

Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. Morse	NDS 182, 130 (2022).	14-Sep-2021

$Q(\beta^-) = -3226$ SY; $S(n) = 5560$ SY; $S(p) = 3694$ SY; $Q(\alpha) = 9888$ SY [2021Wa16](#)

$\Delta Q(\beta^-) = 754$, $\Delta S(n) = 824$, $\Delta S(p) = 851$, $\Delta Q(\alpha) = 113$ ([2021WA16](#)).

$S(2n) = 12753$ SY 732, $S(2p) = 6514$ SY 788 ([2021WA16](#)).

²⁸³Cn has been observed as the product of the ²³⁸U(⁴⁸Ca,3n) reaction at GSI ([2007HO18](#)) and RIKEN ([2017KA31](#)); as the α -decay product of ²⁸⁷Fl at GSI ([2012HO12](#)), LBNL ([2009ST21](#)), and JINR ([2004OG12,2004OG07,2006OG05](#)); and in gas-phase chemistry experiments JINR ([2007EI03,2008EI03,2010EI01](#)). In all cases, the nuclei were identified based on the observation of time- and position-correlated chains of α decays, terminated by spontaneous fission. Comparison of the observed decay properties to those previously observed allowed the members of the chains to be assigned to known nuclei.

[2016HO09](#) revises the assignment of chain #1 in [2012HO12](#) to have ²⁹¹Lv as its progenitor, which decays through ²⁸³Cn.

[2016HO09](#) also suggests that the “missing α ” events in [2004OG12](#) are actually spontaneous fission of ²⁸³Cn. This revision is adopted here except for the third entry in Table III of [2004OG12](#).

Other: [1999OG07](#), [1999OG05](#), [2004OG02](#) claim observation of ²⁸³Cn, but the properties of the decay chains identified in these works do not agree with subsequent publications.

Half-lives, branching ratios, and α -decay energies in this evaluation have been computed from the individual events listed in the references above. Half-life uncertainties have been computed according to the method of [1984SC13](#). An additional 10 keV systematic uncertainty is assumed for the α -decay energies, which is added in quadrature to the averaged statistical uncertainty.

²⁸³Cn Levels

Cross Reference (XREF) Flags

A ²⁸⁷Fl α decay (0.4 s)

E(level)	T _{1/2}	XREF	Comments
0	4.6 s +10-7	A	$\% \alpha = 85$; $\% SF = 15$ E(level): Assumed ground state. T _{1/2} : From 30 events. Note that the decay time of the escape- α event associated with ²⁸³ Cn in the chain reassigned to ²⁹¹ Lv in 2016HO09 is not included in this value.