^{90}Y IT decay (3.19 h) 1974Kl06,1973Ha18

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, E. A. Mccutchan	NDS 165, 1 (2020)	1-Mar-2020

Parent: ^{90}Y: E=682.01 *5*; $J^\pi=7^+$; $T_{1/2}$=3.19 h *6*; %IT decay=99.9982 *2*

1978Ra05: ^{90}Y activity from ^{87}Rb(α,n). Measured Iγ. Ge(Li) detector.

1974Kl06: ^{90}Y activity from ^{89}Y(n,γ), ^{89}Y(d,p). Measured Iγ, $\gamma\gamma$ coin, $\gamma\gamma$(t), $\gamma\gamma(\theta)$. Plastic scintillators, Ge(Li) and NaI detectors.

1973Ha18: Measured Eγ, Iγ. Ge(Li) and Si detectors (1973Ha18).

See also: 1989Mu15, 1990Mu11, 1990Ne08.

Others: 1961He09, 1961Ha17, 1970Si21.

α: Additional information 1.

^{90}Y Levels

E(level)†	J^π†	$T_{1/2}$	Comments
0	2^-	64.05 h *5*	$T_{1/2}$: from the Adopted Levels.
202.53 *3*	3^-	250 ps *7*	g=−0.283 *23* g: from IPAC (1974Kl06). $T_{1/2}$: from 1974Kl06, delayed coin. Other: 180 ps *30* (1970Si21).
682.01 *5*	7^+	3.19 h *6*	%IT=99.9982 *2*; %β^-=0.0018 *2* E(level),$T_{1/2}$: from the Adopted Levels. %β^-: from measured Iγ(2319γ)/Iγ(479.5γ)=1.89×10^{-5} *18* (1976Gr16).

† From the Adopted Levels.

$\gamma(^{90}Y)$

Iγ normalization: From ΣI(γ+ce)(to g.s.)=99.9982 *2*.

E_γ†	I_γ#	E_i(level)	J_i^π	E_f	J_f^π	Mult.‡	δ‡	α	Comments
202.53 *3*	106.8 *4*	202.53	3^-	0	2^-	M1(+E2)	−0.04 *4*	0.0273 *5*	α(K)=0.0240 *4*; α(L)=0.00272 *5*; α(M)=0.000465 *9*; α(N)=6.25×10^{-5} *11*; α(O)=4.30×10^{-6} *7* I_γ: from Iγ(202γ)/Iγ(479γ)=1.072 *4* (1973Ha18). See comment on 479γ for derivation of Iγ(479γ). δ: From α(K)exp=0.0243 *14* and 479.5γ-202.5γ correlation with A_2=−0.178 *5* and A_4=0.009 *8* (1973Ha18).
479.51 *5*	99.65 *3*	682.01	7^+	202.53	3^-	M4(+E5)	<0.1	0.0965	α(K)=0.0825 *12*; α(L)=0.01162 *17*; α(M)=0.00202 *3*; α(N)=0.000267 *4*; α(O)=1.642×10^{-5} *23* I_γ: from Iγ(682γ)/Iγ(479γ)=0.0035 *3* (1978Ra05). Other: 0.0040 *8* (1974Kl06). δ: From B(E5)(W.u.)<300. α: α(exp)=0.101 *4* from intensity balance, using α(202)=0.0273 *3* and measured Iγ(202γ)/Iγ(479γ)=1.072 *4* (1973Ha18).
681.8 *6*	0.35 *3*	682.01	7^+	0	2^-	E5		0.0226	α(K)=0.0191 *3*; α(L)=0.00293 *5*;

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^{90}Y IT decay (3.19 h) 1974Kl06,1973Ha18 (continued)

γ(^{90}Y) (continued)

E_γ [†]	E_i(level)	Comments
		α(M)=0.000507 *8*; α(N)=6.50×10^{-5} *10*; α(O)=3.38×10^{-6} *5* E_γ: from 1978Ra05. I_γ: from Iγ(682γ)/Iγ(479γ)=0.0035 *3* (1978Ra05). Other: 0.0040 *8* (1974Kl06).

† From 1973Ha18, except as noted.
‡ From the Adopted Gammas. For cases where multipolarity and δ were determined in this dataset, support is given in the comments.
# For absolute intensity per 100 decays, multiply by 0.908 *3*.

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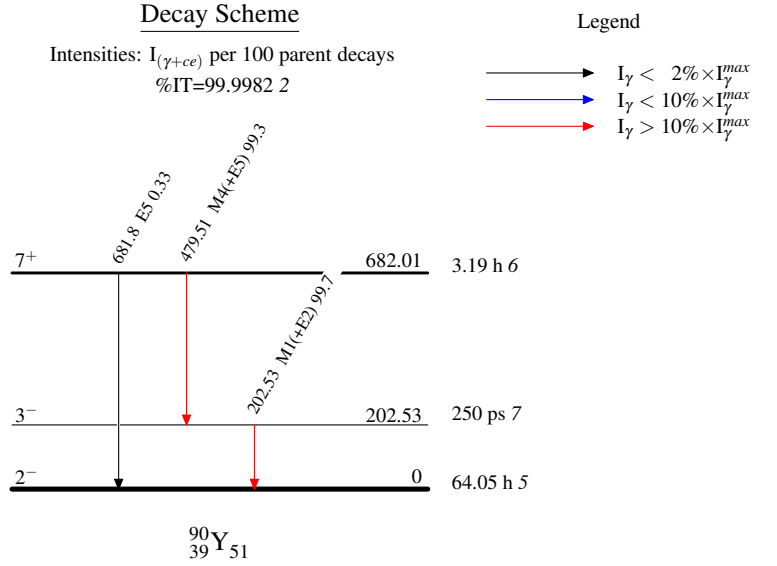
Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
%IT=99.9982 *2*



$^{90}_{39}Y_{51}$