

## 1 Half-life, Q-value and Decay mode

$T_{1/2}$	:	10.0	(1)	d
$Q_\alpha$	:	5935.1	(14)	keV
$\alpha$	:	100		%

## 2 $\alpha$ Emissions

	Energy keV	Probability $\times 100$
$\alpha_{0,48}$	4903.6 (14)	0.0011 (4)
$\alpha_{0,47}$	4992.7 (14)	0.0013 (3)
$\alpha_{0,46}$	5019.3 (14)	0.00015 (5)
$\alpha_{0,45}$	5025.5 (14)	0.00083 (21)
$\alpha_{0,44}$	5035.5 (14)	0.0021 (3)
$\alpha_{0,43}$	5064.1 (14)	0.00114 (18)
$\alpha_{0,42}$	5076.8 (14)	0.0038 (19)
$\alpha_{0,41}$	5094.1 (14)	0.015 (7)
$\alpha_{0,40}$	5129.0 (14)	0.0058 (8)
$\alpha_{0,39}$	5162.1 (14)	0.00066 (12)
$\alpha_{0,38}$	5195.1 (14)	0.00015 (5)
$\alpha_{0,37}$	5203.3 (14)	0.0101 (10)
$\alpha_{0,36}$	5210.2 (14)	0.022 (1)
$\alpha_{0,35}$	5239.3 (14)	0.0026 (5)
$\alpha_{0,34}$	5269.1 (14)	0.048 (19)
$\alpha_{0,33}$	5287.6 (14)	0.214 (10)
$\alpha_{0,32}$	5321.2 (14)	0.007 (7)
$\alpha_{0,31}$	5341.9 (14)	0.0027 (8)
$\alpha_{0,30}$	5356.2 (14)	0.000097 (2)
$\alpha_{0,29}$	5379.0 (14)	0.0020 (5)
$\alpha_{0,28}$	5391.2 (14)	0.0006 (4)
$\alpha_{0,27}$	5414.5 (14)	0.0030 (4)
$\alpha_{0,26}$	5428.3 (14)	0.0023 (3)
$\alpha_{0,25}$	5430.1 (14)	0.0028 (8)
$\alpha_{0,24}$	5435.8 (14)	0.0083 (6)
$\alpha_{0,23}$	5443.3 (14)	0.098 (19)
$\alpha_{0,22}$	5468.4 (14)	0.00052 (18)
$\alpha_{0,21}$	5487.4 (14)	0.0020 (3)
$\alpha_{0,20}$	5497.4 (14)	0.0022 (7)
$\alpha_{0,19}$	5515.2 (14)	0.0052 (19)
$\alpha_{0,18}$	5523.7 (14)	0.013 (6)
$\alpha_{0,17}$	5540.1 (14)	0.0072 (8)
$\alpha_{0,16}$	5546.5 (14)	0.055 (12)
$\alpha_{0,15}$	5555.3 (14)	0.084 (10)
$\alpha_{0,14}$	5563.3 (14)	0.017 (7)
$\alpha_{0,13}$	5580.5 (14)	0.95 (4)
$\alpha_{0,12}$	5599.3 (14)	0.114 (7)
$\alpha_{0,11}$	5609.0 (14)	1.09 (5)
$\alpha_{0,10}$	5637.3 (14)	4.16 (23)
$\alpha_{0,9}$	5682.2 (14)	1.31 (4)
$\alpha_{0,8}$	5686.4 (14)	0.021 (14)

	Energy keV	Probability × 100
$\alpha_{0,7}$	5723.1 (14)	2.03 (23)
$\alpha_{0,6}$	5730.5 (14)	1.6 (3)
$\alpha_{0,5}$	5731.6 (14)	1.24 (10)
$\alpha_{0,4}$	5731.9 (17)	9.0 (5)
$\alpha_{0,3}$	5791.7 (14)	6.2 (9)
$\alpha_{0,2}$	5793.1 (21)	18.9 (20)
$\alpha_{0,1}$	5804.2 (14)	0.3
$\alpha_{0,0}$	5829.6 (14)	52.4 (24)

