
Adopted Levels: not observed

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 201,1 (2025)	31-Oct-2024

$Q(\beta^-)=29530$ *calc*; $S(p)=24070$ *calc* [2019Mo01](#)

Search for the observation of ^{32}F nuclide proved negative, thus suggesting that ^{32}F is unbound towards neutron emission.

[2019Ah07](#): $^9\text{Be}(^{48}\text{Ca}, X)$ $E=345$ MeV/nucleon ^{48}Ca beam was produced from RIBF accelerator complex at RIKEN. Fragments were separated and identified in flight using the large-acceptance two-stage separator BigRIPS spectrometer by tof- $B\rho$ - ΔE method. The time-of-flight (tof) was measured using two thin plastic scintillators placed at the intermediate and final foci of the second stage of the BigRIPS separator. Magnetic rigidity ($B\rho$) was measured from position measurement at the intermediate focus using the plastic scintillator. The energy loss (ΔE) was measured using an array of six silicon detectors installed at the final focus. Optimum setting of $B\rho$ was tuned to ^{36}Ne , based on detailed simulations of the reaction and transmission with the LISE++ code. Measured atomic number (Z) versus atomic mass/atomic number (A/Z) particle-identification plot. Production target was irradiated with 1.4×10^{17} ^{48}Ca ions in 414 h.

No events were observed for ^{32}F , implying that this nuclide is unbound towards neutron emission. Estimated counts ([2019Ah07](#)) were 323 97 from EPAX 2.15 reaction model calculations, and 1140 330 from systematics of Q values using LISE++ simulations, with optimum setting on ^{33}F .

Structure calculations:

[2022Fo03](#): calculated levels, J , π .

[2022Si04](#): calculated matter radius.

 ^{32}F Levels

E(level)	Comments
0?	$\%n=?$ Calculated $T_{1/2}=1.2$ ms (2019Mo01), 3.7 ms (2021Mi17). Calculated $\% \beta^- 1n=10$, $\% \beta^- 2n=61$, $\% \beta^- 3n=10$, $\% \beta^- 4n=15$ (2019Mo01). Calculated $\% \beta^- 1n=13.7$, $\% \beta^- 2n=37.4$, $\% \beta^- 3n=16.9$, $\% \beta^- 4n=29.7$, $\% \beta^- 5n=1.2$ (2021Mi17).