

$^{209}\text{Rn}$        $Z = 86$        $N = 123$       adopted link      ENSDF link

Based on ENSDF from Oct 2022, and mass evaluation from 2020

BE = 1628.565 ( 0.010) MeV

Qbeta+ = 3.943 ( 0.011) MeV

	Energy T	J+	J-	J-other	T1/2
-----					
S-alpha=	-6.156 ( 0.014)				
209RN 1			0.000	5/2-	1 28.8 M 10
209RN 2			0.110	1/2-	2
209RN 3			0.215	3/2-	3
209RN 4			0.328	3/2-	4
209RN 5				0.382 (3/2-)	5
209RN 6				0.511 (1/2,3/2,5/2)-	6
209RN 7				0.547 (7/2-)	7
209RN 8				0.653 (5/2-)	8
209RN 9				0.690 (1/2-,3/2-)	9
209RN 10			0.798	9/2-	10
-----					
209RN 11				0.868 (7/2,9/2-)	11
209RN 12				1.021	12
209RN 13	1.174	13/2+			13 13.4 US 13
209RN 14				1.327 (5/2-,7/2,9/2-)	14
209RN 15				1.353	15
209RN 16				1.383	16
209RN 17				1.388	17
209RN 18			1.466	13/2-	18
209RN 19			1.562	15/2-	19
209RN 20				1.588	20
-----					
209RN 21			1.611	17/2-	21
209RN 22			1.687	19/2-	22 0.69 NS 21
209RN 23				1.767	23
209RN 24				1.931	24
209RN 25			2.238	21/2-	25
209RN 26	2.419	21/2+			26 8.73 NS 21
209RN 27			2.501	23/2-	27
209RN 28				2.744 (23/2)+	28
209RN 29			2.849	25/2-	29
209RN 30				2.865	30
-----					
209RN 31			2.958	27/2-	31
209RN 32				3.050	32
209RN 33			3.158	29/2-	33 13.9 NS 21
209RN 34				3.401	34
209RN 35				3.540 (27/2)+	35
209RN 36	3.637	35/2+			36 3.0 US 3

209RN	37				3.671	(29/2)+	37
S-p	=	3.760	( 0.013)	-----			
209RN	38				3.987	(31/2)+	38
209RN	39				4.182	(33/2)+	39
209RN	40				4.584	(35/2)+	40
-----							
209RN	41		4.834	41/2-			41 10.0 NS 4
209RN	42				4.988	(37/2)+	42
209RN	43		5.217	41/2+			43
209RN	44		5.820	43/2+			44
S-2p	=	6.373	( 0.012)	-----			
209RN	45		6.538	47/2+			45
209RN	46		6.772	49/2+			46
209RN	47		6.826	49/2+			47
209RN	48				7.308	51/2	48

S-p = 3.760 ( 0.013)-----  
 S-n = 7.357 ( 0.014)-----  
 S-2p = 6.373 ( 0.012)-----  
 S-2n = 16.449 ( 0.011)-----  
 S-alpha= -6.156 ( 0.014)-----

S+p = -1.692 ( 0.017)  
 S+n = -8.735 ( 0.011)  
 S+2p = -4.805 ( 0.011)  
 S+2n = -15.957 ( 0.012)  
 S+alpha = 6.862 ( 0.014)

gap p = 2.068 ( 0.021)  
 gap n = -1.378 ( 0.018)  
 gap 2p = 1.568 ( 0.016)  
 gap 2n = 0.492 ( 0.016)  
 gap alpha = 0.706 ( 0.020)