

$^{63}\text{Fe} \beta^-$ decay 1985Ru05

Type	Author	Citation	History	Literature Cutoff Date
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Parent: ^{63}Fe : $E=0.0$; $J^\pi=(5/2^-)$; $T_{1/2}=6.1$ s 6; $Q(\beta^-)=6.06 \times 10^3$ 19; $\% \beta^-$ decay=100.0

^{63}Fe from $\text{W}(^{82}\text{Se}, \text{X})$, $E=11.5$ MeV/U, E_γ , I_γ , $\beta\gamma$, $\gamma\gamma$ coincidence.

 ^{63}Co Levels

E(level)	$J^\pi^\dagger$
0.0	$(7/2)^-$
994.92 15	$(3/2)^-$
1427.14 16	$(7/2^-, 5/2^-)$
1494.73 21	$(3/2^-)$
1576.9 3	
1888.6 4	$3/2^-, 1/2^-$
2793.9 3	
3422.0 11	$7/2^-, 5/2^-$

† From Adopted Levels.

 β^- radiations

$I\beta(\text{g.s.})$: from comparison of β singles and $\beta\gamma$ coin spectra (1985Ru05). The evaluator assigns an uncertainty of 34% based on value given by the same group in 1983Ru06.

E(decay)	E(level)	$I\beta^-^\dagger$	Log ft	Comments
(2.64×10^3) 19	3422.0	0.2 3	6.6 7	av $E\beta=1397$ 29
(3.27×10^3) 19	2793.9	1.2 17	6.2 7	av $E\beta=1699$ 29
(4.17×10^3) 19	1888.6	0.3 4	7.2 6	av $E\beta=2138$ 30
(4.48×10^3) 19	1576.9	0.2 4	7.5 9	av $E\beta=2290$ 30
(4.57×10^3) 19	1494.73	0.08 16	7.9 9	av $E\beta=2330$ 30
(4.63×10^3) 19	1427.14	5 7	6.2 6	av $E\beta=2363$ 30
(5.07×10^3) 19	994.92	13 17	5.9 6	av $E\beta=2574$ 30
(6.06×10^3) 19	0.0	80 27	5.4 2	av $E\beta=3059$ 30

† Absolute intensity per 100 decays.

 $\gamma(^{63}\text{Co})$

I_γ normalization: from $\Sigma I_\gamma(\text{to g.s.})=100-I\beta^-(\text{g.s.})$. $I\beta^-(\text{g.s.})=80\%$ 27 (1985Ru05).

E_γ	$I_\gamma^\dagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π
149.7 4	0.22 5	1576.9		1427.14	$(7/2^-, 5/2^-)$
$^x357.2$ 2	0.5 1				
$^x368.6$ 3	1.0 1				
$^x417.6$ 5	0.5 1				
432.1 2	4.4 2	1427.14	$(7/2^-, 5/2^-)$	994.92	$(3/2)^-$
461.3 5	0.7 2	1888.6	$3/2^-, 1/2^-$	1427.14	$(7/2^-, 5/2^-)$
499.6 3	1.4 2	1494.73	$(3/2^-)$	994.92	$(3/2)^-$

Continued on next page (footnotes at end of table)

^{63}Fe β^- decay 1985Ru05 (continued) $\gamma(^{63}\text{Co})$ (continued)

E_γ	$I_\gamma^\dagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π
582.0 3	1.5 2	1576.9		994.92	(3/2) ⁻
893.8 5	1.3 3	1888.6	3/2 ⁻ , 1/2 ⁻	994.92	(3/2) ⁻
994.8 2	100 3	994.92	(3/2) ⁻	0.0	(7/2) ⁻
^x 1100.5 5	0.9 2				
1299.0 2	8.8 6	2793.9		1494.73	(3/2) ⁻
1427.2 2	33 3	1427.14	(7/2 ⁻ , 5/2 ⁻)	0.0	(7/2) ⁻
1494.6 3	8.0 5	1494.73	(3/2 ⁻)	0.0	(7/2) ⁻
^x 1543.0 5	1.4 3				
1799.3 5	2.5 4	2793.9		994.92	(3/2) ⁻
^x 2154 1	3.9 5				
2427 1	1.5 4	3422.0	7/2 ⁻ , 5/2 ⁻	994.92	(3/2) ⁻
2796 1	0.8 3	2793.9		0.0	(7/2) ⁻

[†] For absolute intensity per 100 decays, multiply by 0.14 19.

^x γ ray not placed in level scheme.

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Decay Scheme

Intensities: I_γ per 100 parent decays

Legend

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

