

**Adopted Levels, Gammas**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 192,1 (2023)	1-Aug-2023

Q(β<sup>-</sup>)=-10130 30; S(n)=10512 9; S(p)=2466 8; Q(α)=7043.4 21 [2021Wa16](#)

<sup>200</sup>Rn Levels

Cross Reference (XREF) Flags

- A <sup>204</sup>Ra α decay
- B (HI,xny)

E(level) <sup>†</sup>	J <sup>π</sup> <sup>‡</sup>	T <sub>1/2</sub>	XREF	Comments
0.0 <sup>#</sup>	0 <sup>+</sup>	1.03 s 3	AB	%α=86 +14-4; %ε+%β <sup>+</sup> =14 +4-14 %α: From <a href="#">1993Wa04</a> . %ε+%β <sup>+</sup> was not directly measured. T <sub>1/2</sub> : Weighted average of 0.96 s 3 ( <a href="#">1996Ta18</a> ), 1.06 s 7 and 1.06 s 2 ( <a href="#">1984Ca32</a> ) and 1.0 s 2 ( <a href="#">1971Ho01</a> ). Others: 1.4 s +1.4-0.5 ( <a href="#">2010He25</a> ), 1.1 s +6-3 ( <a href="#">2005Uu02</a> ), 0.65 s +28-15 ( <a href="#">1996Le09</a> ) and 3 s 1 ( <a href="#">1965Nu04</a> ). Eα=6874 keV 16 ( <a href="#">2015We13</a> ); 6903 keV 6 ( <a href="#">2005Uu02</a> ); 6901 keV 2 ( <a href="#">1996Ta18</a> ); 6898 keV 10 ( <a href="#">1996Le09</a> ); 6902.4 keV 25 ( <a href="#">1993Wa04</a> ); ≈6902 (Iα=100), 6355 keV 6 (Iα=8.1×10 <sup>-3</sup> 7) and 6454 keV 14 (Iα=6×10 <sup>-3</sup> 2) ( <a href="#">1995Bi17</a> ); 6900 keV 10 ( <a href="#">1984Ca32</a> ); 6909 keV 8 ( <a href="#">1971Ho01</a> ); 6768 keV 5 ( <a href="#">1965Nu04</a> ).
432.60 <sup>#</sup> 20	2 <sup>+</sup>		B	J <sup>π</sup> : 432.6γ (E2) to 0 <sup>+</sup> ; band member.
936.3 <sup>#</sup> 3	4 <sup>+</sup>		B	J <sup>π</sup> : 503.7γ (E2) to 2 <sup>+</sup> ; band member.
1500.6 4	(6 <sup>+</sup> )		B	J <sup>π</sup> : 564.3γ (E2) to 4 <sup>+</sup> .
1776.3 4	(6 <sup>+</sup> )		B	J <sup>π</sup> : 840.0γ (E2) to 4 <sup>+</sup> .
2033.6 4	(8 <sup>+</sup> )		B	J <sup>π</sup> : 257.3γ (E2) to (6 <sup>+</sup> ).
2114.0 4	(8 <sup>+</sup> )		B	J <sup>π</sup> : 613.4γ (E2) to (6 <sup>+</sup> ).
2300.5 5	(9)		B	J <sup>π</sup> : 266.9γ D to (8 <sup>+</sup> ).
2300.5+x 5		25 μs +11-6	B	<a href="#">Additional information 1</a> . E(level): From the measured delayed γ-ray intensities, <a href="#">2002Do19</a> concludes that the isomer feeds the 2300.5-keV and 2033.6-keV levels. T <sub>1/2</sub> : From time differences between the implanted recoils and delayed E <sub>γ</sub> observed at the focal plane. Only events correlated with Eα( <sup>200</sup> Rn) were considered.
2554.1? 5			B	
2776.2? 6			B	

<sup>†</sup> From a least-squares fit to E<sub>γ</sub>.

<sup>‡</sup> From deduced γ-ray transition multiplicities in (HI,xny), unless otherwise stated.

<sup>#</sup> Band(A): K<sup>π</sup>=0<sup>+</sup>, ground state rotational band.

