

Adopted Levels

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Ninel Nica, Balraj Singh		NDS 113,1563 (2012)	28-May-2012

$Q(\beta^-)=2.16\times 10^4$ syst; $S(n)=1.2\times 10^3$ syst [2012Wa38](#)

Note: Current evaluation has used the following Q record \$ 21553 syst 1227 syst 29750 calc -25690 calc [2011AuZZ,1997Mo25](#).

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

$\Delta Q(\beta^-)=718$, $\Delta S(n)=786$ (syst,[2011AuZZ](#)).

$Q(\beta^-n)=20803$ 786, $S(2n)=300$ 100 (syst,[2011AuZZ](#)).

Values in [2003Au03](#) (from syst): $Q(\beta^-)=20360$ 1210, $S(n)=950$ 1140, $Q(\beta^-n)=20160$ 1190, $S(2n)=300$ 100.

Two independent experiments have been done, one at RIKEN and the other at GANIL using two different ^{48}Ca beam energies. In each, two events were assigned to ^{34}Ne nuclide.

[2002No11](#) (also [2002Lu19](#)): ^{34}Ne seen in reaction: $\text{Ta}(^{48}\text{Ca},X)$ $E=64$ 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. Measured $\sigma\approx 0.1$ pb for yield of ^{34}Ne in the above reaction corresponding to two events seen in [2002No11](#) (also [2002Lu19](#)).

[2004Lu19](#), [2003Lu11](#), [2002Lu19](#), [2002Lu09](#): RIKEN-GANIL-Dubna collaboration. ^{34}Ne confirmed in reaction: $\text{Ta}(^{48}\text{Ca},X)$ $E=58.9$ 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. Two events (see figure 1a of [2002No11](#) or figure 1b of [2002Lu19](#)) were observed for ^{34}Ne with measured $\sigma=0.17$ pb 12 for ^{34}Ne in GANIL experiment.

[Additional information 1](#).

 ^{34}Ne Levels

E(level)	J^π	$T_{1/2}$	Comments
0	0^+	>60 ns	$\% \beta^- = ?$; $\% \beta^- n = ?$; $\% \beta^- 2n = ?$ $T_{1/2}$: limiting value from time-of-flight in 2002No11 . Actual half-life is expected to be much longer as suggested by systematics value of 1 ms (systematics, 2003Au02 and 2011AuZY) and calculated value of 5.2 ms (1997Mo25). Calculated $\% \beta^- n = 1.1$, $\% \beta^- 2n = 39.9$ (1997Mo25).