## Adopted Levels

History

| Type | Author | Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | J. E. Purcell, C. G. Sheu | ENSDF | 13-Aug-2018 |

S(p)=−100 *30* 2017Wa10

The atomic mass excess of $^{8}$C is given as 35064 keV *18* in (2017Wa10). Using this mass excess value, the binding energy of $^{8}$C is 24.812 MeV *18*. In some of the theoretical articles referenced below, this is the quantity that is calculated. Sometimes the binding energy is given relative to the $^{4}$He+4p threshold which is 3.483 MeV *18*. $^{8}$C is unstable with respect to single proton decay, Q=98 keV, 2 proton decay, Q=2111 keV, 3 proton decay, Q=1517 keV and 4 proton decay, Q=3483 keV. Results reported in (2010Ch42) indicate that $^{8}$C decays by emitting two pairs of protons-$^{8}$C→$^{6}$Be+2p→($^{4}$He+2p)+2p. Also see (2011ChZW). For theoretical studies that include $^{8}$C see (1974Ir04, 1987Bl18, 1987Sa15, 1988Co15, 1996Gr21, 1996Su24, 1997Ba54, 1997Po12, 1998Wi10, 1999Ha61, 2000Wi09, 2001Co21, 2002Ba90, 2003Ba99, 2006Sa29, 2006Wi07, 2007Ma79, 2009Ba41, 2011ChZW, 2012My02, 2012My04, 2014Eb02, 2014Mi17, 2014My03). IMME studies including A=8 are reported in (1974Ro17, 1976Tr01, 1984An18, 1998Br09, 2011Ch53, 2013La29). Calculations of the $^{8}$C rms radii are reported in (2017Ka45).

### $^{8}$C Levels

Cross Reference (XREF) Flags

- A $^{9}$Be($^{9}$C,$^{8}$C)
- B $^{12}$C($\alpha$,$^{8}$He)
- C $^{14}$N($^{3}$He,$^{9}$Li)

| E(level) | J$^{\pi}$ | T$_{1/2}$ | XREF | Comments |
|---|---|---|---|---|
| 0 | 0$^{+}$ | 130 keV *50* | ABC | %2p=100<br>T=2<br>T$_{1/2}$: from $^{9}$Be($^{9}$C,$^{8}$C) (2011Ch32); other values from $^{12}$C($\alpha$,$^{8}$He) Γ=0.22 MeV *+8−14* (1974Ro17), $^{14}$N($^{3}$He,$^{9}$Li) Γ=290 keV *80* (1976Ro04), $^{12}$C($\alpha$,$^{8}$He): either Γ=230 keV *50* from a Gaussian shaped fit or Γ=183 keV *56* from a Breit-Wigner shaped fit (1976Tr01). The higher statistics in (2011Ch32) compared to the earlier results leads to the choice of Γ=130 keV *50*. |