Adopted Levels:not observed

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Ninel Nica, John Cameron and Balraj Singh	NDS 113,1 (2012)	31-Dec-2011

$Q(\beta^-)=2.55\times10^4$ *syst* 2012Wa38

Note: Current evaluation has used the following Q record $ 25531 syst 0 syst 22750 calc −20430 calc 2011AuZZ,1997Mo25.

$Q(\beta^-)$ and S(n) from 2011AuZZ; S(p) and $Q(\alpha)$ from 1997Mo25.

Estimated $\Delta Q(\beta^-)=752$, $\Delta S(n)=100$ (2011AuZZ).

S(2n)=1520 *316*, $Q(\beta^-n)=22200$ *621* (syst,2011AuZZ). S(2p)=52980 (1997Mo25,calculated).

Values in 2003Au03 (all from syst): $Q(\beta^-)=26530$ *1080*, S(n)=−300 *100*, S(2n)=950 *320*, $Q(\beta^-n)=23730$ *1030*.

^{36}Na is unbound i.e. particle unstable (2007Ba71,2002Lu09,2002No11).

2007Ba71: W(^{48}Ca,Xγ) E=141 MeV/nucleon beam from the National Superconducting Cyclotron Laboratory (NSCL). The fragments were separated with the A1900 fragment separator. Isotopic identification by multiple ΔE signals, magnetic rigidity, total energy and time of flight analysis. Detectors: plastic scintillators, parallel-plate avalanche counters (PPACs) and silicon PIN diodes. No events could be assigned to ^{36}Na confirming that this nucleus is unbound towards particle emission.

2002Lu09, 2002Lu19: RIKEN-GANIL-Dubna collaboration. ^{36}Na not seen in reaction: Ta(^{48}Ca,X) E=59.8 MeV/nucleon. Fragmentation of ^{48}Ca primary beam. Reaction fragments analyzed by RIPS recoil fragment separator at RIKEN facility and LISE-2000 spectrometer at GANIL. Isotopic identification by measurements of energy loss, total kinetic energy, time-of-flight and magnetic rigidity for each fragment. No events were observed for ^{36}Na.

2002No11: ^{36}Na not seen in reaction: Ta(^{48}Ca,X) E=64 MeV/nucleon. Reaction fragments analyzed by RIPS recoil fragment separator at RIKEN facility. Identification by measurements of energy loss, total kinetic energy, time-of-flight and magnetic rigidity for each fragment. Expected cross section for ^{36}Na, based on measured cross sections for ^{34}Ne and ^{38}Mg, is ≈3 pb. This cross section should result in the observation of some events for ^{36}Na but none were seen.

Additional information 1.

^{36}Na Levels

E(level)	$T_{1/2}$	Comments
0?	<180 ns	%n=? Calculated $\%\beta^-n=21$, $\%\beta^-2n=56$ (1997Mo25). $T_{1/2}$: based on time-of-flight in 2007Ba71, and production cross section estimates (2002No11). Calculated $T_{1/2}(\beta$ decay)=2.3 ms (1997Mo25).