^{9}Be(^{9}Be,^{13}Cγ)

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

1986Cu02: ^{9}Be(^{9}Be,^{13}Cγ) E(cm)≈1.25-3 MeV; measured E_γ, I_γ, γ, residual production σ(E). α-transfer, statistical model analysis of ^{18}O excitation and decay, DWBA analyses. Enriched targets, Ge detectors.

1988La25: ^{9}Be(^{9}Be,^{13}Cγ) $E_{c.m.}$=1.4-3.4 MeV; measured elastic $\sigma(\theta)$, total reaction σ(E), σ(E,E(γ)) for transitions in ^{13}C. Optical model, statistical model and DWBA analysis. NaI and Ge detectors.

1993Da17: ^{9}Be(^{9}Be,^{13}Cγ) E=4.5-12.4 MeV; measured σ(E) for γ transitions in ^{13}C. Statistical model analysis of ^{18}O excitation and decay. Similar analyses for ^{14}C+α and ^{7}Li+^{11}B.

1997Mu04: ^{9}Be(^{9}Be,^{13}Cγ) $E_{c.m.}$=1.3-7.6 MeV; measured γ production σ vs E; deduced partial, total fusion σ. Statistical model analysis, optical model calculations.

2011Gi03: ^{9}Be(^{9}Be,^{13}Cγ) E=30,35,40 MeV; measured reaction products, E_γ, I_γ; deduced production yields. Comparison with PACE, LisFus and GEMINI calculations.

^{13}C Levels

E(level)[†]	J^π[†]	$T_{1/2}$	L_α[‡]	Comments
0	$1/2^-$			J^π: See (1997Mu04).
3090	$1/2^+$	0.69 fs	1	E(level): See (1986Cu02,1988La25,1993Da17,1997Mu04). J^π: See (1986Cu02,1988La25,1997Mu04). $T_{1/2}$: From τ=0.001 ps (1988La25).
3680	$3/2^-$	0.69 fs	0	E(level): See (1986Cu02,1988La25,1993Da17,1997Mu04). J^π: See (1986Cu02,1988La25). $T_{1/2}$: From τ=0.001 ps (1988La25).
3850	$5/2^+$	8.32 ps	1,3	E(level): See (1986Cu02,1988La25,1993Da17,1997Mu04). J^π: See (1986Cu02,1988La25,1997Mu04). $T_{1/2}$: From τ=12 ps (1988La25).

[†] Values based on Adopted Levels.
[‡] From (1986Cu02).

γ(^{13}C)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Comments
3090	$1/2^+$	3090	100	0	$1/2^-$	E_γ: See (1986Cu02,1988La25,1993Da17,1997Mu04). I_γ: From (1988La25,1997Mu04).
3680	$3/2^-$	3680	98.4	0	$1/2^-$	E_γ: See (1986Cu02,1988La25,1993Da17,1997Mu04). I_γ: From (1988La25), see also 99% (1997Mu04).
3850	$5/2^+$	168	33	3680	$3/2^-$	E_γ: (2011Gi03). I_γ: (1997Mu04), see also 37% (1986Cu02).
		760	10	3090	$1/2^+$	E_γ,I_γ: (1997Mu04).
		3850	57	0	$1/2^-$	E_γ: See (1986Cu02,1988La25,1993Da17,1997Mu04). I_γ: (1997Mu04), see also 63% (1986Cu02: 3850→3090 not observed), 63.4% (1988La25).

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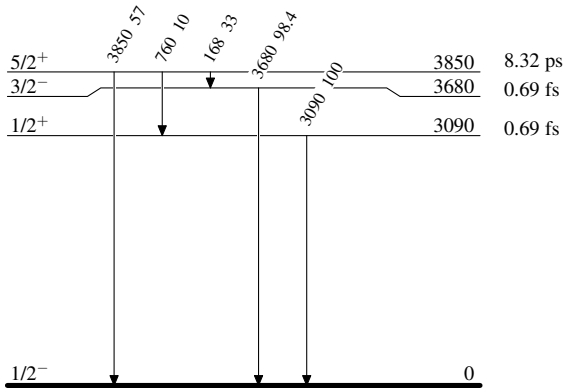
Level Scheme

Intensities: % photon branching from each level



$^{13}_{6}C_{7}$