^{9}Be(^{16}O,^{17}O),^{16}O(^{9}Be,^{17}O) 1977St20

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. G. Sheu, J. H. Kelley, J. Purcell	ENSDF	5-Aug-2021

1969BaZN: ^{9}Be(^{16}O,^{17}O),^{13}C(^{16}O,^{17}O), E=15-20 MeV; measured $\sigma(\theta)$.
1969Ni09: ^{9}Be(^{16}O,^{17}O), E=15 MeV; measured Doppler-shift attenuation, plunger method. ^{17}O deduced $T_{1/2}$ (level). Enriched targets.
1970Ba49: ^{9}Be(^{16}O,^{17}O), E=11,15,18 MeV; ^{13}C(^{16}O,^{17}O), E=14,17,20 MeV; measured $\sigma(\theta)$. ^{17}O deduced neutron S.
1970Ba55: ^{9}Be(^{16}O,^{17}O), E=7-21 MeV; ^{13}C(^{16}O,^{17}O), E=12-22 MeV; measured σ(E; E_γ). ^{17}O level deduced S.
1971Ba68: ^{9}Be(^{16}O,^{17}O), E=11,15,19,7-13 MeV; ^{13}C(^{16}O,^{17}O), E=12-16,17,20 MeV; measured σ(E); deduced S(n) products.
1971Ni04: ^{9}Be(^{16}O,^{17}O), E=6-19 MeV; measured σ(E; E_γ).
1977St20: ^{16}O(^{9}Be,^{8}Be), E=50 MeV; measured $\sigma(\theta)$. ^{17}O levels deduced relative, absolute S.
1977Sw05: ^{16}O(^{9}Be,^{8}Be), E=5-14.5 MeV; measured γ-yields; deduced n-transfer, fusion σ(E). Optical model, incoming wave analysis. Ge(Li) detector sub-barrier energies.
1979Ch12: ^{9}Be(^{16}O,^{17}O), E=9-12,12.25-20 MeV; measured E_γ, I_γ, particle γ-coin, $\gamma\gamma$-coin. ^{17}O deduced γ-transitions, production σ.
1988Ja14: ^{16}O(^{9}Be,^{8}Be), E(cm)=10.3, 12.8 MeV; measured $\sigma(\theta)$. Deduced reaction mechanism, cluster transfer estimates.
1988We17: ^{9}Be(^{16}O,^{17}O), E(cm)=7.2,8.4,9,9.6,10.2 MeV; measured $\sigma(\theta)$, low-lying states; deduced molecular effects existence. Second-order exact finite-range DWBA calculations.
2004ScZX: ^{9}Be(^{16}O,^{17}O), E=2.3 MeV/nucleon; measured σ(E,θ). Comparison with DWBA predictions.

Theory:
1973Ba51: ^{9}Be(^{16}O,^{17}O); calculated $\sigma(\theta)$.
1986Kw03: ^{9}Be(^{16}O,^{17}O), E not given; analyzed transfer reaction data; deduced intermediate nuclear state quantum number in α-transfer. A=9-15; calculated levels, α-spectroscopic amplitudes; deduced α-particle transfer sum rule. Core plus α-particle model.

^{17}O Levels

Notes: Most experiments here populated ^{17}O*(0,871) states.
Γ: From (1969Ni09).

E(level)[†]	J^π[†]	τ_m	S[‡]	Comments
0	$5/2^+$		0.76	
870	$1/2^+$	253 ps *6*	0.89	The Q(β^-)value for neutron transfer to this state is 1.61 MeV (1977Sw05).
3840	$5/2^-$			E(level): weakly populated.
5080	$3/2^+$			
5700	$7/2^-$			
7600	$3/2^-$			

[†] Populated in (1977St20) from known levels (1977Aj02).
[‡] Neutron S-factors (1970Ba49).

$\gamma(^{17}O)$

E_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
870	870	$1/2^+$	0	$5/2^+$	E2	E_γ: (1977Sw05,1979Ch12). B(E2)(W.u.)=2.4 (1969Ni09). See also (1979Ch12).

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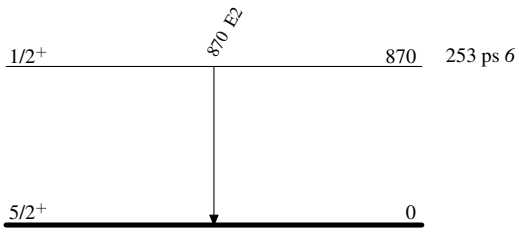
Level Scheme



$^{17}_{8}O_9$