

^{86}Y ε decay (47.4 min) 1972Si11

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Alexandru Negret, Balraj Singh		NDS 124, 1 (2015)	30-Nov-2014

Parent: ^{86}Y : E=218.3 2; $J^\pi=(8^+)$; $T_{1/2}=47.4$ min 4; $Q(\varepsilon)=5240$ 14; $\% \varepsilon + \% \beta^+$ decay=0.69 4

^{86}Y -Q(ε): From 2012Wa38.

^{86}Y -E, J^π , $T_{1/2}$: From Adopted Levels of ^{86}Y .

^{86}Y - $\% \varepsilon + \% \beta^+$ decay: deduced from $I_\gamma(98.6\gamma)/I_\gamma(208.2\gamma)$ in ^{86}Y =0.0035 2.

1972Si11: $^{86\text{m}}\text{Y}$ produced by means of the $^{87}\text{Sr}(p,2n)$ reaction at $E_p=24$ MeV using enriched (93.3%) targets. Measured E_γ , I_γ , $\gamma\gamma$, $T_{1/2}$ using and x-ray spectrometer (FWHM=0.85 keV at 200 keV) and a Ge(Li) detector (FWHM=2.4 keV at 1.33 MeV).

^{86}Y (48 min) decays primarily (99.3%) through IT decay.

1962Ki04: measured $T_{1/2}$ and IT transitions.

 ^{86}Sr Levels

E(level)	J^π [†]	$T_{1/2}$ [†]	Comments
0.0	0 ⁺		
1076.6 3	2 ⁺		
2229.7 5	4 ⁺		
2856.9 5	6 ⁺		
2955.5 5	8 ⁺	0.455 μs 7	%IT=100

[†] From Adopted Levels.

 ε, β^+ radiations

E(decay)	E(level)	I_{β^+} [†]	I_ε [†]	Log ft	$I(\varepsilon + \beta^+)$ [†]	Comments
(2503 14)	2955.5	0.44 3	0.25 2	6.82 3	0.69 4	av $E_\beta=652.1$ 64; $\varepsilon\text{K}=0.323$ 7; $\varepsilon\text{L}=0.0379$ 8; $\varepsilon\text{M}+=0.00827$ 16

[†] Absolute intensity per 100 decays.

 $\gamma(^{86}\text{Sr})$

E_γ	I_γ ^{†‡}	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	$\alpha^\#$	$I_{(\gamma+ce)}$ [‡]	Comments
98.6 1	48 5	2955.5	8 ⁺	2856.9	6 ⁺	(E2)	1.072	100 10	ce(K)/($\gamma+ce$)=0.433 4; ce(L)/($\gamma+ce$)=0.0708 11; ce(M)/($\gamma+ce$)=0.01193 20; ce(N+)/($\gamma+ce$)=0.001430 24 ce(N)/($\gamma+ce$)=0.001375 23; ce(O)/($\gamma+ce$)=5.50 $\times 10^{-5}$ 9 Mult.: From Adopted Gammas. I_γ : from $I(\gamma+ce)$ and α . $I_{(\gamma+ce)}$: from intensity balance at 2856.9 level.
627.2 2	100 10	2856.9	6 ⁺	2229.7	4 ⁺				
1076.6 3	100 10	1076.6	2 ⁺	0.0	0 ⁺				$\alpha(\text{K})=0.00043$
1153.1 3	100 10	2229.7	4 ⁺	1076.6	2 ⁺				$\alpha(\text{K})=0.00037$

[†] Coincidence intensities were observed to be equal to within 10%.

[‡] For absolute intensity per 100 decays, multiply by 0.0069 4.

[#] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ -ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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Decay Scheme

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

