^{12}C(^{9}Be,^{8}Be)

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

1970Ba49: ^{9}Be(^{12}C,^{13}C) E=12,15 MeV; measured $\sigma(\theta)$ for $\theta_{c.m.}\approx70°$ to 150°. Deduced neutron S.
1977St20: ^{12}C(^{9}Be,^{8}Be) E=50 MeV; measured $\sigma(\theta)$. ^{13}C levels.
1978MaZR,1978Ma44: ^{9}Be(^{12}C,^{8}Be) $E_{c.m.}$=10-15 MeV; measured $\sigma(\theta)$ for θ=13° to 75°.
1979Bo06: ^{9}Be(^{12}C,^{8}Be) $E_{c.m.}$=11.4-14.8 MeV; measured excitation curves, $\sigma(\theta(^{8}Be))$ for $\theta\approx11°$ to 165°. DWBA analysis, n-, α-transfer, compound nucleus formation.
1979Ja05: ^{12}C(^{9}Be,^{8}Be) E=20 MeV; measured $\sigma(\theta)$ for $\theta_{c.m.}\approx10°$ to 140°. Deduced S for n-, α-transfer. Finite range DWBA.
1981Hu12: ^{9}Be(^{12}C,^{8}Be) $E_{c.m.}$=6-15 MeV; measured $\sigma(\theta$,E); deduced deviation function confidence limits.
1982Hu06: ^{12}C(^{9}Be,^{8}Be) $E_{c.m.}$=5.9-15.4 MeV; measured σ(E) for θ=7.5° and 27.5°.
1982Ta21: ^{9}Be(^{12}C,^{8}Be) $E_{c.m.}\approx$4-7 MeV; measured $\sigma(\theta)$ vs E; deduced sub-Coulomb molecular resonances.

Theory:
1981La15: ^{9}Be(^{12}C,^{8}Be) $E_{c.m.}$=6-15 MeV; calculated σ(E); deduced resonance structure. Statistical model, energy-dependent deviation function.
1983DeZW: ^{9}Be(^{12}C,^{8}Be), E not given; calculated production σ; deduced reaction mechanism. Statistical model.
1983Ka17: ^{12}C(^{9}Be,^{8}Be) E=20-45 MeV; analyzed $\sigma(\theta)$; deduced higher order processes role. Optical model, DWBA, potential scattering, direct interaction interference, incoherent compound nucleus contribution.

^{13}C Levels

E(level)	J^{π}[†]	S[†]	Comments
0	$1/2^{-}$	1.15	E(level),J^{π}: listed in (1977St20, 1982Hu06). See also (1970Ba49, 1978Ma44, 1979Bo06, 1979Ja05, 1982Ta21). S: See also S=0.80 (1970Ba49).
3086	$1/2^{+}$	0.95	E(level),J^{π}: listed in (1977St20, 1982Hu06). See also (1970Ba49, 1979Bo06, 1979Ja05). S: See also S=1.02 (1970Ba49).
3680	$3/2^{-}$	0.20	E(level),J^{π}: listed in (unresolved: 1982Hu06, 1978Ma44). See also (1979Bo06, 1979Ja05).
3850	$5/2^{+}$	1.02	E(level),J^{π}: listed in (1977St20, 1982Hu06:unresolved). See also (1970Ba49, 1978Ma44:unresolved, 1979Bo06, 1979Ja05). S: See also S=0.89 (1970Ba49).
6860	$5/2^{+}$		E(level),J^{π}: From (1977St20,1978Ma44: 6.87 MeV).
7500[‡]			E(level): From (1977St20). See also (1978Ma44: cluster of states near 7.55 MeV).
8200	$3/2^{+}$		E(level),J^{π}: From (1977St20).
9500[‡]			E(level): From (1977St20).
10800[‡]			E(level): From (1977St20).

[†] From DWBA analysis of spectroscopic factors in (1979Ja05), except where noted.
[‡] Some states are not associated with Adopted Levels because inadequate details for association are given in the literature.