Adopted Levels 2010Sp02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, C. G. Sheu	ENSDF	16-Jan-2016

Q(β^-)=2.693×10^4 *18*; S(n)=−5 *5* 2012Wa38

The particle instability of ^{18}B was established with the failure to observe ^{18}B nuclei in the fragmentation products of 44 MeV/nucleon ^{40}Ar ions on a Ta target (1985La03,1986Po13), or in the fragmentation products of 12 MeV/nucleon ^{56}Fe ions on a Be target (1984Mu27). Its neutron separation energy is well known as S(n)<10 keV, hence the uncertainty in its mass excess (ΔM= 51850 keV *170*) is mainly determined by uncertainty in the ^{17}B mass (ΔM=43770 keV *170*) (2012Wa38).

Theoretical Predictions:

The s-wave neutron emission, observed in (2010Sp02), is consistent with a $J^\pi=2^-$ spin assignment for ^{18}B. The shell model calculations of (1992Wa22) predict $J^\pi=2^-$ for the ground state with the first three excited states at 0.45, 0.52, 0.839 MeV with $J^\pi=4^-$, 2^-, 3^-; an update of this calculation is given in (2010Sp02). On the other hand, (1985Po10) predicted the ^{18}B ground state to have $J^\pi=4^-$ and to have excited states at 0.62, 0.86, and 1.59 MeV with $J^\pi=1^-$, 2^- and 2^- (1985Po10). As discussed in (2010Sp02), the inability to definitively identify the ^{18}B and ^{17}B states participating in the observed decay leaves some uncertainty in the J^π assignment.

See other general predictions in (1997Ba54,2004La24,2006Ko02,2012Yu07).

^{18}B Levels

Cross Reference (XREF) Flags

A ^{9}Be(^{19}C,^{18}B)

E(level)	J^π	XREF	Comments
0	(2$^-$)	A	%n=100