Adopted Levels

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

Q(β^-)=9960 *SY*; S(n)=4820 *SY*; S(p)=17440 *SY*; Q(α)=−10110 *SY* 2012Wa38

Estimated uncertainties (2012Wa38): 580 for Q(β^-), 640 for S(n), 710 for S(p), 860 for Q(α).

Q(β^-n)=6340 *540*, S(2n)=7840 *580* (syst,2012Wa38). S(2p)=32700 (1997Mo25,theory).

2010Oh02: ^{116}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 ^{116}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, 78 counts were assigned to ^{116}Mo isotope. (Q=charge state).

2015Lo04: ^{116}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 ^{116}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 ^{116}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.

1997Sk01: calculated ground state, excited minimum, quadrupole moment.

^{116}Mo Levels

E(level)	J^π	$T_{1/2}$	Comments
0	0^+	32 ms *4*	%β^-=?; %β^-n=?; %β^-2n=? Theoretical $T_{1/2}$=50.6 ms, %β^-n=7.8, %β^-2n=0.0 (2003Mo09). Measured σ=72 pb (2010Oh02), systematic uncertainty≈40%. $T_{1/2}$: 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. Probability of misidentification of ^{116}Mo isotope<0.001% (2010Oh02).