^{51}Ti β^- decay 1976BeXW,1974HeYW,1969Ha46

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Wang Jimin and Huang Xiaolong	NDS 144, 1 (2017)	1-Mar-2016

Parent: ^{51}Ti: E=0.0; $J^\pi=3/2^-$; $T_{1/2}$=5.76 min *1*; Q(β^-)=2471.0 *6*; %β^- decay=100.0
Others: 1970Si21, 1962We06, 1955Bu01.
Source generally produced by ^{50}Ti(n,γ) and ^{51}V(n,p).
1974HeYW: Eγ, Iγ measured with Ge(Li).
1976BeXW: $\beta\gamma$ and $\gamma\gamma$ coin measured. Deduced $T_{1/2}$.
1969Ha46: Eγ, Iγ, $\gamma\gamma$ coin, and $\gamma\gamma(\theta)$ measured with Ge(Li) and NaI. Deduced levels.

^{51}V Levels

For $\beta\gamma$(t) measurement see 1970Si21, 1976BeXW and 1962We06.
For $\gamma\gamma$(t) measurement see 1976BeXW and 1958Su54.

E(level)[†]	J^π[‡]	$T_{1/2}$[#]
0.0	$7/2^-$	stable
320.077 *6*	$5/2^-$	184 ps *6*
928.63 *4*	$3/2^-$	8.7 ps *8*

† From decay scheme and Eγ's, using least-squares fit to data.
‡ From Adopted Levels.
# From Adopted Levels.

β^- radiations

For β Fermi plot measurement see 1955Bu01 and 1955Ma01.
For $\beta\gamma$ measurement see 1955Bu01, 1976BeXW and 1970Si21.

E(decay)	E(level)	Iβ^-[†‡]	Log *ft*	Comments
(1542.4 *6*)	928.63	8.1 *4*	5.355 *22*	av Eβ=608.99 *28*
(2150.9 *6*)	320.077	91.9 *4*	4.8979 *21*	av Eβ=890.55 *29*

† From intensity imbalance at each level.
‡ Absolute intensity per 100 decays.

$\gamma(^{51}V)$

Iγ normalization: Based on ΣIγ(to g.s.)=100.
For $\gamma\gamma(\theta)$ measurement see 1969Ha46 and 1963Ro15.
For $\gamma\gamma$ measurement see 1969Ha46, 1963Ro15 and 1976BeXW.

E_γ[†]	I_γ[‡@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[&]	Comments
320.076 *6*	100	320.077	$5/2^-$	0.0	$7/2^-$	M1+E2	+0.47 *3*	0.00188	α(K)=0.00168; α(L)=0.00016
608.55 *5*	1.27 *10*	928.63	$3/2^-$	320.077	$5/2^-$	M1+E2	+6.8 *8*	0.00054	α(K)=0.00048 $\gamma(\theta)$: A_2=0.075 *24*, A_4=−0.029 *28*

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^{51}Ti β^- decay 1976BeXW,1974HeYW,1969Ha46 (continued)

$\gamma(^{51}V)$ (continued)

E_γ [†]	I_γ [‡@]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [#]	Comments
							(1969Ha46); A_2=0.013 *30*, A_4=−0.03 *5* (1963Ro15).
928.63 *6*	7.4 *4*	928.63	3/2−	0.0	7/2−	E2	α(K)=0.00015

[†] From 1974HeYW.
[‡] Relative photon intensities normalized to Iγ(320γ)=100 (1974HeYW).
[#] From adopted γ radiations. δ phase convention of 1970Kr03.
[@] For absolute intensity per 100 decays, multiply by 0.931 *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.

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Decay Scheme

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