### 3 Electron Emissions

		Energy keV	Electrons per 100 disint.
eAL	(Fr)	5.73 - 18.52	23.8 (12)
eAK	(Fr)		0.115 (9)
	KLL	63.576 - 70.787	}
	KLX	77.720 - 86.101	}
	KXY	91.84 - 101.12	}
ec <sub>13,9</sub> K	(Fr)	2.4 (1)	0.015 (7)
ec <sub>7,0</sub> K	(Fr)	7.27 (3)	1.84 (15)
ec <sub>1,0</sub> L	(Fr)	7.39 - 11.00	7.0 (9)
ec <sub>9,3</sub> K	(Fr)	10.40 (3)	0.088 (6)
ec <sub>2,0</sub> L	(Fr)	18.06 - 21.66	14.6 (12)
ec <sub>8,1</sub> K	(Fr)	18.72 (3)	0.0191 (12)
ec <sub>3,0</sub> L	(Fr)	19.95 - 23.56	6.7 (6)
ec <sub>1,0</sub> M	(Fr)	21.38 - 23.03	1.88 (25)
ec <sub>11,6</sub> K	(Fr)	22.62 (4)	0.0192 (14)
ec <sub>11,5</sub> K	(Fr)	23.68 (3)	0.113 (7)
ec <sub>1,0</sub> N	(Fr)	24.87 - 25.77	0.49 (7)
ec <sub>9,5</sub> L	(Fr)	31.6 - 35.2	0.1080 (16)
ec <sub>2,0</sub> M	(Fr)	32.05 - 33.70	3.93 (33)
ec <sub>3,0</sub> M	(Fr)	33.94 - 35.59	1.81 (17)
ec <sub>2,0</sub> N	(Fr)	35.54 - 36.44	1.02 (9)
ec <sub>3,0</sub> N	(Fr)	37.43 - 38.33	0.474 (45)
ec <sub>6,3</sub> L	(Fr)	44.0 - 47.6	0.32 (7)
ec <sub>13,7</sub> K	(Fr)	44.04 (3)	0.0221 (14)
ec <sub>4,2</sub> L	(Fr)	44.32 - 47.92	4.04 (25)
ec <sub>9,5</sub> M	(Fr)	45.6 - 47.2	0.02914 (43)
ec <sub>6,2</sub> L	(Fr)	45.637 - 49.246	0.80 (16)
ec <sub>9,0</sub> K	(Fr)	48.93 (2)	0.0968 (22)
ec <sub>7,3</sub> L	(Fr)	51.22 - 54.82	0.166 (42)
ec <sub>13,4</sub> K	(Fr)	52.80 (3)	0.0270 (18)
ec <sub>7,2</sub> L	(Fr)	53.10 - 56.71	0.411 (41)
ec <sub>4,1</sub> L	(Fr)	54.91 - 58.52	0.52 (14)
ec <sub>5,1</sub> L	(Fr)	55.23 - 58.84	0.0562 (43)

