

Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 115, 1 (2014)	31-Jul-2013

$Q(\beta^-)=14520$ SY; $S(n)=4310$ SY; $S(p)=16950$ SY; $Q(\alpha)=-15320$ SY [2012Wa38](#)

$\Delta Q(\beta^-)=720$, $\Delta S(n)=780$, $\Delta S(p)=920$, $\Delta Q(\alpha)=780$ (syst,[2012Wa38](#)).

$Q(\beta^-n)=11220$ 700 (syst,[2011Wa38](#)).

[2012Ga06](#): Summary and compilation of the discovery of the Mn isotopes.

[2011Da08,2002MaZN](#) (thesis): Produced by projectile fragmentation of ^{86}Kr beam on 50 mg/cm² thick Ta at 57.8 MeV/nucleon.

Separated by LISE2000 spectrometer at GANIL. Detector system included a three-element Si-detector telescope containing a double-sided silicon-strip detector (DSSSD) backed by a Si(Li) detector and surrounded by four clover type EXOGAM Ge detectors. Product identified by mass, atomic number, charge, energy loss and time of flight. Measured isotopic $T_{1/2}$ from timing correlation between implanted ions and β decay events. Fitting procedure included five parameters: β -detection efficiency, background rate, mother, daughter and granddaughter half-lives.

[1999Ha05](#): Produced by 1 GeV proton-induced spallation of U in a thick UC₂ target at the ISOLDE facility at CERN.

Identification and $T_{1/2}$ measurements by chemically selective laser ionization and β^- delayed n counting with the Mainz $4\pi^3$ He neutron detector.

[1997Be70](#): Produced by projectile fission of ^{238}U on ^9Be target at 750 MeV/nucleon. Fission fragments separated with the FRS separator at GSI and identified by combination of ΔE -B ρ -TOF, and trajectory. A total of 5 counts were assigned to ^{69}Mn corresponding to cross section of 0.4 nanobarns.

 ^{69}Mn Levels

E(level)	J^π	$T_{1/2}$	Comments
0.0	(5/2 ⁻)	16 ms 3	$\% \beta^- = 100$ J^π : from systematics. $T_{1/2}$: from weighted average of 18 ms 4 (2011Da08) and 14 ms 4 (1999Ha05). $\% \beta^- n$: 23.62 estimated from theory (1997Mo25).