

^{86}Y IT decay (47.4 min) 2010Ru07,1972Si11,1962Ki04

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

Parent: ^{86}Y : E=218.30 23; $J^\pi=(8^+)$; $T_{1/2}=47.4$ min 4; %IT decay=99.31 4

^{86}Y -%IT decay: from $I\gamma(98.6\gamma, ^{86}\text{Sr})/I\gamma(208.1\gamma)=0.0035$ 2 ([1972Si11](#)).

^{86}Y isomer also decays by ϵ decay.

[2010Ru07](#): measured half-life from decay curve of 218γ .

[1962Ki04](#): ^{86}Y produced through the $^{85}\text{Rb}(\alpha,3n)$ and $^{86}\text{Sr}(d,2n)$ reactions. Gammas were measured using one NaI(Tl) scintillator and the conversion electrons were examined using magnetic spectrometers.

[1972Si11](#): The isomeric state in ^{86}Y was excited through the $^{87}\text{Sr}(p,2n)$ reaction at 24 MeV on enriched targets. Measured $E\gamma$ and $\gamma\gamma$ coin. using an x-ray spectrometer and a Ge(Li) detector.

Other: [1961Ha17](#).

 ^{86}Y Levels

E(level)	J^π [†]	$T_{1/2}$	Comments
0.0	4^-		
208.10 20	$(5)^-$		
218.30 23	(8^+)	47.4 min 4	$T_{1/2}$: from Adopted Levels.

[†] From Adopted Levels.

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

E_γ [†]	E_i (level)	J_i^π	E_f	J_f^π	Mult.	δ	$a^\#$	$I_{(\gamma+ce)} \frac{\ddagger}{\ddagger}$	Comments
10.2 1	218.30	(8^+)	208.10	$(5)^-$	(E3)		2.26×10^6 15	100	$ce(L)/(y+ce)=0.82$ 4; $ce(M)/(y+ce)=0.161$ 14 $ce(N)/(y+ce)=0.0173$ 16; $ce(O)/(y+ce)=2.6 \times 10^{-6}$ 3 $\alpha(L)=1.86 \times 10^6$ 12; $\alpha(M)=3.64 \times 10^5$ 24; $\alpha(N)=3.91 \times 10^4$ 25; $\alpha(O)=5.9$ 5
208.1 2	208.10	$(5)^-$	0.0	4^-	E2(+M1)	1.5 +11-5	0.059 10	100	Mult.: $\alpha(L3)\exp/\alpha(L2)\exp=1.5$ 5 (1962Ki04) consistent with E1, E2, E3; not with M1, M2 or M3. However, B(E1)(W.u.) and B(E2)(W.u.) are unreasonably small. $ce(K)/(y+ce)=0.048$ 8; $ce(L)/(y+ce)=0.0062$ 11; $ce(M)/(y+ce)=0.00105$ 18 $ce(N)/(y+ce)=0.000137$ 23; $ce(O)/(y+ce)=7.9 \times 10^{-6}$ 12 $\alpha(K)=0.051$ 8; $\alpha(L)=0.0065$ 12; $\alpha(M)=0.00112$ 19; $\alpha(N)=0.000145$ 25; $\alpha(O)=8.4 \times 10^{-6}$ 13 $\alpha(K)\exp/\alpha(L1)\exp/\alpha(M1)\exp=100:8.3:1.7$ (1962Ki04). Mult., δ : from $\alpha(K)\exp=0.051$ 10, average of 0.067 11 (1977LaZN), 0.04 1

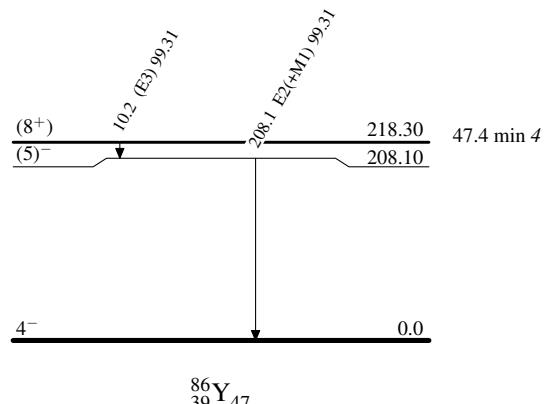
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^{86}Y IT decay (47.4 min) 2010Ru07,1972Si11,1962Ki04 (continued) $\gamma(^{86}\text{Y})$ (continued)

E_γ^\dagger	E_i (level)	Comments
	(1962Ki04), and 0.05 I (deduced from $\alpha(\text{exp})=0.06$ I of 1961Ha17).	

[†] Weighted average from 1972Si11 and 1962Ki04.[‡] For absolute intensity per 100 decays, multiply by 0.9931 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. ^{86}Y IT decay (47.4 min) 2010Ru07,1972Si11,1962Ki04Decay Scheme

%IT=99.31 4

 $^{86}_{39}\text{Y}_{47}$