

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 199,271 (2025)	1-Sep-2024

$Q(\beta^-)=11428$ 6; $S(n)=2622$ 6; $S(p)=16810$ *syst*; $Q(\alpha)=-11270$ *syst* [2021Wa16](#)

$\Delta S(p)=300$, $\Delta Q(\alpha)=400$ (*syst*, [2021Wa16](#)).

$S(2n)=8910$ 6, $S(2p)=32620$ 500 (*syst*), $Q(\beta^-n)=4953$ 6 ([2021Wa16](#)).

Production: ^{238}UC -graphite + p, $E(p)=600$ MeV, mass separation; large-volume HPGe γ detector, 4π long detector for neutrons, pulsed beam; measured β^-n growth and decay curves; determined $T_{1/2}$ and $\% \beta^-n$ ([1991Kr15](#)).

 ^{81}Zn LevelsCross Reference (XREF) Flags

A $^1\text{H}(^{82}\text{Ga}, 2p\gamma)$

E(level)	J^π	$T_{1/2}$	XREF	Comments
0	($1/2^+, 5/2^+$)	300 ms 4	A	$\% \beta^- = 100$; $\% \beta^-n = 23$ 4 J^π : $5/2^+$ suggested in 2007VeZZ ; possible configuration: ($\nu 2d_{5/2}$). Based on the latest level scheme, β decay feeding the ^{81}Ga g.s. is negligible and $1/2^+$ can't be ruled out, authors noted in 2020Pa26 . $T_{1/2}$: weighted average of 290 ms 50 (1991Kr15), 391 ms 65 (2007Ve08 , from $351\gamma(^{81}\text{Ga})(t)$), 303.2 ms 26 $\beta\gamma$ -coin decay curve (2014Xu07), 304 ms 13 (2010Pa33), 290 ms 4 (2020Pa26 – their preliminary value 297 ms 4 2013PaZU), and 474 ms +93–83 (2010Ho12). $\% \beta^-n$ from 2020Pa26 [based on the measurements of ^{81}Zn decay chain using $\% \beta^-n(^{81}\text{Ga})=11.9$ % 7 (2008Ba34), $\% \beta^-n(^{81}\text{Ga})=11.8$ % 8 in this evaluation]. Other $\% \beta^-n$: 10 3 (2010Pa33 – considering the 20% β branch unaccounted by authors, otherwise 12 4 in 2010Pa33 , also 2009Gr06), 30 13 (2010Ho12), and 7.5 30 (1991Kr15), 2005KoZU estimate $\% \beta^-n(^{81}\text{Zn}) > 10$ from ^{80}Ga in ^{81}Zn decay spectrum.
938? 13			A	
1235? 17			A	

 $\gamma(^{81}\text{Zn})$

$E_i(\text{level})$	E_γ	I_γ	E_f	J_f^π
938?	938 13	100	0	($1/2^+, 5/2^+$)
1235?	1235 17	100	0	($1/2^+, 5/2^+$)

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Level Scheme

Intensities: Relative photon branching from each level

