^{14}B β^-n decay 1994ReZZ

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, C. G. Sheu and J. E. Purcell	NDS 198,1 (2024)	1-Aug-2024

Parent: ^{14}B: E=0; $J^\pi=2^-$; $T_{1/2}$=12.6 ms *6*; Q(β^-n)=12467 *21*; %β^-n decay=6.1 *3*

^{14}B-$T_{1/2}$: Weighted average (external errors) of $T_{1/2}$=16.1 ms *12*: (1974Al11), 12.8 ms *8*: (1986Cu01) and 12.4 ms *3*: (1994ReZZ, see other results in 1991Re02, 1993ReZX, 1994KiZU, 1995ReZZ, 2008ReZZ). See also 13.7 ms *6* in (1987IsZZ).

^{14}B-Q(β^-n): From (2021Wa16).

1991Re02: ^{14}B(β^-n); measured $T_{1/2}$, neutron emission probability, upper limits. TOF isochronous spectrometer, ion-neutron delayed coincidence.

1993ReZX: Spallation products from 800 MeV proton bombardment of a ^{232}Th target were captured by a transport line with a mass-to-charge filter and transferred to the TOFI spectrometer at LAMPF. The beamline was separately tuned to transport a number of different nuclides. The neutrons were detected in a polyethylene moderated ^{3}He counter, and standard techniques were implemented. The β-delayed neutron probabilities were deduced from analysis of the number of implanted ions (per beam pulse) and the rate of β-delayed neutrons detected in the zero-threshold counter.

An associated conference report (1994ReZZ) indicates the β-delayed neutron probability P_n=6.1% *3* and $T_{1/2}$ = 12.4 ms *3*.

Results presented in (1993ReZX) analyzed the data measured in the polyethylene moderated ^{3}He counter and deduced a general value for the energy of neutrons emitted from the decay; E_n=1.38 MeV *+86−65*. The value E_n=1.3 MeV *3* is published in (1994ReZZ).

1993Ok02: ^{14}B(β^-n); measured NMR spectra; deduced g factor.

1994KiZU: ^{14}B(β^-n); measured decay products, TOF, En, In, E_α, I_α; deduced $T_{1/2}$, neutron emission probability. Comparison with available data.

1995ReZZ: ^{14}B(β^-n); measured neutron emission probabilities. TOF isochronous spectrometer.

1996OgZY: ^{14}B(β^-); measured E_β, β-delayed E_γ.

^{13}C Levels

E(level)	J^π[†]
0.0	$1/2^-$

[†] From Adopted Levels for ^{13}C.

Delayed Neutrons (^{13}C)

E(^{13}C)	I(n)[†]
0.0	6.1 *3*

[†] Absolute intensity per 100 decays.