^{9}**Be(γ,n),(γ,α),(γ,2α)**   **2004Ti06**

History

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

1964Be30: ^{9}Be(γ,n)2α, E$_\gamma$=18-33.5 MeV, measured σ, α_1+α_2 spectrum. ^{9}Be deduced levels, J, π.

1965Ko08: ^{9}Be(γ,n)^{8}Be, E≤35 MeV, measured σ(E,E$_\alpha$,θ_α), σ_γ. ^{9}Be deduced charge-distribution radius.

1966Th03: ^{9}Be(γ,n) E=3-17 MeV, measured E$_N$. ^{9}Be deduced levels.

1973An29: ^{9}Be(γ,n) E(max)=1.6-15.5 MeV, measured σ(E). ^{9}Be deduced levels, Γ.

1973Ve12: ^{9}Be(γ,n) E<3 MeV, analyzed σ(E).

1975Sc05: ^{9}Be(γ,n) E=60 MeV, measured σ(E$_N$).

1977Bu02: ^{9}Be(γ,n) E=18-26 MeV, measured σ(E,θ).

1978Bu01: ^{9}Be(γ,n) E=18-26 MeV, measured integral σ(E) for combined reactions.

1981Ga27: ^{9}Be(γ,n) E not given, measured σ(effective).

1981Re02: ^{9}Be(γ,n) E=2.754 MeV, measured σ(E$_N$).

1982Fu11: ^{9}Be(γ,n) E=1674.7-2167.6 keV, measured σ(E).

1989Va18: ^{9}Be(γ,n) E≤7 MeV bremsstrahlung, measured σ(θ) vs E.

1992Go27: ^{9}Be(γ,n) E=threshold−20 MeV bremsstrahlung, measured photoneutron production σ(E). ^{9}Be levels deduced Γ, Γ_γ.

2000Ba21: ^{9}Be(γ,n) E=1.6-2.2 MeV, analyzed σ. Deduced parameters.

2001Sc12: ^{9}Be(γ,n) E not given, measured neutron yield. Deduced photon spectrum features.

2001Ut01: ^{9}Be(γ,n) E=1.78-6.11 MeV, measured photoneutron σ(E). Deduced N α-α reaction rate. ^{9}Be deduced resonance widths, energies, B(E1).

2001Ut03: ^{9}Be(γ,n) E=1.5-6 MeV, measured E$_N$, E$_\gamma$, σ. Deduced reaction rate for ^{4}He(αn,γ) reaction.

2002Su19: ^{9}Be(γ,n) E≈1.5-4.5 MeV, measured σ. Deduced resonance parameters, astrophysical reaction rate for α(α,nγ).

2003Ut02: ^{9}Be(γ,n) E≈1.5-4.5 MeV, measured photoneutron σ. ^{9}Be deduced resonance parameters.

1968Ad09: ^{9}Be(γ,α) E<28 MeV, measured σ(E,E$_\alpha$). ^{9}Be deduced resonances.

1978Bu01: ^{9}Be(γ,α) E=18-26 MeV, measured integral σ(E) for combined reactions.

1986Li22: ^{9}Be(γ,α) E=100 MeV bremsstrahlung, measured σ(E$_\alpha$,θ_α).

1983Fu13: ^{9}Be(γ,2α) E=1.576 MeV, measured three-body breakup σ.

