Adopted Levels

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	30-Jun-2017

Q(β^-)=14490 *SY*; S(n)=3220 *SY*; S(p)=15130 *CA*; Q(α)=−12060 *CA* 2017Wa10,1997Mo25

Estimated uncertainties (2017Wa10): 640 for Q(β^-), 710 for S(n).

Q(β^-) and S(n) from 2017Wa10; S(p) and Q(α) from 1997Mo25.

Q(β^-n)=8980 *590*, S(2n)=7870 *640* (syst,2017Wa10). S(2p)=33480 (1997Mo25,theory).

2010Oh02: ^{120}Tc nuclide identified in Be(^{238}U,F) and Pb(^{238}U,F) reactions with a $^{238}U^{86+}$ beam energy of 345 MeV/nucleon produced by the cascade operation of the RBIF accelerator complex of the linear accelerator RILAC and four cyclotrons RRC, fRC, IRC and SRC. Identification of ^{120}Tc nuclei was made on the basis of magnetic rigidity, time-of-flight and energy loss of the fragments using BigRIPS fragment separator. Experiments performed at RIKEN facility. Based on A/Q spectrum and Z versus A/Q plot, 3 counts were assigned to ^{120}Tc isotope. (Q=charge state).

2015Lo04: ^{120}Tc nuclide produced at RIBF-RIKEN facility in ^{9}Be(^{238}U,F) reaction at E=345 MeV/nucleon with an average intensity of 6×10^{10} ions/s. Identification of ^{120}Tc was made by determining atomic Z and mass-to-charge ratio A/Q, where Q=charge state of the ions. The selectivity of ions was based on magnetic rigidity, time-of-flight and energy loss. The separated nuclei were implanted at a rate of 50 ions/s in a stack of eight double-sided silicon-strip detector (WAS3ABi), surrounded by EURICA array of 84 HPGe detectors. Correlations were recorded between the implanted ions and β rays. The half-life of ^{120}Tc isotope was measured from the correlated ion-β decay curves and maximum likelihood analysis technique as described in 2014Xu07. Comparison of measured half-lives with FRDM+QRPA, KTUY+GT2 and DF3+CQRPA theoretical calculations.

2014Mi23: theoretical calculation of β-delayed-neutron emission probabilities.

^{120}Tc Levels

E(level)	$T_{1/2}$	Comments
0	21 ms *5*	%β^-=100; %β^-n=?; %β^-2n=? Theoretical $T_{1/2}$=21.8 ms, %β^-n=31.1, %β^-2n=2.5 (2003Mo09). Theoretical $T_{1/2}$=34 ms, %β^-n=82.8, %β^-2n=0.8 (2016Ma12). Measured σ=2 pb (2010Oh02), systematic uncertainty≈40%. Probability of misidentification of ^{120}Tc isotope<0.001% (2010Oh02). E(level): measured half-life is assumed to correspond to the ground state of ^{120}Tc. J^π: 1^- to 4^- based on $\Omega_p=5/2^+$ and $\Omega_n=3/2^-$ from theoretical considerations (1997Mo25). $T_{1/2}$: measured by 2015Lo04 from (implanted ions)β correlated curves in time and position using maximum likelihood method. See 2015Lo04 for comparison of their experimental value with theoretical values.