

$^{84}\text{Se} \beta^-$ decay [1975Hu02,1970Ei02,1968Re12](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	B. Singh	NDS 110,2815 (2009)	30-Sep-2009

Parent: ^{84}Se : $E=0$; $J^\pi=0^+$; $T_{1/2}=3.26$ min 10; $Q(\beta^-)=1863$ 15; $\% \beta^-$ decay=100.0

$^{84}\text{Se}-Q(\beta^-)$: from [2009AuZZ](#). Other: 1848 20 ([2003Au03](#)).

[1975Hu02](#): fast chemical separation of Se from fission products, measured E_γ .

[1970Ei02](#) (also [1968EiZY](#)): mass separation ([1970Ei02](#)) and fast chemical separation. Measured E_γ , $\beta\gamma(t)$.

[1968Re12](#): chemical separation of Se from fission products, measured $\beta\gamma$.

[1960Sa05](#): fast chemical separation of Se from fission products, measured E_β , E_γ , half-life using scintillation detectors.

The feeding of the 320-keV, 6^- isomer is determined to be $\leq 2\%$, in accordance with the high degree of forbiddenness ([1975Hu02](#)).

[Additional information 1](#).

 ^{84}Br Levels

E(level)	$J^\pi^\dagger$	$T_{1/2}$	Comments
0	2^-		
408.2 4	1^+	<0.14 μs	J^π : $\log ft=4.0$ from 0^+ . $T_{1/2}$: from $\beta\gamma(t)$ (1970Ei02).

† From Adopted Levels.

 β^- radiations

E(decay)	E(level)	$I\beta^-^\dagger$	Log ft	Comments
(1455 15)	408.2	100	4.04 4	av $E_\beta=540$ 12
(1863 ‡ 15)	0	<0.1	>8.5 1u	av $E_\beta=739$ 13

† Absolute intensity per 100 decays.

‡ Existence of this branch is questionable.

 $\gamma(^{84}\text{Br})$

I_γ normalization: $I\beta(g.s.)<0.10$ from $\log f^{1u}_t>8.5$. I_γ normalization=0.977 if the 498.5 γ deexcites to the g.s..

E_γ	$I_\gamma^\dagger$	$E_i(\text{level})$	J^π_i	E_f	J^π_f	Comments
408.2 4	100	408.2	1^+	0	2^-	E_γ : weighted average of 1975Hu02 and 1968Re12 .
x 498.5 6	2.4 8					E_γ : γ from 1975Hu02 only.

† Absolute intensity per 100 decays.

x γ ray not placed in level scheme.

$^{84}\text{Se} \beta^-$ decay 1975Hu02,1970Ei02,1968Re12

Decay Scheme

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

Legend