		Energy keV	Electrons per 100 disint.
ec <sub>10,3</sub> K	(Fr)	56.12 (3)	1.12 (17)
ec <sub>6,1</sub> L	(Fr)	56.2 - 59.8	0.136 (27)
ec <sub>6,3</sub> M	(Fr)	58.0 - 59.6	0.086 (20)
ec <sub>4,2</sub> M	(Fr)	58.31 - 59.96	0.96 (6)
ec <sub>6,2</sub> M	(Fr)	59.627 - 61.277	0.207 (42)
ec <sub>11,8</sub> L	(Fr)	60.2 - 63.8	0.053 (8)
ec <sub>7,3</sub> M	(Fr)	65.21 - 66.86	0.045 (11)
ec <sub>7,2</sub> M	(Fr)	67.09 - 68.74	0.111 (11)
ec <sub>23,11</sub> K	(Fr)	68.05 (4)	0.017 (16)
ec <sub>7,3</sub> N	(Fr)	68.7 - 69.6	0.0118 (30)
ec <sub>10,7</sub> L	(Fr)	68.78 - 72.38	0.86 (6)
ec <sub>4,1</sub> M	(Fr)	68.90 - 70.55	0.142 (37)
ec <sub>5,1</sub> M	(Fr)	69.22 - 70.87	0.0136 (10)
ec <sub>6,1</sub> M	(Fr)	70.19 - 71.84	0.035 (7)
ec <sub>7,2</sub> N	(Fr)	70.58 - 71.48	0.0292 (29)
ec <sub>11,8</sub> M	(Fr)	74.2 - 75.8	0.0125 (19)
ec <sub>10,6</sub> L	(Fr)	76.3 - 79.9	0.261 (25)
ec <sub>10,5</sub> L	(Fr)	77.53 - 81.13	0.149 (46)
ec <sub>16,7</sub> K	(Fr)	78.65 (4)	0.013 (11)
ec <sub>4,0</sub> L	(Fr)	81.02 - 84.62	1.76 (13)
ec <sub>5,0</sub> L	(Fr)	81.28 - 84.88	0.088 (7)
ec <sub>6,0</sub> L	(Fr)	82.3 - 85.9	0.33 (14)
ec <sub>10,7</sub> M	(Fr)	82.77 - 84.42	0.204 (15)
ec <sub>13,9</sub> L	(Fr)	84.85 - 88.46	0.011 (6)
ec <sub>11,2</sub> K	(Fr)	86.84 (3)	0.0432 (25)
ec <sub>7,0</sub> L	(Fr)	89.8 - 93.4	0.586 (48)
ec <sub>10,6</sub> M	(Fr)	90.3 - 91.9	0.062 (6)
ec <sub>10,5</sub> M	(Fr)	91.52 - 93.17	0.040 (13)
ec <sub>9,3</sub> L	(Fr)	92.9 - 96.5	0.0191 (13)
ec <sub>10,0</sub> K	(Fr)	94.62 (3)	0.16 (9)
ec <sub>4,0</sub> M	(Fr)	95.01 - 96.66	0.426 (32)
ec <sub>5,0</sub> M	(Fr)	95.27 - 96.92	0.0212 (16)
ec <sub>6,0</sub> M	(Fr)	96.3 - 97.9	0.086 (39)
ec <sub>7,0</sub> M	(Fr)	103.8 - 105.4	0.148 (14)
ec <sub>11,5</sub> L	(Fr)	106.18 - 109.78	0.0465 (29)
ec <sub>7,0</sub> N	(Fr)	107.3 - 108.2	0.0388 (33)
ec <sub>13,2</sub> K	(Fr)	115.77 (3)	0.0186 (12)
ec <sub>11,5</sub> M	(Fr)	120.17 - 121.82	0.0119 (7)
ec <sub>9,0</sub> L	(Fr)	131.43 - 135.04	0.01940 (44)
ec <sub>10,3</sub> L	(Fr)	138.619 - 142.228	0.212 (21)
ec <sub>10,3</sub> M	(Fr)	152.609 - 154.259	0.051 (5)
ec <sub>10,0</sub> L	(Fr)	177.12 - 180.72	0.0465 (29)
ec <sub>10,0</sub> M	(Fr)	191.11 - 192.76	0.0117 (9)
ec <sub>33,4</sub> K	(Fr)	351.11 (3)	0.0185 (14)

## 4 Photon Emissions

### 4.1 X-Ray Emissions

		Energy keV	Photons per 100 disint.	
XL	(Fr)	10.38 — 17.799	18.7 (9)	
XK $\alpha_2$	(Fr)	83.23	1.00 (8)	} K $\alpha$
XK $\alpha_1$	(Fr)	86.1	1.64 (12)	}
XK $\beta_3$	(Fr)	96.815	}	
XK $\beta_1$	(Fr)	97.474	} 0.57 (5)	K $\beta'_1$
XK $\beta''_5$	(Fr)	98.069	}	
XK $\beta_2$	(Fr)	100.16	}	
XK $\beta_4$	(Fr)	100.548	} 0.19 (2)	K $\beta'_2$
XK $\beta_{2,3}$	(Fr)	100.972	}	

