^{10}B(^{3}He,α):res

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, C. G. Sheu and J. E. Purcell	NDS 198,1 (2024)	1-Aug-2024

1963Ea03: ^{10}B(^{3}He,α) E(^{3}He)=3-10.5 MeV; measured excitation function.
1965Pa05: ^{10}B(^{3}He,$\alpha_{0,1}$) E(^{3}He)=2-10 MeV; measured $\sigma(\theta=30°, 90°, 150°)$, focused on broad E_{res}=5.8 MeV group in α_0.
1970Gi04: ^{10}B(^{3}He,α) E(^{3}He)=1-10 MeV. Analysis included measurements on ^{12}C(pol. p,p). Measured $\sigma(E,\theta)$; Legendre polynomial analysis; deduced resonances at E_{res}=3, 5.8, and 8 MeV with Γ= 0.75 *25*, 1.35 *15* and 2.25 *25* MeV and $J^{\pi}=7/2^{-}$, $7/2^{-}$ and $9/2^{+}$, respectively.
1972Be56: ^{10}B(^{3}He,n), (^{3}He,p), (^{3}He,d), (^{3}He,α) E=11-19 MeV; measured $\sigma(E,E_n)$, $\sigma(E,E_p,\theta)$, $\sigma(E,E_d,\theta)$, for θ=90° and 150° and $\sigma(E,E_{\alpha},\theta)$ for θ=30° to 150°. Analyzed existing data and deduced resonances at E_{res}=5.6, 8.5, 13.5 MeV.

See also:
1955Al57: ^{10}B(^{3}He,α) E=900 keV; measured E_{α}. First author is Bigham; details are given in (1959Al96).
1968Kr02: ^{10}B(^{3}He,α) E=2.49, 3.24, 3.74 MeV; measured $\sigma(E_{\alpha},\theta)$ for θ=30° to 140°.
1971Sq03: ^{10}B(^{3}He,α) E=33.7 MeV; measured $\sigma(E_{\alpha},\theta)$ for θ=10° to 120°.
1986Ar14, 1988Ar05: ^{10}B(^{3}He,α) E=2.3, 5 MeV; measured $\alpha\alpha$-coin, $\sigma(\theta_{\alpha1},\theta_{\alpha2})$.

^{13}N Levels

E(level)	J^{π}	Γ	$E_{^3He}$(res) (MeV)	Comments
24×10^3	$7/2^{-}$	0.75 MeV *25*	3	$E_{^3He}$(res) (MeV),J^{π},Γ: From R-matrix analysis in (1970Gi04). Γ from Γ=0.5-1.0 MeV.
26.1×10^3	$7/2^{-}$	1.35 MeV *15*	5.8	$E_{^3He}$(res) (MeV): From (1965Pa05, 1970Gi04). J^{π},Γ: From R-matrix analysis in (1970Gi04). Γ from 1.2-1.5 MeV. Γ: Broad (1965Pa05). See also (1972Be56) where $E_{^3He}$(res)=5.6 is reported for α_0.
28×10^3	$9/2^{+}$	2.25 MeV *25*	8	$E_{^3He}$(res) (MeV),J^{π},Γ: From R-matrix analysis in (1970Gi04). Γ from 2.0-2.5 MeV. See also (1972Be56) where $E_{^3He}$(res)=8.5 is reported for α_0.
32×10^3		≈2 MeV	13.5	$E_{^3He}$(res) (MeV): From (1972Be56) for α_1.