^{69}Zn β^- decay (13.749 h) 1969Zo01,1970Ra08

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 207,1 (2026)	1-Apr-2023

Parent: ^{69}Zn: E=438.636 *17*; $J^\pi=9/2^+$; $T_{1/2}$=13.749 h *14*; Q(β^-)=909.9 *14*; %β^- decay=0.033 *3*

^{69}Zn-Q(β^-): From 2021Wa16.

^{69}Zn-%β^- decay: from Iγ(438.6) in IT decay and Iγ(574.3) in β^- decay (1970Ra08).

1970Ra08: ZnO targets, enriched with ^{68}Zn were irradiated at the Oak Ridge Research Reactor. Gamma rays were detected using GeLi and NaI(Tl) detectors. Measured Eγ, Iγ, γ coincidence.

1969Zo01: ^{69}Zn isomer was produced by bombarding ZnO targets with neutrons from the MIT cyclotron, which was followed by chemical separation. Gammas were detected with Ge(Li) and NaI detectors. Measured Eγ, Iγ, $\gamma\gamma$ coincidences, and ^{69}Ge $T_{1/2}$.

1963Sc27: ^{69}Ge was produced by bombarding natural gallium oxide with deuterons from the Indiana University cyclotron. Gammas were detected with a NaI crystal. Measured Eγ, Iγ, Eβ+, Iβ^+ and $\gamma\gamma$ and $\beta^+\gamma$ coincidences.

^{69}Ga Levels

E(level)[†]	J^π[‡]	$T_{1/2}$[‡]
0	$3/2^-$	stable
574.3 *2*	$5/2^-$	11.7 ps *+22−17*

† From measured Eγ.
‡ From Adopted Levels.

β^- radiations

av Eβ: Additional information 1.

E(decay)	E(level)	Iβ^-[†]	Log *ft*	Comments
(774.2 *14*)	574.3	100	9.3[1u]	av Eβ=290.3 *7*

† For absolute intensity per 100 decays, multiply by 0.00033 *3*.

γ(^{69}Ga)

Iγ normalization: zero g.s. feeding assumed on the basis of large spin change.

E$_\gamma$[†]	I$_\gamma$[@]	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.[‡]	δ[‡]	α[#]	Comments
574.3 *2*	100	574.3	$5/2^-$	0	$3/2^-$	M1+E2	−0.06 *1*	9.13×10^{-4} *13*	α(K)=0.000817 *11*; α(L)=8.30×10^{-5} *12*; α(M)=1.214×10^{-5} *17* α(N)=6.57×10^{-7} *9* %Iγ=0.0330 *30*

† From 1970Ra08.
‡ From Adopted Gammas.
# Additional information 2.
@ For absolute intensity per 100 decays, multiply by 0.00033 *3*.

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays