

Adopted Levels, Gammas

$Q(\beta^-)=22190$ syst; $S(n)=1920$ syst; $S(p)=22300$ syst; $Q(\alpha)=-21440$ syst [2021Wa16](#)

$\Delta Q(\beta^-)=720$, $\Delta S(n)=300$, $\Delta S(p)=840$, $\Delta Q(\alpha)=860$ (syst,[2021Wa16](#)).

$S(2n)=2090$ 810, $Q(\beta^-n)=21440$ 670 (syst,[2021Wa16](#)).

Isotope discovery ([2012Th10](#)): Ir(p,X) ^{35}Na at CERN ([1983La12](#)).

^{35}Na production:

[2019Ah07](#),[2022Ah02](#): $^9\text{Be}(^{48}\text{Ca},X)$ at RIKEN.

[2002LuZT](#): $\text{Ta}(^{48}\text{Ca},X)$ at GANIL.

^{35}Na decay measurements:

[2022Cr03](#): $^9\text{Be}(^{48}\text{Ca},X)$ at FRIB. Measured $T_{1/2}$.

[2013StZY](#): $^9\text{Be}(^{48}\text{Ca},X)$ at RIKEN. Measured $T_{1/2}$ and β^- -delayed γ rays.

[1983La12](#),[1984La03](#): Ir(p,X) at CERN. Measured $T_{1/2}$ and β^- -delayed neutrons.

^{35}Na mass measurements: None.

Theoretical calculations (binding energies, deformation, quadrupole moments, radii, levels, J, π , mass, $T_{1/2}$, etc.): [2024Lu06](#),
[2023Zh15](#), [2023Ba27](#), [2022Ot01](#), [2020Ch21](#), [2020Ts03](#), [2013Li39](#), [2013Sh05](#), [2009Ly01](#), [2004Ge02](#), [2004Lu10](#), [2002Sa08](#),
[1997Mo25](#), [1991Pa19](#), [1991Pa21](#), [1989Ly01](#), [1987SaZQ](#), [1985Ly02](#), [1975Ca27](#).

 ^{35}Na LevelsCross Reference (XREF) Flags

A $^9\text{Be}(^{48}\text{Ca},^{35}\text{Na})$
 B $\text{C}(^{36}\text{Mg},^{35}\text{Na}\gamma)$

E(level)	J π [†]	T _{1/2}	XREF	Comments
0.0 [‡]	(3/2 ⁺)	2.1 ms 4	AB	$\% \beta^- = 100$; $\% \beta^- n > 0$; $\% \beta^- 2n = ?$; $\% \beta^- 3n = ?$; $\% \beta^- 4n = ?$ ^{35}Na β^- -delayed neutrons have been observed by 1983La12 . Experimental $\% \beta^- n$ values are unknown. Theoretical $\% \beta^- 0n = 1.4$, $\% \beta^- 1n = 73.5$, $\% \beta^- 2n = 20.1$, $\% \beta^- 3n = 4.8$ (2021Mi17). Theoretical $\% \beta^- 0n = 14.0$, $\% \beta^- 1n = 73.0$, $\% \beta^- 2n = 10.0$, $\% \beta^- 3n = 3.0$ (2019Mo01). $T_{1/2}$: weighted average of 2.4 ms 3 (stat) 2 (syst) (2022Cr03 , implant- β correlation), 2.4 ms 3 (stat) 6 (syst) (2013StZY , implant- β correlation), and 1.5 ms 5 (1983La12 , 1984La03 , decay curve of βn -coin).
373 [‡] 5	(5/2 ⁺)		B	
1014 [‡] 17	(7/2 ⁺)		B	

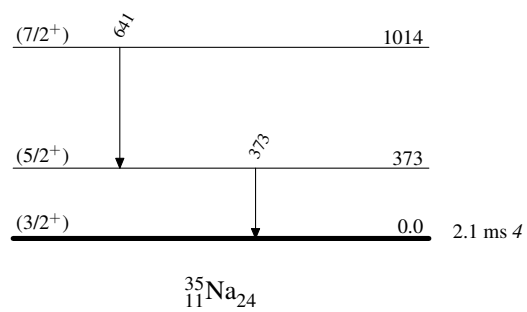
[†] From Monte-Carlo shell-model calculations using the SPDF-M effective interaction ([2014Do05](#)).

[‡] Band(A): $K^\pi = (3/2^+)$ rotational band predicted by the shell model ([2014Do05](#)).

 $\gamma(^{35}\text{Na})$

E _i (level)	J π _i	E γ [†]	E _f	J π _f
373	(5/2 ⁺)	373 5	0.0	(3/2 ⁺)
1014	(7/2 ⁺)	641 16	373	(5/2 ⁺)

[†] From $\text{C}(^{36}\text{Mg},^{35}\text{Na}\gamma)$.

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Band(A): $K^\pi=(3/2^+)$
 rotational band
 predicted by the shell
 model (2014Do05)

(7/2⁺) 1014

641

(5/2⁺) 373

373

(3/2⁺) 0.0

$^{35}_{11}\text{Na}_{24}$