γ(<sup>200</sup>Rn)

E <sub>i</sub> (level)	J <sup>π</sup> <sub>i</sub>	E <sub>γ</sub> <sup>†</sup>	I <sub>γ</sub> <sup>†</sup>	E <sub>f</sub>	J <sup>π</sup> <sub>f</sub>	Mult. <sup>‡</sup>
432.60	2 <sup>+</sup>	432.6 2	100	0.0	0 <sup>+</sup>	(E2)
936.3	4 <sup>+</sup>	503.7 2	100	432.60	2 <sup>+</sup>	(E2)
1500.6	(6 <sup>+</sup> )	564.3 2	100	936.3	4 <sup>+</sup>	(E2)
1776.3	(6 <sup>+</sup> )	840.0 2	100	936.3	4 <sup>+</sup>	(E2)
2033.6	(8 <sup>+</sup> )	257.3 2	100	1776.3	(6 <sup>+</sup> )	(E2)

Continued on next page (footnotes at end of table)

**Adopted Levels, Gammas (continued)**

$\gamma(^{200}\text{Rn})$  (continued)

$E_i(\text{level})$	$J_i^\pi$	$E_\gamma^\dagger$	$I_\gamma^\dagger$	$E_f$	$J_f^\pi$	Mult. $^\ddagger$	Comments
2114.0	(8 <sup>+</sup> )	613.4	2	1500.6	(6 <sup>+</sup> )	(E2)	Mult.: $\gamma(\theta)$ in (HI,xn $\gamma$ ) (2002Do19) indicates D; parity cannot be unambiguously determined.
2300.5	(9)	266.9	2	2033.6	(8 <sup>+</sup> )	D	
2554.1?		440.1 <sup>#</sup>	3	2114.0	(8 <sup>+</sup> )		
2776.2?		222.1 <sup>#</sup>	3	2554.1?			

<sup>†</sup> From (HI,xn $\gamma$ ) (2002Do19).

<sup>‡</sup> From three points  $\gamma(\theta)$  in (HI,xn $\gamma$ ) (2002Do19), unless otherwise stated.

<sup>#</sup> Placement of transition in the level scheme is uncertain.

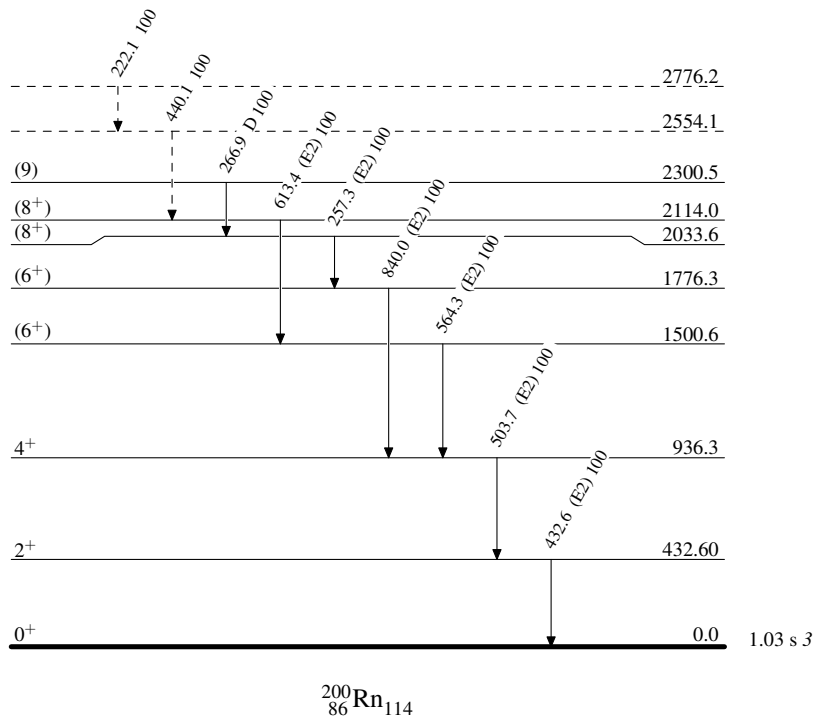
**Adopted Levels, Gammas**

Legend

Level Scheme

Intensities: Relative photon branching from each level

-----  $\rightarrow$   $\gamma$  Decay (Uncertain)



**Adopted Levels, Gammas****Band(A):  $K^\pi=0^+$ , ground  
state rotational band**4<sup>+</sup>      936.3

504

2<sup>+</sup>      432.60

433

0<sup>+</sup>      0.0 $^{200}_{86}\text{Rn}_{114}$