### 4.2 Gamma Transitions and Emissions

	Energy keV	P $_{\gamma+ce}$ $\times 100$	Multipolarity	$\alpha_T$	P $_{\gamma}$ $\times 100$
$\gamma_{2,1}$ (Fr)	10.6	7.7 (10)	M1	510 (7)	0.015 (2)
$\gamma_{1,0}$ (Fr)	26.0 (1)	9.4 (13)	E2	5940 (150)	0.00159 (21)
$\gamma_{2,0}$ (Fr)	36.69 (3)	19.8 (17)	E2	1092 (16)	0.0181 (15)
$\gamma_{3,0}$ (Fr)	38.58 (4)	9.1 (9)	E2	854 (13)	0.0107 (10)
$\gamma_{8,4}$ (Fr)	46.24 (5)	0.0090 (13)	[E1]	0.841 (12)	0.0049 (7)
$\gamma_{9,6}$ (Fr)	49.12 (4)	0.0137 (14)	[E1]	0.715 (11)	0.0080 (8)
$\gamma_{9,5}$ (Fr)	50.2	0.15	[E2]	236.0 (34)	0.00062
$\gamma_{34,32}$ (Fr)	53.4 (4)	0.074	[M1]	17.6 (5)	0.004
$\gamma_{13,10}$ (Fr)	57.71 (4)	0.0075 (12)	(E1)	0.465 (7)	0.0051 (8)
$\gamma_{6,3}$ (Fr)	62.6 (3)	0.44 (10)	[E2]	81.2 (23)	0.0053 (12)
$\gamma_{4,2}$ (Fr)	62.94 (3)	5.81 (36)	M1	10.85 (15)	0.49 (3)
$\gamma_{5,2}$ (Fr)	63.5 (3)	0.0286 (41)	[E1]	0.360 (7)	0.021 (3)
$\gamma_{6,2}$ (Fr)	64.27 (3)	1.13 (21)	M1+E2	23 (4)	0.047 (4)
$\gamma_{7,3}$ (Fr)	69.86 (5)	0.23 (6)	E2	47.9 (7)	0.0047 (12)
$\gamma_{7,2}$ (Fr)	71.71 (4)	0.57 (6)	E2	42.3 (6)	0.0132 (13)
$\gamma_{4,1}$ (Fr)	73.55 (9)	0.73 (19)	E2	37.5 (6)	0.019 (5)
$\gamma_{5,1}$ (Fr)	73.85 (3)	0.383 (29)	E1	0.240 (3)	0.309 (23)
$\gamma_{6,1}$ (Fr)	74.82 (5)	0.197 (39)	(M1+E2)	12.15 (18)	0.015 (3)
$\gamma_{11,8}$ (Fr)	78.8	0.082 (13)	M1	5.63 (8)	0.0123 (19)
$\gamma_{10,7}$ (Fr)	87.41 (3)	1.4 (1)	M1	4.16 (6)	0.271 (19)
$\gamma_{10,6}$ (Fr)	94.90 (2)	0.449 (43)	M1	3.28 (5)	0.105 (10)
$\gamma_{10,5}$ (Fr)	96.16 (5)	0.23 (7)	M1+E2	6.0 (14)	0.033 (7)
$\gamma_{4,0}$ (Fr)	99.67 (5)	3.09 (22)	M1+E2	3.06 (11)	0.76 (5)
$\gamma_{5,0}$ (Fr)	99.89 (6)	1.20 (9)	E1	0.1073 (15)	1.08 (8)
$\gamma_{6,0}$ (Fr)	100.86 (4)	0.54 (19)	M1+E2	4.6 (19)	0.096 (8)
$\gamma_{13,9}$ (Fr)	103.48 (10)	0.033 (12)	[M1,E2]	10 (3)	0.0030 (7)
$\gamma_{7,0}$ (Fr)	108.38 (3)	2.87 (19)	M1+E2	10.27 (25)	0.255 (16)

