (α,α') E=35.5 MeV, measured $\sigma(\theta)$. ${}^9\text{Be}$ levels deduced deformation parameters.
 1994Li51: ${}^9\text{Be}(\alpha,\alpha)$ E=0.15-3 MeV, measured $\sigma(\theta)$, $\theta = 170$ degree.
 1995Ro21: ${}^9\text{Be}(\alpha,\alpha)$, (α,α') E=65 MeV, measured $\sigma(\theta)$. Deduced model parameters. ${}^9\text{Be}$ levels deduced deformation, quadrupole transition densities, N-, P-radii, matrix elements, B(λ).
 1969Do02: ${}^9\text{Be}(\alpha,2\alpha)$ E=25 MeV, measured $\sigma(E_{\alpha_1}, E_{\alpha_2}, \theta(1), \theta(2))$.
 1969Pi11: ${}^9\text{Be}(\alpha,2\alpha)$ E=55 MeV, measured $\sigma(E_{\alpha_1}, E_{\alpha_2}, \theta(1), \theta(2))$.
 1971Gu15: ${}^9\text{Be}(\alpha,2\alpha)$ E=42.8, 49.2 MeV, measured $\sigma(E_\alpha, \theta(\alpha))$.
 1980Wa07: ${}^9\text{Be}(\alpha,2\alpha)$ E=140 MeV, measured $\sigma(E_{\alpha_1}, E_{\alpha_2}, \theta-\alpha_1, \theta-\alpha_2)$. DWIA analysis.
 1983Zh09: ${}^9\text{Be}(\alpha,2\alpha)$ E=18 MeV, measured $\sigma(\theta_1, \theta_2, E_1)$. ${}^9\text{Be}$ deduced α -particle momentum distribution width, clustering probability.
 1994Co16: ${}^9\text{Be}(\alpha,2\alpha)$ E=197 MeV, measured $\sigma(\theta_1, \theta_2)$. ${}^9\text{Be}$ deduced spectroscopic factors. DWIA analysis.
 1999Na05: ${}^9\text{Be}(\alpha,2\alpha)$ E=580 MeV, measured $\sigma(\theta(1), \theta(2), E)$. Deduced dominance quasifree knockout mechanism. DWIA calculations.

 ${}^9\text{Be}$ Levels

E(level)	J^π	$T_{1/2}$	L	Comments
0.0				
1.68×10^3	$1/2^+$			J^π from (1964Lu02).
2.43×10^3	$(1/2, 5/2, 7/2)^-$		2	J^π from (1958Su14). $\beta_2=0.34$ I (1964Gr39), other value $\beta_2=0.46$ (1959B131). decay is mainly via ${}^4\text{He}$ emission; %IT<1 and %n to ${}^8\text{Be}(0)$ <10 (see 1966La04).
3.04×10^3		300 keV	50	E(level): Γ : from (1964Lu02).
4.70×10^3				from (1982Pe03).
6.76×10^3				
11.28×10^3	$(9/2^-)$			J^π from (1982Pe03).