

$^{20}\text{F}$        $Z = 9$        $N = 11$       adopted link      ENSDF link

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

BE = 154.403 ( 0.000) MeV

Qbeta- = 7.024 ( 0.000) MeV

	Energy T	J+	J-	J-other	T1/2	
20F 1	0.000	1 2+			1 11.07 S	6
20F 2	0.656	3+			2 305 FS	21
20F 3	0.823	4+			3 55 PS	4
20F 4			0.984 1-		4 1.36 PS	6
20F 5	1.057	1+			5 5.1 FS	11
20F 6			1.309 2-		6 1.30 PS	6
20F 7	1.824	5+			7 45 FS	LE
20F 8			1.844 2-		8 46 FS	3
20F 9				1.971 (3-)	9 0.42 PS	6
20F 10	2.044	2+			10 2.7 FS	5
20F 11				2.194 (3+)	11 2.9 FS	8
20F 12				2.865 (3-)	12 20 FS	3
20F 13	2.966	3+			13 3.6 FS	8
20F 14				2.968 (4-)	14	
20F 15				3.172 (1+)	15	
20F 16	3.488	1+			16 8.1 FS	5
20F 17	3.526	0+			17 3.8 FS	4
20F 18				3.587 (1,2)+	18 0.76 FS	4
20F 19				3.590	19	
20F 20				3.669	20	
20F 21				3.680 1,2	21 15.4 FS	16
20F 22				3.761 (2-,3+)	22	
20F 23	3.965	1+			23 4.8 FS	15
20F 24				4.082 (1)+	24 2.5 FS	5
20F 25				4.199	25	
20F 26				4.208	26	
20F 27				4.277 (1,2)+	27 5 FS	3
20F 28				4.312 (0,1)+	28 3.5 FS	4
20F 29				4.371 (2+)	29 3 FS	LT
20F 30				4.509 1+, (2+)	30	
20F 31				4.518	31	
20F 32				4.585	32	
20F 33				4.592	33	
20F 34				4.722	34	
20F 35				4.731 (3-,4,5+)	35	
20F 36				4.744	36	
20F 37				4.765	37	

20F	38				4.893			38
20F	39				4.899			39
20F	40				5.042	(2)-		40
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20F	41				5.067	(1-,2,3+)		41
20F	42				5.130	(2-,3,4+)		42
20F	43				5.226	(1,2)-	0.97 FS	76
20F	44				5.255			44
20F	45				5.283		2.3 FS	9
20F	46				5.319	0,1,2	3.4 FS	8
20F	47				5.346			47
20F	48				5.352			48
20F	49				5.407			49
20F	50				5.452			50
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20F	51				5.457			51
20F	52				5.466	(1,2,3)+		52
20F	53				5.555	1,2+	4.2 FS	10
20F	54				5.574			54
20F	55				5.588			55
20F	56				5.623			56
20F	57				5.645			57
20F	58				5.661			58
20F	59				5.710			59
20F	60				5.725			60
-----								
20F	61				5.765	(3)+		61
20F	62				5.795			62
20F	63				5.810	(1+)		63
20F	64		5.936	2-			1.4 FS	LT
20F	65				5.939			65
20F	66				5.951			66
20F	67				6.007			67
20F	68		6.018	2-			2.3 FS	8
20F	69				6.045	0,1,2		69
20F	70				6.065			70
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20F	71				6.079			71
20F	72				6.095			72
20F	73				6.111			73
20F	74				6.136			74
20F	75				6.154			75
20F	76				6.189			76
20F	77				6.213			77
20F	78				6.251			78
20F	79				6.287			79
20F	80				6.299			80
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20F	81				6.335			81
20F	82				6.355			82

20F 83				6.391		83
20F 84				6.413		84
20F 85				6.444		85
20F 86				6.458		86
20F 87				6.481		87
20F 88				6.509 2		88
20F 89		6.519 2	0+			89
20F 90				6.578		90
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S-n	=	6.601	( 0.000)	-----		
20F 91			6.627	2-		91 0.31 KEV 2
20F 92					6.643 (3,4)	92 0.08 KEV LT
20F 93			6.648	1-		93 1.59 KEV 10
20F 94			6.693	1-		94 13.8 KEV 8
20F 95					6.766 (2-,3,4+)	95 0.6 KEV LE
20F 96					6.825	96
20F 97					6.857 2	97 10 KEV 2
20F 98					6.905	98
20F 99					6.936	99
20F 100			6.968	1-		100 5 KEV 1
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20F 101			7.067	0-		101 2.4 KEV 6
20F 102					7.080 (1+)	102 24 KEV
20F 103					7.166 2(+)	103 8 KEV 1
20F 104					7.232	104
20F 105					7.283	105
20F 106					7.319 (1)	106 33 KEV
20F 107					7.370 (1)	107 19 KEV
20F 108					7.420 (2+)	108 10 KEV
20F 109					7.495 (2)	109 80 KEV
20F 110					7.655 (2+)	110 65 KEV
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20F 111					7.734	111 140 KEV
20F 112			7.843	1-		112 50 KEV 10
20F 113					7.985 1	113 14 KEV 2
20F 114		8.050 2	2+			114
20F 115					8.062	115
20F 116					8.113	116 195 KEV
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S-alpha	=	8.126	( 0.002)	-----		
20F 117					8.147	117 15 KEV
20F 118					8.268	118
20F 119					8.349	119
20F 120					8.421	120 27 KEV
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20F 121					8.500	121 140 KEV
20F 122					8.720	122 30 KEV LE
20F 123					8.770	123 76 KEV
20F 124					8.940	124 73 KEV
20F 125					9.010	125
20F 126					9.200	126

20F 127				9.520	127 110 KEV
20F 128				9.650	128 100 KEV
20F 129				9.830	129 33 KEV
20F 130				9.850	130 120 KEV
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20F 131				9.886	131
20F 132				9.900	132 30 KEV LE
20F 133				9.929	133
20F 134				9.981	134

S-p = 10.639 ( 0.003)-----  
 S-n = 6.601 ( 0.000)-----  
 S-2p = 27.709 ( 0.019)-----  
 S-2n = 17.033 ( 0.000)-----  
 S-alpha= 8.126 ( 0.002)-----

S+p = -13.003 ( 0.000)  
 S+n = -8.101 ( 0.002)  
 S+2p = -19.742 ( 0.000)  
 S+2n = -13.332 ( 0.012)  
 S+alpha = -10.825 ( 0.000)

gap p = -2.364 ( 0.003)  
 gap n = -1.500 ( 0.002)  
 gap 2p = 7.967 ( 0.019)  
 gap 2n = 3.701 ( 0.012)  
 gap alpha = -2.699 ( 0.002)