	Energy keV	$P_{\gamma+ce}$ $\times 100$	Multipolarity	$\alpha_T$	$P_\gamma$ $\times 100$
$\gamma_{9,3}(\text{Fr})$	111.52 (3)	0.427 (29)	(E1)	0.363 (5)	0.313 (21)
$\gamma_{24,16}(\text{Fr})$	112.80 (2)	0.00284 (41)	[E1]	0.353 (5)	0.0021 (3)
$\gamma_{23,15}(\text{Fr})$	114	0.0094 (14)	M1	9.86 (14)	0.00087 (13)
$\gamma_{8,1}(\text{Fr})$	119.85 (3)	0.104 (7)	[E1]	0.305 (4)	0.080 (5)
$\gamma_{14,9}(\text{Fr})$	121.06 (7)	0.022 (6)	(E1)	0.298 (4)	0.017 (5)
$\gamma_{11,6}(\text{Fr})$	123.75 (4)	0.112 (8)	[E1]	0.282 (4)	0.087 (6)
$\gamma_{11,5}(\text{Fr})$	124.81 (3)	0.205 (13)	M1+E2	6.01	0.0292 (18)
$\gamma_{12,7}(\text{Fr})$	126.10 (5)	0.0100 (9)	(E1)	0.270 (4)	0.0079 (7)
$\gamma_{15,9}(\text{Fr})$	129.22 (7)	0.016 (9)	[M1,E2]	5 (2)	0.0027 (5)
$\gamma_{12,6}(\text{Fr})$	133.60 (3)	0.0242 (20)	(E1)	0.234 (3)	0.0196 (16)
$\gamma_{12,4}(\text{Fr})$	134.85 (3)	0.0393 (37)	(E1)	0.229 (3)	0.032 (3)
$\gamma_{26,14}(\text{Fr})$	137.4 (1)	0.0023 (3)			0.0023 (3)
$\gamma_{23,13}(\text{Fr})$	139.6	0.0068 (26)	M1+E2	3.9 (17)	0.00139 (21)
$\gamma_{17,9}(\text{Fr})$	144.7 (2)	0.0022 (6)	(M1+E2)	3.79	0.00046 (12)
$\gamma_{13,7}(\text{Fr})$	145.15 (3)	0.174 (11)	(E1)	0.191 (3)	0.146 (9)
$\gamma_{9,0}(\text{Fr})$	150.05 (3)	0.815 (14)	E1	0.1766 (25)	0.693 (12)
$\gamma_{13,6}(\text{Fr})$	152.64 (3)	0.0230 (15)	[E1]	0.1694 (24)	0.0197 (13)
$\gamma_{13,4}(\text{Fr})$	153.92 (3)	0.239 (15)	E1	0.1660 (23)	0.205 (13)
$\gamma_{10,3}(\text{Fr})$	157.25 (3)	1.73 (18)	M1+E2	3.8 (3)	0.36 (3)
$\gamma_{18,9}(\text{Fr})$	161.35 (7)	0.013 (6)	[M1,E2]	2.5 (13)	0.0036 (9)
$\gamma_{23,11}(\text{Fr})$	169.18 (4)	0.037 (20)	[M1,E2]	2.1 (11)	0.012 (5)
$\gamma_{10,1}(\text{Fr})$	169.9	0.0139 (14)			0.0139 (14)
$\gamma_{15,7}(\text{Fr})$	170.77 (5)	0.015 (8)	(E1)	0.1290 (18)	0.013 (7)
$\gamma_{15,6}(\text{Fr})$	178.29 (3)	0.0180 (13)	E1	0.1162 (16)	0.0161 (12)
$\gamma_{16,7}(\text{Fr})$	179.78 (4)	0.030 (11)	(M1,E2)	1.8 (10)	0.0108 (8)
