

^{79}Cu β^- n decay (188 ms) [1991Kr15,2008Wi01](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Ameenah R. Farhan, Balraj Singh		NDS 110, 1917 (2009)	30-Jun-2009

Parent: ^{79}Cu : $E=0.0$; $J^\pi=(5/2^-)$; $T_{1/2}=188$ ms 25; $Q(\beta^-n)=5.91\times 10^3$ 50; $\% \beta^-n$ decay=55 17

^{79}Cu - $Q(\beta^-n)$: from [2009AuZZ](#). Other: 6940 510 (syst,[2003Au03](#)).

^{79}Cu - J^π : $f_{5/2}$ proton orbital proposed by [2008Wi01](#) for ^{79}Cu g.s.; $p_{3/2}$ proton orbital would give a strong delayed-neutron branch to the g.s. (Evaluators' note: total delayed neutron branch is 55% 17 ([1991Kr15](#)), out of which 30% could feed the g.s., if 25% feeds the first 2^+ state and there is no feeding to any of the other states. Thus $3/2^-$ is not ruled out.).

^{79}Cu - $Q(\beta^-n)$: 6940 510 (syst,[2003Au03](#)).

^{79}Cu - $\% \beta^-n$ decay: From $\% \beta^-n=55$ 17 ([1991Kr15](#)). Other $\% \beta^-n > 40$ ([2009Gr06](#)).

[1991Kr15](#): measured half-life, $\% \beta^-n$.

[2008Wi01](#): ^{79}Cu isotope produced in the reaction $^{238}\text{U}(p,X)$ with a 50 MeV beam provided by the HRIBF facility at Oak Ridge.

The radioactive beams were extracted and mass separated. Detected decay products with a Micro-channel plate detector, a mini-ionization chamber and a moving tape collector. Measured β decays with two plastic β -detectors and γ -rays with four clover Germanium detectors. See also [2009Gr06](#) from the same group.

$\% \beta^-n=55$ 17 ([1991Kr15](#)).

 ^{78}Zn Levels

E(level)	J^π	Comments
0	0^+	
730	2^+	E(level): from 2008Wi01 (also 2009Gr06) only. J^π : from 'Adopted Levels'.

 $\gamma(^{78}\text{Zn})$

E_γ	$I_\gamma^\dagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
730	≈ 25	730	2^+	0	0^+	I_γ : from 2008Wi01 .

† For absolute intensity per 100 decays, multiply by 0.55 17.

Delayed Neutrons (^{78}Zn)

$E(^{78}\text{Zn})$	$I(n)^\dagger$
0	≈ 30
730	≈ 25

† For absolute intensity per 100 decays, multiply by 0.55 17.

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Decay Scheme

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

