

^{26}Al ε decay (7.17×10^5 y) [1972Sa02](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia and A. M. Hurst		NDS 134,1 (2016)	1-Feb-2016

Parent: ^{26}Al : $E=0.0$; $J^\pi=5^+$; $T_{1/2}=7.17 \times 10^5$ y 24; $Q(\varepsilon)=4004.14$ 6; $\% \varepsilon + \% \beta^+$ decay=100

^{26}Al was a solution of $\text{Al}(\text{NO}_3)_3$ with a nominal activity of $0.045 \mu\text{Ci}$ evaporated to dryness as Al_2O_3 ; The powder residue was mounted on a plastic disk; Ge(Li) detector; Measured E_γ , I_γ ; Deduced decay scheme.

 ^{26}Mg Levels

$E(\text{level})^\dagger$	J^π	$T_{1/2}$
0.0	0^+	stable
1808.72 7	2^+	476 fs 12
2938.41 13	2^+	141 fs 8

† From γ -ray energy.

 ε, β^+ radiations

From $I(\gamma+\text{ce})$ intensity balance at each level.

$E(\text{decay})$	$E(\text{level})$	$I\beta^+^\dagger$	$I\varepsilon^\dagger$	$\text{Log } ft$	$I(\varepsilon + \beta^+)^\dagger$	Comments
(1065.73 14)	2938.41		2.74 20	14.59 ^{2u} 4	2.74 20	$\varepsilon\text{K}=0.9146$; $\varepsilon\text{L}=0.08028$; $\varepsilon\text{M}+=0.005160$
(2195.42 9)	1808.72	81.73 21	15.51 13	15.721 ^{2u} 15	97.24 20	av $E\beta=543.29$; $\varepsilon\text{K}=0.1459$; $\varepsilon\text{L}=0.01274$; $\varepsilon\text{M}+=0.0008202$

† Absolute intensity per 100 decays.

 $\gamma(^{26}\text{Mg})$

I_γ normalization: From sum of $I(\gamma+\text{ce})$ (to g.s.)=100% (ε feeding to g.s. is not expected, $\Delta J=5$).

$E_\gamma^\dagger$	$I_\gamma^{\dagger\#}$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	δ	$\alpha^\ddagger$	Comments
1129.67 10	2.5 2	2938.41	2^+	1808.72	2^+	M1+E2	-0.12 2	1.255×10^{-5} 18	$\alpha(\text{K})=1.037 \times 10^{-5}$ 15; $\alpha(\text{L})=6.66 \times 10^{-7}$ 10; $\alpha(\text{M})=2.47 \times 10^{-8}$ 4 $\alpha(\text{IPF})=1.488 \times 10^{-6}$ 22
1808.65 7	99.76 4	1808.72	2^+	0.0	0^+	E2		2.28×10^{-4}	$\alpha(\text{K})=5.29 \times 10^{-6}$ 8; $\alpha(\text{L})=3.40 \times 10^{-7}$ 5; $\alpha(\text{M})=1.259 \times 10^{-8}$ 18 $\alpha(\text{IPF})=0.000222$ 4
2938	0.24 4	2938.41	2^+	0.0	0^+	E2		7.60×10^{-4}	$\alpha(\text{K})=2.29 \times 10^{-6}$ 4; $\alpha(\text{L})=1.473 \times 10^{-7}$ 21; $\alpha(\text{M})=5.46 \times 10^{-9}$ 8 $\alpha(\text{IPF})=0.000758$ 11

† From [1972Sa02](#).

‡ [Additional information 1](#).

$^\#$ Absolute intensity per 100 decays.

²⁶Al ε decay (7.17×10⁵ y) 1972Sa02

Decay Scheme

Intensities: I_(γ+ce) per 100 parent decays

