

Adopted Levels: not observed

$Q(\beta^-)=24430$; $S(n)=-2370$; $S(p)=29480$ (2019Mo01)

$S(2n)=-470$ (2019Mo01, FRDM).

2019Ah07: $^9\text{Be}(^{48}\text{Ca}, X)$ using a 345-MeV/nucleon 450-pnA ^{48}Ca beam provided by the cascade operation of the RIBF accelerator complex at RIKEN and impinging on a 20-mm-thick beryllium target. Projectile fragments were separated and identified using ΔE -tof- $B\rho$ by the large-acceptance two-stage separator BigRIPS. Tof was measured using two thin plastic scintillators placed at the intermediate and final foci of the second stage of BigRIPS. $B\rho$ was measured from position measurement at the intermediate focus using the plastic scintillator. ΔE was measured using a stack of six silicon detectors installed at the final focus. Optimum settings of $B\rho$ were tuned to transmit ^{33}F for 14 hours and $^{36}\text{Ne}+^{39}\text{Na}$ for 7.8 hours. The Be target was irradiated with 1.4×10^{17} and 7.8×10^{16} ^{48}Ca ions, respectively. Measured Z vs A/Z particle-identification plot. No ^{35}Ne events were observed in either setting. Under ^{33}F setting, the expected ^{35}Ne yields obtained from LISE++ are 177 53 using the production $\sigma=37.8$ fb from EPAX 2.15 systematics and 69 17 using the production $\sigma=14.8$ fb 36 from Q_g systematics.

2022Ah02: Same experimental setup as 2019Ah07 with 540-pnA ^{48}Ca beam. Optimum settings of $B\rho$ were tuned to transmit ^{39}Na for 46.1 hours and ^{36}Ne for 25.3 hours. Measured Z vs A/Z particle-identification plot. No ^{35}Ne events were observed in either setting.

2020Mi15: VS-IMSRG ab initio calculations of ground-state energies and $S(2n)$.

 ^{35}Ne Levels

E(level)

Comments

0?

%n=?; %2n=?

Evaluators estimate the probability of not observing ^{35}Ne events by chance is 2.6×10^{-23} using the lowest expected yield of 52 events (2019Ah07) and Poisson probability distributions. ^{35}Ne is determined to be unbound at a confidence level of $1-2.6\times 10^{-23}$. The heaviest bound neon isotope is ^{34}Ne .

J^π : $5/2^-$ calculated projection of the odd-neutron angular momentum along the symmetry axis and parity of the wave function (2019Mo01).

$T_{1/2}$: 2.7 ms calculated with respect to Gamow-Teller QRPA transitions and phenomenological first-forbidden contributions (2019Mo01).