Adopted Levels

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

Q(β^-)=11160 *syst*; S(n)=3010 *syst*; S(p)=16650 *syst*; Q(α)=−9610 *syst* 2012Wa38

Estimated uncertainties (2012Wa38): ΔQ(β^-)=450, ΔS(n)=500, ΔS(p)=640, ΔQ(α)=810.

Q(β^-n)=5950 *410*, S(2n)=8120 *500* (syst,2012Wa38). S(2p)=31950 (theory,1997Mo25).

2010Oh02: ^{115}Mo 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 ^{115}Mo 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, 933 counts were assigned to ^{115}Mo isotope. (Q=charge state).

2011Ni01: ^{115}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 ^{115}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 ^{115}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: ^{115}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 ^{115}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 ^{115}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.

1995CzZZ: preliminary report suggesting formation of ^{115}Mo (figure 2 in 1995CzZZ) produced in ^{208}Pb(U,F) reaction at E=750 MeV/nucleon; on-line fragment separator at GSI; time of flight and energy loss technique. However, this isotope was not listed in authors′ later publications of the same or similar studies: 1997Be70 and 1997Be12. This would suggest that identification of ^{115}Mo was probably uncertain in this study.

2013Fa05: theoretical calculations of $T_{1/2}$ and %β^-n.

^{115}Mo Levels

E(level)	$T_{1/2}$	Comments
0	45.5 ms *20*	%β^-=100; %β^-n=?; %β^-2n=? Theoretical $T_{1/2}$=49.2 ms, %β^-n=6.2, %β^-2n=0.02 (2003Mo09). Measured σ=1150 pb (2010Oh02), systematic uncertainty approximately 40%. Probability of misidentification of ^{115}Mo isotope<0.001% (2010Oh02). E(level): measured half-life is assumed to correspond to the ground state of ^{115}Mo. J^π: 1/2$^+$ predicted in calculations (1997Mo25). $T_{1/2}$: measured by 2015Lo04 from (implanted ions)β correlated curves in time and position using maximum likelihood method. Other: 51 ms *+79−19* from ion-β correlations (2011Ni01). See 2015Lo04 for comparison of their experimental value with theoretical values.