Adopted Levels

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

Q(β^-)=10040 *SY*; S(n)=3380 *SY*; S(p)=15780 *SY*; Q(α)=−9000 *SY* 2012Wa38

Estimated uncertainties (2012Wa38): 300 for Q(β^-), 360 for S(n), 420 for S(p), 590 for Q(α).

Q(β^-n)=4420 *300*, S(2n)=8970 *300*, S(2p)=29790 *360* (syst,2012Wa38).

1994Be24, 1997Be70, 1998Do08: ^{113}Mo produced and identified in Pb,Be(^{238}U,F), E=750 MeV/nucleon, followed by on-line fragment separator and time of flight method at GSI facility. Identification was marked as uncertain in 1994Be24 and 1997Be70.

2008Be33: ^{113}Mo produced in ^{9}Be(^{136}Xe,X),E=1 GeV/nucleon reaction at GSI facility. Products identified in-flight by using the Fragment Separator (FRS). Measured cross section.

2011Ni01: ^{113}Mo nuclide produced in Be(^{238}U,F) reactions at E=345 MeV/nucleon produced by the cascade operation of the RBIF complex of accelerators at RIKEN. Target=550 mg/cm^2. Identification of ^{113}Mo made on the basis of magnetic rigidity, time-of-flight and energy loss. The separated nuclei were implanted in a nine-layer double-sided silicon-strip detector (DSSSD). Correlations were recorded between the heavy ions and β rays. The half-life of ^{113}Mo isotope was measured from the correlated ion-β decay curves and maximum likelihood analysis technique. In the analysis of the decay curve, β-detection efficiency, background rate, daughter and granddaughter (including those populated in delayed neutron decays) half-lives, and β-delayed neutron emission probabilities were considered. Comparison of measured half-lives with FRDM+QRPA and KTUY+GT2 calculations.

2015Lo04: ^{113}Mo 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 ^{113}Mo 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 ^{113}Mo 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.

2014Sa18, 2013Fa05: theoretical calculation of $T_{1/2}$ and %β^-n.

^{113}Mo Levels

E(level)	$T_{1/2}$	Comments
0	80 ms *2*	%β^-=100; %β^-n=? Theoretical $T_{1/2}$=121 ms, %β^-n=3.4 (2003Mo09). E(level): measured half-life is assumed to correspond to the ground state of ^{113}Mo. J$^\pi$: 3/2$^+$ from systematic trends (2012Au07), 5/2$^-$ in theoretical prediction (1997Mo25). $T_{1/2}$: measured by 2015Lo04 from (implanted ions)β correlated curves in time and position using maximum likelihood method. Other: 78 ms *+6−5* (2011Ni01, from the analysis of the (ion)β-correlated decay curve). See 2015Lo04 for comparison of their experimental value with theoretical values.