

^{224}Ra $Z = 88$ $N = 136$ [link to full NNDC output](#)

Based on ENSDF from Dec 2018, and mass evaluation from 2016

BE = 1720.302 (0.002) MeV

	Energy T	J+	J-	J-other	T1/2

S-alpha=	-5.789	(0.003)	-----		
224RA 1	0.000	0+			1 3.6319 D 23
224RA 2	0.084	2+			2 0.748 NS 19
224RA 3			0.216	1-	3
224RA 4	0.251	4+			4 0.181 NS 9
224RA 5			0.290	3-	5
224RA 6				0.433 (5)-	6
224RA 7	0.479	6+			7 52.7 PS 42
224RA 8				0.641 (7-)	8
224RA 9	0.755	8+			9 20.8 PS +49-55
224RA 10				0.906 (9-)	10

224RA 11	0.916	0+			11
224RA 12	0.966	2+			12
224RA 13				0.993 (2+)	13
224RA 14			1.053	1-	14
224RA 15	1.069	10+			15
224RA 16				1.090 (2,3)-	16
224RA 17				1.187 0+,1,2	17
224RA 18				1.217 (1-,2)	18
224RA 19				1.221 (11-)	19
224RA 20	1.223	0+			20

224RA 21				1.348 2+,3+	21
224RA 22			1.378	1-	22
224RA 23				1.379 (1+,2+)	23
224RA 24				1.390 (0+,1,2)	24
224RA 25				1.414 (12+)	25
224RA 26				1.425 (0,1,2)-	26
224RA 27			1.436	1-	27
224RA 28	1.437	2+			28
224RA 29				1.554 1,2+	29
224RA 30				1.574 (13-)	30

224RA 31				1.614 (1-,2)	31
224RA 32				1.627	32
224RA 33	1.652	2+			33
224RA 34				1.658 1(-),2+	34
224RA 35				1.736 1,2+	35
224RA 36				1.755 0+,1,2	36
224RA 37				1.761	37

224RA 38				1.788	(14+)	38
224RA 39				1.790	1,2+	39
224RA 40				1.797	(1-,2)	40

224RA 41				1.818	(1-,2)	41
224RA 42				1.839	0,1,2	42
224RA 43				1.896	(1-,2)	43
224RA 44				1.949		44
224RA 45				1.965	(15-)	45
224RA 46				1.970	(0,1,2)	46
224RA 47				2.000	(1-,2)	47
224RA 48				2.043	0,1,2	48
224RA 49		2.052	2+			49
224RA 50				2.077	0+,1,2	50

224RA 51				2.117	1,2+	51
224RA 52				2.135	0,1,2	52
224RA 53				2.188	(16+)	53
224RA 54				2.229	(1-,2)	54
224RA 55				2.247	1,2+	55
224RA 56				2.369	1,2+	56
224RA 57				2.384	(17-)	57
224RA 58				2.612	(18+)	58
224RA 59				2.827	(19-)	59
224RA 60				3.059	(20+)	60

224RA 61				3.290	(21-)	61
224RA 62				3.526	(22+)	62
224RA 63				3.770	(23-)	63
224RA 64				4.011	(24+)	64
224RA 65				4.266	(25-)	65
224RA 66				4.512	(26+)	66
224RA 67				4.778	(27-)	67
224RA 68				5.030	(28+)	68

S-p	=	6.845	(0.003)	-----		
S-n	=	6.479	(0.003)	-----		
S-2p	=	12.124	(0.003)	-----		
S-2n	=	11.637	(0.005)	-----		
S-alpha	=	-5.789	(0.003)	-----		
S+p	=	-4.478	(0.005)			
S+n	=	-4.904	(0.003)			
S+2p	=	-10.206	(0.005)			
S+2n	=	-11.301	(0.003)			
S+alpha	=	5.520	(0.003)			
gap p	=	2.368	(0.006)			
gap n	=	1.574	(0.004)			

gap 2p = 1.918 (0.006)
gap 2n = 0.336 (0.006)
gap alpha = -0.269 (0.004)