

$^{142}\text{Ce}$        $Z = 58$        $N = 84$       adopted link      ENSDF link

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

BE = 1185.284 ( 0.002) MeV

	Energy T	J+	J-	J-other	T1/2
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S-alpha=	-1.304	( 0.002)	-----		
142CE 1	0.000	0+			1 5E+16 Y GT
142CE 2	0.641	2+			2 5.56 PS 12
142CE 3	1.219	4+			3 7.5 PS 7
142CE 4	1.536	2+			4 0.83 PS LT
142CE 5			1.653	3-	5 1.8 PS GT
142CE 6			1.742	5-	6
142CE 7	1.743	6+			7
142CE 8	2.005	2+			8 0.045 PS +5-4
142CE 9				2.014	9
142CE 10	2.031	0+			10 0.17 PS +15-6
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142CE 11	2.045	4+			11 0.33 PS +11-7
142CE 12	2.112	4+			12 0.37 PS +30-12
142CE 13			2.125	5-	13 0.41 PS GT
142CE 14	2.182	3+			14 0.26 PS +55-11
142CE 15			2.188	1-	15 0.011 PS 2
142CE 16	2.211	6+			16
142CE 17	2.278	4+			17 0.083 PS +49-28
142CE 18	2.330	3+			18 0.21 PS +21-8
142CE 19	2.365	2+			19 0.016 PS +3-2
142CE 20				2.375 +	20 0.69 PS GT
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142CE 21			2.384	4-	21 0.060 PS +76-28
142CE 22	2.398	1+			22 0.076 PS +21-14
142CE 23	2.540	4+			23 0.041 PS +18-12
142CE 24				2.543 1	24 0.014 PS LT
142CE 25	2.543	2+			25 0.21 PS +25-8
142CE 26	2.570	5+			26 0.12 PS +18-6
142CE 27	2.576	3+			27 0.69 PS GT
142CE 28				2.591	28
142CE 29				2.592 (7-)	29
142CE 30	2.598	2+			30 1.66 PS GT
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142CE 31				2.603 (3,2)+	31 0.24 PS +25-8
142CE 32	2.606	4+			32 0.049 PS +83-28
142CE 33	2.624	8+			33
142CE 34	2.667	1+			34 0.054 PS +24-15
142CE 35				2.681 (2,3,4)+	35 0.15 PS +15-6
142CE 36	2.697	2+			36 0.08 PS +6-3
142CE 37	2.699	4+			37 0.076 PS +21-15

142CE	38	2.715	3+					38	0.12	PS	+13-5
142CE	39	2.726	5+					39	0.049	PS	+26-16
142CE	40					2.728	2(-)	40	0.27	PS	+29-8
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142CE	41					2.735	(3,2)+	41	0.37	PS	GT
142CE	42					2.742	(2,3)+	42	0.076	PS	+28-14
142CE	43					2.768	(1,2,3)+	43	0.055	PS	+18-12
142CE	44					2.774	(3)+	44	0.69	PS	GT
142CE	45					2.785	(3,4,5)	45	0.23	PS	+63-10
142CE	46					2.793		46			
142CE	47					2.801	1(+)	47	0.010	PS	2
142CE	48	2.806	3+					48	0.10	PS	+7-3
142CE	49					2.843	(2,3)+	49	0.038	PS	+10-8
142CE	50	2.853	2+					50	0.076	PS	+42-21
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142CE	51					2.858	(8+)	51			
142CE	52					2.860	4	52	0.69	PS	GT
142CE	53					2.869	(4)+	53	0.46	PS	GT
142CE	54	2.888	3+					54	0.041	PS	+12-9
142CE	55					2.922		55			
142CE	56					2.935	(2,3,4)	56	0.48	PS	GT
142CE	57	2.956	3+					57	0.017	PS	+7-6
142CE	58					2.986		58			
142CE	59					2.994	9(-)	59			
142CE	60	2.999	1+					60	0.017	PS	+13-8
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142CE	61					3.010		61	0.69	PS	GT
142CE	62					3.012	1	62	0.016	PS	+6-4
142CE	63					3.042		63	0.18	PS	+34-8
142CE	64					3.052	(3)+	64	0.69	PS	GT
142CE	65					3.061	+	65	0.09	PS	+11-4
142CE	66					3.067		66			
142CE	67					3.090	(2,3)+	67	0.058	PS	+29-17
142CE	68					3.102		68			
142CE	69	3.106	3+					69	0.053	PS	+26-15
142CE	70					3.110		70	0.69	PS	GT
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142CE	71					3.122		71			
142CE	72					3.126	(1,2,3)	72	0.65	PS	GT
142CE	73	3.145	3+					73			
142CE	74	3.154	2+					74	0.11	PS	+15-5
142CE	75					3.155		75	0.69	PS	GT
142CE	76					3.165		76			
142CE	77					3.180	1	77	0.69	PS	GT
142CE	78	3.209	3+					78	0.043	PS	+41-18
142CE	79					3.218		79	0.69	PS	GT
142CE	80					3.229	(5-)	80			
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142CE	81					3.301		81	0.69	PS	GT
142CE	82	3.305	2+					82			

142CE 83				3.314	1	83	13.3 FS	6
142CE 84				3.381	(9+)	84		
142CE 85				3.401	1	85	13.6 FS	5
142CE 86				3.420	1-,2-	86		
142CE 87				3.424		87		
142CE 88				3.436		88		
142CE 89				3.460		89		
142CE 90				3.470		90		
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142CE 91				3.515	1	91	33 FS	+6-4
142CE 92				3.536	(10+)	92		
142CE 93		3.612	2+			93		
142CE 94				3.633	1	94	36.7 FS	21
142CE 95				3.644	1	95	15.2 FS	7
142CE 96				3.649		96		
142CE 97		3.676	1+			97		
142CE 98				3.689		98		
142CE 99				3.704		99		
142CE 100		3.718	1+			100		
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142CE 101				3.720	1	101	40.9 FS	28
142CE 102				3.732		102		
142CE 103				3.746	1	103	37.4 FS	28
142CE 104				3.777	1	104	33.3 FS	28
142CE 105				3.833	11(-)	105		
142CE 106				3.851		106	22.2 FS	21
142CE 107				3.884		107		
142CE 108				3.906	(11+)	108		
142CE 109				3.914		109		
142CE 110				3.976		110		
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142CE 111		4.043	2+			111		
142CE 112				4.046		112		
142CE 113				4.048		113		
142CE 114				4.357	(12+)	114		
142CE 115				4.605	(13-)	115		
142CE 116				4.717		116		
142CE 117				4.896	(14-)	117		
142CE 118				5.173	(15-)	118		
142CE 119				5.515	(16-)	119		
142CE 120				5.877	(17-)	120		
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142CE 121				6.528		121		
142CE 122				6.880		122		

S-p = 8.892 ( 0.005)-----  
S-n = 7.173 ( 0.003)-----  
S-2p = 15.843 ( 0.008)-----  
S-2n = 12.601 ( 0.003)-----

S-alpha= -1.304 ( 0.002)-----

S+p = -5.824 ( 0.003)

S+n = -5.145 ( 0.003)

S+2p = -13.793 ( 0.003)

S+2n = -12.041 ( 0.004)

S+alpha = 1.182 ( 0.003)

gap p = 3.068 ( 0.006)

gap n = 2.029 ( 0.004)

gap 2p = 2.050 ( 0.009)

gap 2n = 0.560 ( 0.005)

gap alpha = -0.122 ( 0.004)