Adopted Levels

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	31-Jul-2014

Q(β^-)=15220 *SY*; S(n)=2600 *SY*; S(p)=16010 *SY*; Q(α)=−14760 *SY* 2012Wa38

Estimated uncertainties (2012Wa38): 600 for Q(β^-), 720 for S(n), 1000 for S(p) and Q(α).

S(2n)=8080 *780*, Q(β^-n)=8930 *600* (syst,2012Wa38). S(2p)=36030 (1997Mo25,calculated).

1997Be70, 1995En07: ^{80}Cu produced and identified in ^{9}Be(^{238}U,F), E=750 MeV/nucleon; measured production sigma, residuals fission yields. Fully-stripped fission product separation using fragment separator, tof.

2010Ho12: ^{80}Cu produced in ^{9}Be(^{86}Kr,X) reaction at E=140 MeV/nucleon; fully-ionized ^{86}Kr beam, A1900 fragment separator at NSCL facility using Bρ-ΔE-Bρ method. After separation, the mixed beam was implanted into the NSCL β-counting system (BCS) consisting of stacks of Si PIN detectors, a double-sided Si strip detector (DSSD) for implantation of ions, and six single-sided Si strip detectors (SSSD) followed by two Si PIN diodes. The identification of each implanted event was made from energy loss, time-of-flight information and magnetic rigidity. The implantation detector measured time and position of ion implantations and β decays. Neutrons were detected with NERO detector. Measured β- and βn-correlated events with ion implants; half-life of ^{80}Cu.

2014Xu07: ^{80}Cu nuclide produced in ^{9}Be(^{238}U,F) reaction with a ^{238}U^{86+} beam of 345 MeV/nucleon produced by the RIKEN accelerator complex. Separation of ^{80}Cu nuclei was made on the basis of magnetic rigidity, time-of-flight and energy loss of the fragments (ΔE-Bρ-tof method) using BigRIPS fragment separator and and ZeroDegree Spectrometer (ZDS) at RIBF-RIKEN facility. Based on A/Q spectrum and Z versus A/Q plot. Measured heavy fragment, β and γ spectra using wide-range active silicon strip stopper array (WAS3ABi) for beta and ion detection, and EUROBALL-RIKEN Cluster array for γ detection. Decay curves were obtained from time differences between implantation and correlated β decays.

2003Bo06: theoretical calculation of half-life, %β^-n.

Additional information 1.

^{80}Cu Levels

E(level)	$T_{1/2}$	Comments
0	113.6 ms *+82−38*	%β^-=100; %β^-n=?; %β^-2n=? Only β^- decay mode has been observed by 2010Ho12 and 2014Xu07. E(level): the observed activity is assumed to be in its ground state. J^π: 1/2$^-$ neutron orbital and 1/2$^-$ proton orbital in theoretical calculations (1997Mo25). $T_{1/2}$: weighted average of 113.3 ms *64* (2014Xu07) and 0.17 s $^{11-5}$ (2010Ho12). In 2014Xu07, $T_{1/2}$ is from $\beta\gamma$-coin decay curve. In 2010Ho12, $T_{1/2}$ is from measurement of time sequence of decay type events correlated with the implanted nuclei (of ^{80}Cu) in Si detectors, using method of maximum likelihood analysis which required, as input parameters, values of β-detection efficiency, background, half-lives of daughter and granddaughter nuclei and experimental or theoretical values of %β^-n of all nuclei involved. In 2010Ho12, a total of 16 implants were detected, and no correlated βn coincidences were observed.