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

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

Parent:  $^{187}$ Pb: E=0.0;  $J^{\pi}$ =(3/2<sup>-</sup>);  $T_{1/2}$ =15.2 s 3;  $Q(\varepsilon)$ =7464 12;  $\%\varepsilon+\%\beta^+$  decay=88 2 The decay scheme is based on that of 1981Mi12.

## <sup>187</sup>Tl Levels

E(level)<sup>†</sup>  $\frac{J^{\pi^{\ddagger}}}{0.0}$   $\frac{1}{(1/2^{+})}$  299.33 25  $\frac{1}{(3/2^{+})}$  747.87 25  $\frac{1}{(5/2^{+})}$ 

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

$\frac{\gamma(100,11)}{2}$									
$\mathrm{E}_{\gamma}{}^{\dagger}$	${\rm I}_{\gamma}^{ \ddagger}$	$E_i$ (level)	$\mathbf{J}_i^{\pi}$	$\mathbf{E}_f$	$\mathbf{J}_f^{\pi}$	Mult.	δ	$\alpha^{@}$	Comments
299.5 3	1500 75	299.33	(3/2+)	0.0	(1/2+)	M1+E2	2.0 +5-3	0.168 18	$\alpha(K)$ =0.116 $17$ ; $\alpha(L)$ =0.0392 $14$ ; $\alpha(M)$ =0.0098 $3$ ; $\alpha(N+)$ =0.00293 $9$ $\alpha(N)$ =0.00245 $7$ ; $\alpha(O)$ =0.000447 $16$ ; $\alpha(P)$ =2.85×10 <sup>-5</sup> $24$ $I_{\gamma}$ : a major part of the observed intensity is due to feeding from the $9/2^-$ isomer in $^{187}$ TI, which was also created by the $^{142}$ Nd+ $^{48}$ Ti reaction that was utilized to produce the $^{187}$ Pb source.  Mult., $\delta$ : From adopted gammas. Coincident with K x ray, $^{448.7}\gamma$ , 511.0 $\gamma$ (1981Mi12).
*309.4# 3 448.7 3 *493.6# 3 *617.2# 3	20 <i>I</i> 20 <i>I</i> 40 2 40 2	747.87	(5/2+)	299.33	(3/2+)	[M1,E2]		0.08 5	$\alpha(K)$ =0.07 5; $\alpha(L)$ =0.013 5; $\alpha(M)$ =0.0032 11; $\alpha(N+)$ =0.0010 4 $\alpha(N)$ =0.0008 3; $\alpha(O)$ =0.00015 6; $\alpha(P)$ =1.3×10 <sup>-5</sup> 7
*645.4 <sup>#</sup> 3 747.7 3  *865.8 <sup>#</sup> 3	15.0 8 15.0 8	747.87	(5/2+)	0.0	(1/2+)	[E2]		0.01141	$\alpha(K)=0.00884 \ 13;$ $\alpha(L)=0.00195 \ 3;$ $\alpha(M)=0.000470 \ 7;$ $\alpha(N+)=0.0001422 \ 20$ $\alpha(N)=0.0001182 \ 17;$ $\alpha(O)=2.22\times10^{-5} \ 4;$ $\alpha(P)=1.751\times10^{-6} \ 25$

 $<sup>^{\</sup>dagger}$  From least-squares adjustment of E $\gamma$ .

<sup>‡</sup> From Adopted Levels.

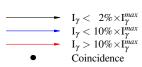
#### <sup>187</sup>Pb $\varepsilon$ decay (15.2 s) 1981Mi12 (continued)

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

- $^{\dagger}$  From measurements by 1981Mi12 (semi).
- <sup>‡</sup> 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.
- <sup>@</sup> Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on  $\gamma$ -ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
- $^{x}$   $\gamma$  ray not placed in level scheme.

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#### Legend



## Decay Scheme

Intensities: Relative  $I_{\gamma}$ 

