

${}^{46}\text{V}$ β^+ decay [1994Ha43](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. -c. Wu	NDS 91, 1 (2000)	15-Jul-2000

Parent: ${}^{46}\text{V}$: $E=0.0$; $J^\pi=0^+$; $T_{1/2}=422.50$ ms *11*; $Q(\beta^+)=7051.4$ *10*; $\% \beta^+$ decay=100.0

${}^{46}\text{V}$ produced by (p,n); $E(p)=17$ MeV; 96.8% enriched ${}^{46}\text{Ti}$ target; on-line isotope separator; 4 π gas proportional counter; HPGe detector ([1994Ha43](#)).

Others: [1972Zi02](#), [1965Fr08](#), [1958Ge33](#), [1956Le46](#), [1954Ty33](#), [1952Ma55](#).

For analysis of superallowed 0^+ to 0^+ β^- -transitions, see [1990Ha13](#).

 ${}^{46}\text{Ti}$ Levels

E(level) [†]	J^π [†]	$T_{1/2}$ [†]
0.0	0^+	
889.286 <i>3</i>	2^+	5.17 ps <i>20</i>
2611.0 <i>2</i>	0^+	76 fs <i>21</i>
4315.8 <i>10</i>	1^+	2.7 fs <i>4</i>

[†] From adopted level.

 ϵ, β^+ radiations

E(decay)	E(level)	$I\beta^+$ [†]	$I\epsilon$ [†]	Log ft	$I(\epsilon + \beta^+)$ [†]	Comments
(2735.6 <i>14</i>)	4315.8	0.0108	0.000469	5.0	0.0113	av $E\beta=743.3$ <i>7</i> ; $\epsilon K=0.03705$ <i>9</i> ; $\epsilon L=0.003767$ <i>10</i> ; $\epsilon M+=0.00065$
(4440.4 <i>10</i>)	2611.0	0.0039 <i>4</i>	2.1×10^{-5} <i>2</i>	6.76 <i>5</i>	0.0039 <i>4</i>	av $E\beta=1546.9$ <i>5</i> ; $\epsilon K=0.004743$; $\epsilon L=0.0004817$; $\epsilon M+=8.294 \times 10^{-5}$
(7051.4 <i>10</i>)	0.0	99.886 <i>3</i>	0.0986 <i>10</i>	3.4845 <i>4</i>	99.985 <i>3</i>	av $E\beta=2817.4$ <i>5</i> ; $\epsilon K=0.0008810$; $\epsilon L=8.941 \times 10^{-5}$; $\epsilon M+=1.540 \times 10^{-5}$ $\Delta I\beta$: assumes 3% uncertainty in theoretical β^+/ϵ ratio. $ft=3088.6$ s <i>43</i> ; compared by 1984KoZH with other superallowed β^+ decays. $E\beta=6042$ <i>12</i> , from measurement with lens spectrometer, helical baffle, scintillation detector (1961Mi13); value is from later work at Princeton University quoted in 1978LeZA .

[†] Absolute intensity per 100 decays.

 $\gamma({}^{46}\text{Ti})$

E_γ	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π
889	0.0039 <i>4</i>	889.286	2^+	0.0	0^+
1722	0.0039 <i>4</i>	2611.0	0^+	889.286	2^+
4317	0.0113	4315.8	1^+	0.0	0^+

[†] Absolute intensity per 100 decays.

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

Legend

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

