

^{240}U β^- decay **1981Hs02**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. Morse	NDS 206,359 (2025)	27-Sep-2024

Parent: ^{240}U : $E=0$; $J^\pi=0^+$; $T_{1/2}=14.1$ h I ; $Q(\beta^-)=399$ $I7$; $\% \beta^-$ decay=100

^{240}U - $Q(\beta^-)$: From **2021Wa16**.

1981Hs02: measured E_γ , I_γ , $T_{1/2}$; radiochemical separation.

Others: **1959Bu20**, **1953Kn23**.

Due to the unknown multipolarities for most γ rays in ^{240}Np , which drastically affect the conversion coefficients, it is the evaluator's opinion that β feeding and $\log ft$ values cannot be reliably calculated given the present data.

 ^{240}Np Levels

$E(\text{level})^{\dagger\#}$	$J^\pi^{\ddagger}$	$E(\text{level})^{\dagger\#}$	$E(\text{level})^{\dagger\#}$	$J^\pi^{\ddagger}$	$E(\text{level})^{\dagger\#}$	$J^\pi^{\ddagger}$
0	(5^+)	x+61.42? $I1$	x+111.65? $I7$		x+294.8? 3	($0^-,1$)
x	(1^+)	x+82.60? $I0$	x+189.68 8	($0^-,1$)	x+299.80 $I5$	($0^-,1$)
x+44.20 8	($1^+,2^+$)	x+110.73? 9	x+280.02? 9	($0^-,1$)		

† From least-squares fit to E_γ 's.

‡ From Adopted Levels.

$^{\#}$ x $\approx$ 20 (**1981Hs02**).

 $\gamma(^{240}\text{Np})$

I_γ normalization: Based on absolute intensity per 100 ^{244}Pu α decays (**1981Hs02**).

E_γ	$I_\gamma^{\ddagger}$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	δ	$\alpha^\dagger$	Comments
(17.2 I) 44.1 I	1.05 5	x+61.42? x+44.20	($1^+,2^+$)	x+44.20	($1^+,2^+$)	M1(+E2)	0.13	67.0 $I1$	E_γ : From $\Delta E(\text{level})$. $\alpha(L)=50.2$ 8 ; $\alpha(M)=12.49$ 20 ; $\alpha(N)=3.39$ 5 ; $\alpha(O)=0.826$ $I3$; $\alpha(P)=0.1556$ 25 ; $\alpha(Q)=0.01022$ $I6$ Mult., δ : from ce data of 1959Bu20 . Mixing ratio calculated by evaluator using BriceMixing code with L2/L1=0.25 as input. L1/L2/L3=4/1/<0.5 (1959Bu20).
49.1 2	0.007 2	x+110.73?		x+61.42?					
50.3 2	0.005 I	x+111.65?		x+61.42?					
66.5 I	0.154 5	x+110.73?		x+44.20	($1^+,2^+$)				
78.1 2	0.004 I	x+189.68	($0^-,1$)	x+111.65?					
82.6 I	0.014 I	x+82.60?							
128.3 I	0.087 2	x+189.68	($0^-,1$)	x+61.42?					
145.4 I	0.081 2	x+189.68	($0^-,1$)	x+44.20	($1^+,2^+$)				
x 167.3 2	0.008 I								
169.2 I	0.115 8	x+280.02?	($0^-,1$)	x+110.73?					
189.7 I	0.24 I	x+189.68	($0^-,1$)						
x 203.9 2	0.005 I								
212.3 5	0.0015 3	x+294.8?	($0^-,1$)	x+82.60?					
255.6 2	0.0040 3	x+299.80	($0^-,1$)	x+44.20	($1^+,2^+$)				
280.1 I	0.016 I	x+280.02?	($0^-,1$)						
294.8 3	0.0019 4	x+294.8?	($0^-,1$)						
299.8 2	0.013 I	x+299.80	($0^-,1$)						

Continued on next page (footnotes at end of table)

$^{240}\text{U} \beta^-$ decay **1981Hs02 (continued)**

$\gamma(^{240}\text{Np})$ (continued)

[†] [Additional information 1.](#)
[‡] Absolute intensity per 100 decays.
^x γ ray not placed in level scheme.

$^{240}\text{U} \beta^- \text{ decay} \quad 1981\text{Hs02}$

Decay Scheme

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

Legend

- $\longrightarrow$ $I_\gamma < 2\% \times I_\gamma^{max}$
- $\longrightarrow$ $I_\gamma < 10\% \times I_\gamma^{max}$
- $\longrightarrow$ $I_\gamma > 10\% \times I_\gamma^{max}$
- $\cdots\cdots\cdots\longrightarrow$ γ Decay (Uncertain)

