

**<sup>187</sup>Pb ε decay (15.2 s) 1981Mi12**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 110, 999 (2009)	1-Nov-2008

Parent: <sup>187</sup>Pb: E=0.0; J<sup>π</sup>=(3/2<sup>-</sup>); T<sub>1/2</sub>=15.2 s 3; Q(ε)=7464 12; %ε+%β<sup>+</sup> decay=88 2

The decay scheme is based on that of 1981Mi12.

<sup>187</sup>Tl Levels

E(level) <sup>†</sup>	J <sup>π</sup> <sup>‡</sup>
0.0	(1/2 <sup>+</sup> )
299.33 25	(3/2 <sup>+</sup> )
747.87 25	(5/2 <sup>+</sup> )

<sup>†</sup> From least-squares adjustment of E<sub>γ</sub>.

<sup>‡</sup> From Adopted Levels.

γ(<sup>187</sup>Tl)

E <sub>γ</sub> <sup>†</sup>	I <sub>γ</sub> <sup>‡</sup>	E <sub>i</sub> (level)	J <sub>i</sub> <sup>π</sup>	E <sub>f</sub>	J <sub>f</sub> <sup>π</sup>	Mult.	δ	α <sup>@</sup>	Comments
299.5 3	1500 75	299.33	(3/2 <sup>+</sup> )	0.0	(1/2 <sup>+</sup> )	M1+E2	2.0 +5-3	0.168 18	α(K)=0.116 17; α(L)=0.0392 14; α(M)=0.0098 3; α(N+..)=0.00293 9 α(N)=0.00245 7; α(O)=0.000447 16; α(P)=2.85×10 <sup>-5</sup> 24 I <sub>γ</sub> : a major part of the observed intensity is due to feeding from the 9/2 <sup>-</sup> isomer in <sup>187</sup> Tl, which was also created by the <sup>142</sup> Nd+ <sup>48</sup> Ti reaction that was utilized to produce the <sup>187</sup> Pb source. Mult.,δ: From adopted gammas. Coincident with K x ray, 448.7γ, 511.0γ (1981Mi12).
<sup>x</sup> 309.4 <sup>#</sup> 3 448.7 3	20 1 20 1	747.87	(5/2 <sup>+</sup> )	299.33	(3/2 <sup>+</sup> )	[M1,E2]		0.08 5	α(K)=0.07 5; α(L)=0.013 5; α(M)=0.0032 11; α(N+..)=0.0010 4 α(N)=0.0008 3; α(O)=0.00015 6; α(P)=1.3×10 <sup>-5</sup> 7
<sup>x</sup> 493.6 <sup>#</sup> 3 <sup>x</sup> 617.2 <sup>#</sup> 3 <sup>x</sup> 645.4 <sup>#</sup> 3 747.7 3	40 2 40 2 15.0 8 15.0 8	747.87	(5/2 <sup>+</sup> )	0.0	(1/2 <sup>+</sup> )	[E2]		0.01141	α(K)=0.00884 13; α(L)=0.00195 3; α(M)=0.000470 7; α(N+..)=0.0001422 20 α(N)=0.0001182 17; α(O)=2.22×10 <sup>-5</sup> 4; α(P)=1.751×10 <sup>-6</sup> 25
<sup>x</sup> 865.8 <sup>#</sup> 3	<10								

Continued on next page (footnotes at end of table)

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**$^{187}\text{Pb}$   $\varepsilon$  decay (15.2 s)    [1981Mi12](#) (continued)**

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$\gamma(^{187}\text{Tl})$  (continued)

† From measurements by [1981Mi12](#) (semi).

‡ Relative photon intensity measured by [1981Mi12](#).

# Half-lives were not determined for these unplaced gammas; therefore, they could not be assigned to a specific isomer's decay.

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

<sup>x</sup>  $\gamma$  ray not placed in level scheme.

$^{187}\text{Pb}$   $\epsilon$  decay (15.2 s) 1981Mi12

## Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- Coincidence

## Decay Scheme

Intensities: Relative  $I_\gamma$ 