^{9}Be Levels

E(level)	J$^\pi$	T$_{1/2}$	Comments
1735 *3*	1/2$^+$	225 keV *12*	Γ_γ=0.568 eV *11* E(level): Γ: Γ_γ: J$^\pi$: from (2002Su19). E$_x$=1.79 MeV *2*, Γ_n=0.26 MeV *1* and Γ_γ=2.00 eV *4* are reported In (1992Go27).
2.43×10^3 *3*	5/2$^-$		Γ_γ=0.049 eV *12* E(level): from Hughes thesis see (1974Aj01). J$^\pi$: Γ_γ: from (2002Su19). E$_x$=2.44 MeV *4*, Γ_n=0.07 MeV *1* and Γ_γ=0.17 eV *2* are reported In (1992Go27).
3077 *9*	5/2$^+$		E(level): Γ: (2002Su19) cites Γ=549 keV *12* and Γ_γ=1.24 eV *12* based on that Γ. However, 549 is roughly double the accepted Γ. E(level): the Hughes thesis cites 3.00 MeV *3*, see (1974Aj01). E$_x$=3.04 MeV *1*, Γ_n=0.41 MeV *2* and Γ_γ=1.43 eV *4* are reported In (1992Go27).
4.6×10^3			E(level): from (1961Ja13).
4.8×10^3			E(level): from (1975Hu03).
6.4×10^3			E(level): from (1975Hu03).
6.8×10^3	$+$		E(level): J$^\pi$: from (1959Th16).
7.9×10^3?	$+$		E(level): J$^\pi$: from (1959Th16). (1975Hu03) report a level At 7.8 MeV.
9.2×10^3?	$+$		E(level): J$^\pi$: from (1959Th16). (1975Hu03) report a level At 9.1 MeV.
10.7×10^3			E(level): from (1975Hu03).
11.3×10^3 *2*	$+$		(2J+1)Γ_γ=530 eV. E(level): π, Γ_γ from (1959Th15,1959Th16).
11.8×10^3			E(level): from (1969Do09).

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^{9}Be Levels (continued)

E(level)	J$^{\pi}$	Comments
12.6×10^3?		E(level): from (1975Hu03).
13.3×10^3? 2	+	(2J+1)Γ_{γ}=720 eV.
		E(level): π, Γ_{γ} from (1959Th15,1959Th16).
		an uncertain level At E$_x$=13.5 MeV is also reported In (1969Do09).
14.5×10^3?		E(level): from (1975Hu03).
16.7×10^3?		E(level): from (1975Hu03).
17.1×10^3 2		E(level): from (1975Kn03). An uncertain level At E$_x$=17.3 MeV is reported In (1969Do09). Twenty-three levels between 6-to-27 MeV are reported In (1972Th12); above 17 MeV those levels are 17300, 18100, 18600, 19060, 20490, 21680, 23020, 24580, 25620 keV with 20 keV uncertainty. These levels are not observed In other measurements. (1975Kn03) provides discussion on (1975Kn03).
18.8×10^3? 2		E(level): from (1975Kn03).
19.03×10^3 5		E(level): a level At E$_x$=19.03 MeV 5 from the thesis of Hughes (1975Hu03) is reported In (1975Kn03).
19.5×10^3?		E(level): an uncertain level is reported In (1969Do09).
19.9×10^3 2		E(level): a levels At 19.9 MeV 2 is reported In (1975Kn03), and a level At E$_x$=20.1 MeV 2 from the thesis of hughes (1975Hu03) is reported In (1975Kn03).
20.47×10^3 4		E(level): from (1964Te04).
20.73×10^3 4		E(level): from (1964Te04).
21.0×10^3?		E(level): from (1969Do09).
21.4×10^3 1		E(level): a level At E$_x$=21.4 MeV 1 from the thesis of hughes (1975Hu03) is reported In (1975Kn03), and a level At 21.4×10^3 is reported In the work of (1975Kn03).
22.4×10^3 2		E(level): from (1975Kn03). An uncertain level At E$_x$=22.4 MeV from the thesis of Hughes (1975Hu03) is also reported In (1975Kn03).
23.0×10^3?		E(level): an uncertain level At 23.0 MeV is reported In (1969Do09).
23.8×10^3 2		E(level): from (1975Kn03). An uncertain level At E$_x$=23.8 MeV 1 from the thesis of Hughes (1975Hu03) is reported In (1975Kn03).
25.0×10^3?		E(level): from (1969Do09).
27.0×10^3 5		E(level): from (1975Kn03).
		Γ: broad.