Adopted Levels

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	10-Jun-2015

Q(β^-)=11320 *SY*; S(n)=2750 *SY*; S(p)=17220 *CA*; Q(α)=−11090 *SY* 2012Wa38,1997Mo25
S(p) from 1997Mo25; all other values from 2012Wa38.
Estimated uncertainties (2012Wa38): 760 for Q(β^-), 920 for S(n), 900 for Q(α).
Q(β^-n)=6510 *730*, S(2n)=7510 *860* (syst,2012Wa38). S(2p)=33120 (theory,1997Mo25).
2010Oh02: ^{111}Zr 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 ^{111}Zr 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, 26 counts were assigned to ^{111}Zr isotope. (Q=charge state). Measured σ=20 pb (2010Oh02), systematic uncertainty≈40%.
2015Lo04: ^{111}Zr 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 ^{111}Zr 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 ^{111}Zr 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.
Additional information 1.

^{111}Zr Levels

E(level)	$T_{1/2}$	Comments
0	24.0 ms *50*	%β^-=100; %β^-n=?; %β^-2n=? Theoretical %β^-n=14.7, %β^-2n=1.0 (2003Mo09). E(level): it is assumed that the measured half-life corresponds to the g.s. of ^{111}Zr. J^π: $1/2^-$ in theoretical considerations (1997Mo25). $T_{1/2}$: from 2015Lo04 from analysis of the (ion)β-correlated decay curve; and maximum likelihood method. Note that the 2015Lo04 list 24.0 ms *5* but judging from the value plotted in their Fig. 2, as well as from the uncertainties quoted for other isotopes, it seems to be 5 ms.