Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 135, 193 (2016)	31-May-2016

Q(β^-)=11530 *SY*; S(n)=5470 *SY*; S(p)=15060 *SY*; Q(α)=−15220 *SY* 2012Wa38
Estimated uncertainties (2012Wa38): 400 for Q(β^-), 640 for S(n), 900 for S(p), 810 for Q(α).
S(2n)=9530 *430*, Q(β^-n)=7510 *400* (syst,2012Wa38). S(2p)=35050 (1997Mo25,calculated).
1991Kr15: ^{79}Cu produced by ^{238}U(p,X) E=600 MeV and separated by thermochromatographic technique and mass separation.
1995En07: ^{9}Be(^{238}U,F) reaction at 750 MeV/nucleon followed by tof and magnetic methods to identify ^{79}Cu.
2010Ho12: ^{9}Be(^{86}Kr,X) 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 ^{79}Cu and delayed-neutron emission probability.
2014Xu07 (also 2014XuZZ): ^{79}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 ^{79}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 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.
2012Ko29 (also 2009Gr06,2008Wi01): experimental study of β^-n decay of ^{79}Cu at HRIBF-ORNL facility.
2006Ha62: measured mass excess.
Theoretical structure calculations:
2012Sr02, 2010Da06, 2010Si11, 2010Vi07, 2005Li54: levels, J, π, B(EΛ).
Additional information 1.

^{79}Cu Levels

E(level)	$T_{1/2}$	Comments
0	241.0 ms *32*	%β^-=100; %β^-n=66 *12*; %β^-2n=? %β^-n: from weighted average of 72 *12* (2010Ho12) and 55 *17* (1991Kr15). Theoretical $T_{1/2}$=156.8 ms, %β^-n=25.4, %β^-2n=0.0 (2003Mo09). Theoretical $T_{1/2}$=1.14 s, %β^-n=56.5, %β^-2n=0.2 (2016Ma12). E(level): the observed activity is assumed to be in its ground state. J^π: $5/2^-$ from systematics (2012Au07,2012Ko29), $1/2^-$ in theoretical calculations (1997Mo25). $T_{1/2}$: weighted average of 241.3 ms *21* (2014Xu07,2014XuZZ), 257 ms *+29−26* (2010Ho12), 188 ms *25* (1991Kr15). If the low value from 1991Kr15 is excluded, weighted average is 241.4 ms *22*. In 2014Xu07, $T_{1/2}$ is from $\beta\gamma$-coin decay curve; 2014XuZZ also give 249 ms *12* from β decay. In 2010Ho12, $T_{1/2}$ is from measurement of time sequence of decay type events correlated with the implanted nuclei (of ^{79}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 754 implants were detected, and 81 correlated βn coincidences were observed.