

^{80}Ga β^- -n decay (1.9 s+1.3 s) 1993Ru01,1986Wa17,1980Lu04

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 135, 193 (2016)	31-May-2016

Parent: ^{80}Ga : $E=0.0$; $J^\pi=6^{-}$; $T_{1/2}=1.9$ s *I*; $Q(\beta^-n)=2230$ 40; $\% \beta^-n$ decay=0.86 7

Parent: ^{80}Ga : $E=22.4$; $J^\pi=3^{-}$; $T_{1/2}=1.3$ s 2; $Q(\beta^-n)=2230$ 40; $\% \beta^-n$ decay=0.86 7

$^{80}\text{Ga}(0.0)$ - $J^\pi, T_{1/2}$: From ^{80}Ga Adopted Levels in the ENSDF database (Aug, 2014 update).

$^{80}\text{Ga}(0.0)$ - $Q(\beta^-n)$: From 2012Wa38.

$^{80}\text{Ga}(0.0)$ - $\% \beta^-n$ decay: weighted average of $\% \beta^-n=0.97$ 6 (1993Ru01), 0.69 8 (1986Wa17) and 0.84 6 (1980Lu04). Other: $I_\gamma(659\gamma)$ from $^{80}\text{Ga} \beta^-$ (absolute)/ $I(\text{delayed neutrons})$ (absolute)=99 6 (1981Ho07). The delayed neutron branching ratio most likely belongs to a mixture of the two activities.

$^{80}\text{Ga}(22.4)$ - $J^\pi, T_{1/2}$: From ^{80}Ga Adopted Levels in the ENSDF database (Aug, 2014 update).

$^{80}\text{Ga}(22.4)$ - $Q(\beta^-n)$: From 2012Wa38.

Measured $\% \beta^-n$ probability through neutron and β^- counting. 1987Wi13 assign a 204.5 γ to $^{80}\text{Ga} \beta^-n$ decay.

$\% \beta^-n=0.97$ 6 (1993Ru01), 0.69 8 (1986Wa17), 0.84 6 (1980Lu04).

$T_{1/2}(^{80}\text{Ga})=1.65$ s *I* (1993Ru01), 1.697 s *II* (1986Wa17), 1.66 s 2 (1980Lu04).

Other measurements: 1986ReZU and 1986ReZS (same group as 1986Wa17); 1982Ru01, 1981Ho07, 1977Ru09 (also 1977Ru10) (same group as 1980Lu04).

Compilation and other analyses of $\% \beta^-n$ values: 1989BrZI, 1984Ma39, 1984Ha58, 1984KoYR, 1979RuZQ.

 ^{79}Ge Levels

E(level) [†]	Comments
0.0	
186.0	
390.6	Population reported by 1987Wi13.
≈600	Possible s-wave neutron component to this level (1977Ru09).

[†] Three components in neutron spectrum (1977Ru09,1977Ru10) are reported. Two of these are interpreted as d-wave and g-wave neutrons to ^{79}Ge g.s., and a third one as s-wave component to a possible 600 level in ^{79}Ge . The population of 391 level is reported through a possible 204.5 γ assigned by 1987Wi13. The 204.5 γ must feed the ^{79}Ge isomer at 186 keV.

 $\gamma(^{79}\text{Ge})$

E_γ	$E_i(\text{level})$	E_f	Comments
204.5 <i>I</i>	390.6	186.0	E_γ : from 1987Wi13. $I_\gamma(204\gamma)/I_\gamma(659\gamma)$ from $^{80}\text{Ga} \beta^-$ =0.00089 8 (1987Wi13) leads to $\% \beta^-n$ (to 391 level)=0.08 <i>I</i> (1987Wi13).

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Decay Scheme