

$^{29}\text{Na} \beta^- \text{n} \text{ decay}$ [1987Ba46](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 114, 1189 (2013)	1-Apr-2013

Parent: ^{29}Na : $E=0.0$; $J^\pi=3/2^+$; $T_{1/2}=44.1 \text{ ms}$ 9; $Q(\beta^- \text{n})=9627 \text{ eV}$; $\% \beta^- \text{n} \text{ decay}=21.5 \text{ } 30$

Other: [1984Gu19](#).

[1987Ba46](#): ^{29}Na was produced by bombarding a uranium carbide target with a proton beam, $E=600 \text{ MeV}$, from the CERN synchrocyclotron; Na atoms were ionized and mass separated; a thin cylindrical β detector, an HPGe, 2 BaF₂ detectors, 2 plastic scintillators for neutron detection; Measured: E_γ , I_γ , $\beta^- \gamma$ coin, $\gamma\gamma$ coin, neutron energy by time-of-flight, intensity of neutron emission.

 ^{28}Mg Levels

$E(\text{level})^\dagger$	$J^\pi^\ddagger$	$T_{1/2}^\ddagger$
0.0	0^+	20.915 h 9
1474.04 20	2^+	
3864.0 6	0^+	
4555.1 11	2^+	
4559.0 11	1^+	

† From a least-squares fit to γ -ray energies.

‡ From Adopted Levels.

 $\gamma(^{28}\text{Mg})$

$E_\gamma^\dagger$	$I_\gamma^\dagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π
1474.0 2	18.4 10	1474.04	2^+	0.0	0^+
2389.8 5	0.6 1	3864.0	0^+	1474.04	2^+
3080.9 10	0.17 5	4555.1	2^+	1474.04	2^+
3084.8 10	0.15 4	4559.0	1^+	1474.04	2^+

† From [1987Ba46](#). I_γ : relative to $I_\gamma(2560.2\gamma)=100$ in ^{29}Mg .

Delayed Neutrons (^{28}Mg)

$E(n)$	$E(^{28}\text{Mg})$	$I(n)^\dagger^\ddagger$	$E(^{29}\text{Mg})$	$E(n)$	$E(^{28}\text{Mg})$	$I(n)^\dagger^\ddagger$	$E(^{29}\text{Mg})$
110	1474.04	1.4 3	5370	1555	0.0	3.5 7	5370
185	0.0	7.1 12	3970	1700 10	0.0	12.9 25	5540
339	0.0	6.2 10	4130	≈ 1950	0.0	4.1 8	5800
376	1474.04	3.5 7	5644	2250 10	0.0	11.9 21	6110
512	0.0	6.2 10	4280	2570 20	1474.04	5.1 9	7920
808	1474.04	1.3 3	6090	2760 20	0.0	5.1 9	6640
1050	1474.04	2.1 4	6340	≈ 3100	0.0	3.8 7	7000
1103	1474.04	1.6 3	6400	3480 40	0.0	3.0 5	7385
1190	1474.04	0.9 1	6490	3770 40	0.0	4.4 8	7685
1371	1474.04	1.0 1	6680	4130 20	0.0	15.0 25	8060

† $I(n)$ is deduced by the evaluator from data reported in [1987Ba46](#) to obtain $\Sigma I(n)=100$.

‡ For absolute intensity per 100 decays, multiply by 0.215 30.

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Decay Scheme

 γ Intensities: Relative I_γ

I(n) Intensities: Relative I(n)

