Adopted Levels

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	20-Jul-2015

Q(β^-)=12190 *SY*; S(n)=4650 *SY*; S(p)=15130 *CA*; Q(α)=−11440 *SY* 2012Wa38,1997Mo25
Estimated uncertainties (2012Wa38): 590 for Q(β^-), 640 for S(n), 710 for Q(α).
Q(β^-), S(n), Q(α) from 2012Wa38; S(p) from 1997Mo25.
Q(β^-n)=8820 *590*, S(2n)=8130 *640* (syst,2012Wa38). S(2p)=32820 (1997Mo25,theory).
2010Oh02: ^{119}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 ^{119}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 ^{119}Tc isotope. (Q=charge state).
2015Lo04: ^{119}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 ^{119}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 ^{119}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.

^{119}Tc Levels

E(level)	$T_{1/2}$	Comments
0	22 ms *3*	%β^-=100; %β^-n=?; %β^-2n=? Theoretical $T_{1/2}$=25.1 ms, %β^-n=32.0, %β^-2n=0.12 (2003Mo09). Measured σ=24 pb (2010Oh02), systematic uncertainty≈40%. Probability of misidentification of ^{119}Tc isotope<0.001% (2010Oh02). E(level): measured half-life is assumed to correspond to the ground state of ^{119}Tc. J^π: $3/2^-$ from systematic trends (2012Au07), $5/2^+$ 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.