

$^{99}\text{Zr}$        $Z = 40$        $N = 59$       adopted link      ENSDF link

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

BE = 845.383 ( 0.011) MeV

Qbeta- = 4.719 ( 0.016) MeV

	Energy T	J+	J-	J-other	T1/2	
99ZR	1			0.000 (1/2+)	1	2.1 S 1
99ZR	2			0.122 (3/2+)	2	1.07 NS 3
99ZR	3			0.252 (7/2+)	3	293 NS 10
99ZR	4			0.576 (3/2+)	4	0.33 NS 2
99ZR	5			0.614 (3/2-)	5	7.0 NS 9
99ZR	6			0.658 (3/2+)	6	
99ZR	7			0.667 (5/2-)	7	2.6 NS 14
99ZR	8			0.679 (7/2-)	8	8.9 NS 12
99ZR	9			0.725 (3/2+,5/2+)	9	
99ZR	10			0.762 (3/2+,5/2+)	10	
99ZR	11			0.782 (3/2+)	11	
99ZR	12			0.822 (11/2-)	12	
99ZR	13			0.850 (5/2+)	13	
99ZR	14			0.852 (5/2+)	14	0.04 NS 1
99ZR	15			0.868 (9/2-)	15	
99ZR	16			0.885	16	
99ZR	17			0.959	17	
99ZR	18			1.005	18	
99ZR	19			1.038 (9/2+)	19	54 NS 10
99ZR	20			1.051	20	
99ZR	21			1.065 (3/2+)	21	
99ZR	22			1.066 (7/2+)	22	
99ZR	23			1.079 (3/2+,5/2+)	23	
99ZR	24			1.090 (13/2-)	24	
99ZR	25			1.146	25	
99ZR	26			1.154	26	
99ZR	27			1.230	27	
99ZR	28			1.237 (15/2-)	28	
99ZR	29			1.256 (11/2+)	29	
99ZR	30			1.277	30	
99ZR	31			1.280 (13/2-)	31	
99ZR	32			1.323 (9/2+)	32	
99ZR	33			1.327	33	
99ZR	34			1.433	34	
99ZR	35			1.445	35	
99ZR	36			1.507 (13/2+)	36	
99ZR	37			1.586 (11/2+)	37	

99ZR 38				1.588		38
99ZR 39				1.670		39
99ZR 40				1.700		40
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99ZR 41				1.716		41
99ZR 42				1.791	(15/2+)	42
99ZR 43				1.803	(19/2-)	43 5.43 PS 74
99ZR 44				1.834		44
99ZR 45				1.883	(17/2-)	45
99ZR 46				1.893	(13/2+)	46
99ZR 47				1.925		47
99ZR 48				2.079		48
99ZR 49				2.105	(17/2+)	49
99ZR 50				2.210	(15/2+)	50
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99ZR 51				2.297		51
99ZR 52				2.401	(3/2+,5/2+)	52
99ZR 53				2.447	(19/2+)	53
99ZR 54				2.448		54
99ZR 55				2.484		55
99ZR 56				2.517	(23/2-)	56 1.59 PS 22
99ZR 57				2.557	(17/2+)	57
99ZR 58				2.658	(21/2-)	58
99ZR 59				2.817	(21/2+)	59
99ZR 60				2.936	(19/2+)	60
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99ZR 61				3.215	(23/2+)	61
99ZR 62				3.302	(21/2+)	62
99ZR 63				3.361	(27/2-)	63
99ZR 64				3.583	(25/2-)	64
99ZR 65				3.639	(25/2+)	65
99ZR 66				3.755	(23/2+)	66
99ZR 67				4.090	(27/2+)	67
99ZR 68				4.135	(25/2+)	68
99ZR 69				4.321	(31/2-)	69
S-n =	4.406	(	0.013)	-----		
99ZR 70				4.628	(29/2-)	70
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S-alpha=	4.924	(	0.012)	-----		
99ZR 71				5.042	(29/2+)	71
99ZR 72				5.392	(35/2-)	72
99ZR 73				5.734	(33/2-)	73
99ZR 74				6.567	(39/2-)	74
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S-p =	12.617	(	0.013)	-----		
S-n =	4.406	(	0.013)	-----		
S-2p =	23.614	(	0.011)	-----		
S-2n =	10.823	(	0.011)	-----		
S-alpha=	4.924	(	0.012)	-----		

S+p = -9.464 ( 0.013)  
S+n = -6.827 ( 0.013)  
S+2p = -20.481 ( 0.011)  
S+2n = -11.687 ( 0.013)  
S+alpha = -5.763 ( 0.014)

gap p = 3.153 ( 0.019)  
gap n = -2.421 ( 0.019)  
gap 2p = 3.133 ( 0.015)  
gap 2n = -0.864 ( 0.017)  
gap alpha = -0.839 ( 0.018)