

^{165}Hf $Z = 72$ $N = 93$ adopted link ENSDF link

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

BE = 1327.074 (0.028) MeV

Qbeta+ = 4.807 (0.039) MeV

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

S-alpha=	-3.774	(0.032)	-----		
165HF	1			0.000 (5/2-)	1 76 S 4
165HF	2			0.076 (7/2-)	2
165HF	3			0.094 (7/2-)	3
165HF	4			0.119 (13/2+)	4
165HF	5			0.218 (9/2-)	5
165HF	6			0.334 (17/2+)	6
165HF	7			0.531 (13/2-)	7
165HF	8			0.531 (15/2+)	8
165HF	9			0.715 (21/2+)	9
165HF	10			0.938 (19/2+)	10

165HF	11			0.954 (17/2-)	11
165HF	12			1.224 (25/2+)	12
165HF	13			1.436 (21/2-)	13
165HF	14			1.467 (23/2+)	14
165HF	15			1.732 (23/2-)	15
165HF	16			1.825 (29/2+)	16
165HF	17			1.861 (23/2-)	17
165HF	18			1.873 (25/2-)	18
165HF	19			2.017 (25/2-)	19
165HF	20			2.067 (27/2-)	20

165HF	21			2.074 (27/2+)	21
165HF	22			2.313 (27/2-)	22
165HF	23			2.338 (29/2-)	23
165HF	24			2.423 (29/2-)	24
165HF	25			2.471 (31/2-)	25
165HF	26			2.485 (33/2+)	26
165HF	27			2.728 (31/2+)	27
165HF	28			2.758 (31/2-)	28
165HF	29			2.840 (33/2-)	29
165HF	30			2.870 (33/2-)	30

165HF	31			2.960 (35/2-)	31
165HF	32			3.167 (37/2+)	32
165HF	33			3.263 (35/2-)	33
165HF	34			3.362 (37/2-)	34
165HF	35			3.404 (35/2+)	35
165HF	36			3.455 (37/2-)	36

165HF	37				3.553	(37/2+)	37
165HF	38				3.559	(39/2-)	38
165HF	39				3.842	(41/2+)	39
165HF	40				3.849	(39/2-)	40

165HF	41				3.988	(41/2-)	41
165HF	42				4.111	(41/2-)	42
165HF	43				4.167	(41/2+)	43
165HF	44				4.276	(43/2-)	44
S-p	=	4.282	(0.040)	-----		
165HF	45				4.513	(43/2-)	45
165HF	46				4.532	(45/2+)	46
165HF	47				4.717	(45/2-)	47
165HF	48				4.832	(45/2-)	48
165HF	49				4.860	(45/2+)	49
165HF	50				5.086	(47/2-)	50

165HF	51				5.258	(47/2-)	51
165HF	52				5.272	(49/2+)	52
165HF	53				5.535	(49/2-)	53
165HF	54				5.603	(49/2+)	54
165HF	55				5.614	(49/2-)	55
165HF	56				5.930	(51/2-)	56
165HF	57				6.079	(53/2+)	57
165HF	58				6.087	(51/2-)	58
165HF	59				6.392	(53/2-)	59
165HF	60				6.410	(53/2+)	60

165HF	61				6.484	(53/2-)	61
165HF	62				6.779	(55/2-)	62
S-2p	=	6.920	(0.032)	-----		
165HF	63				6.961	(57/2+)	63
165HF	64				7.269	(57/2+)	64
165HF	65				7.271	(57/2-)	65
165HF	66				7.419	(57/2-)	66
165HF	67				7.666	(59/2-)	67
S-n	=	7.888	(0.032)	-----		
165HF	68				7.913	(61/2+)	68
165HF	69				8.183	(61/2+)	69
165HF	70				8.198	(61/2-)	70

165HF	71				8.603	(63/2-)	71
165HF	72				8.882	(65/2+)	72
165HF	73				9.176	(65/2+)	73
165HF	74				9.177	(65/2-)	74
165HF	75				9.584	(67/2-)	75
165HF	76				9.928	(69/2+)	76

S-p	=	4.282	(0.040)	-----		

S-n = 7.888 (0.032)-----
S-2p = 6.920 (0.032)-----
S-2n = 18.509 (0.038)-----
S-alpha= -3.774 (0.032)-----

S+p = -1.751 (0.040)
S+n = -10.295 (0.040)
S+2p = -5.036 (0.034)
S+2n = -17.975 (0.040)
S+alpha = 4.293 (0.032)

gap p = 2.531 (0.056)
gap n = -2.406 (0.051)
gap 2p = 1.884 (0.046)
gap 2n = 0.534 (0.055)
gap alpha = 0.519 (0.045)