$\gamma_{11,3}(\text{Fr})$	186.1	0.0127 (14)			0.0127 (14)
$\gamma_{17,7}(\text{Fr})$	186.29 (3)	0.0046 (6)	E1	0.1045 (15)	0.0042 (5)
$\gamma_{16,6}(\text{Fr})$	187.2	0.0103 (7)			0.0103 (7)
$\gamma_{11,2}(\text{Fr})$	187.96 (3)	0.584 (33)	E1	0.1023 (14)	0.53 (3)
$\gamma_{10,0}(\text{Fr})$	195.74 (3)	0.37 (9)	M1+E2	1.5 (6)	0.148 (9)
$\gamma_{23,10}(\text{Fr})$	197.50 (3)	0.0284 (33)	E1	0.0908 (13)	0.026 (3)
$\gamma_{12,2}(\text{Fr})$	197.7 (1)	0.041 (5)	[E1]	0.0906 (13)	0.038 (5)
$\gamma_{11,1}(\text{Fr})$	198.47 (23)	0.0205 (14)	[E1]	0.0898 (13)	0.0188 (13)
$\gamma_{29,13}(\text{Fr})$	205.07 (11)	0.0015 (5)			0.0015 (5)
$\gamma_{13,2}(\text{Fr})$	216.89 (3)	0.343 (21)	(E1)	0.0726 (10)	0.32 (2)
$\gamma_{19,4}(\text{Fr})$	220.43 (8)	0.0060 (18)			0.0060 (18)
$\gamma_{11,0}(\text{Fr})$	224.59 (3)	0.119 (9)	[E1]	0.0669 (9)	0.112 (8)
$\gamma_{13,1}(\text{Fr})$	228.2 (4)	0.0046 (12)			0.0046 (12)
$\gamma_{41,32}(\text{Fr})$	231.16 (7)	0.012 (7)	(M1)	1.338 (19)	0.005 (3)
$\gamma_{14,2}(\text{Fr})$	236.0 (6)	0.0017 (3)			0.0017 (3)
$\gamma_{20,4}(\text{Fr})$	238.64 (8)	0.0022 (7)	(M1)	1.225 (17)	0.0010 (3)
$\gamma_{15,3}(\text{Fr})$	240.68 (3)	0.0124 (11)	[E1]	0.0568 (8)	0.0117 (10)
$\gamma_{23,9}(\text{Fr})$	243.12 (5)	0.0067 (9)	[M1]	1.163 (16)	0.0031 (4)
$\gamma_{16,3}(\text{Fr})$	249.60 (3)	0.0170 (13)	(E2)	0.258 (4)	0.0135 (10)
$\gamma_{13,0}(\text{Fr})$	253.46 (3)	0.139 (8)	[E1]	0.0504 (7)	0.132 (8)
$\gamma_{17,3}(\text{Fr})$	256.0 (2)	0.00039 (7)	[E1]	0.0492 (7)	0.00037 (7)
$\gamma_{15,0}(\text{Fr})$	279.18 (3)	0.0317 (23)	E1	0.0403 (6)	0.0305 (22)
$\gamma_{36,21}(\text{Fr})$	282.1 (2)	0.00097 (9)	[M1]	0.771 (11)	0.00055 (5)

	Energy keV	$P_{\gamma+ce}$ $\times 100$	Multipolarity	$\alpha_T$	$P_\gamma$ $\times 100$
$\gamma_{23,7}(\text{Fr})$	284.75 (3)	0.0077 (6)	[E1]	0.0385 (5)	0.0074 (6)
$\gamma_{25,7}(\text{Fr})$	298.33 (5)	0.0028 (7)	(M1,E2)	0.4 (3)	0.0020 (3)
$\gamma_{34,13}(\text{Fr})$	317.23 (18)	0.00065 (33)	M1	0.558 (8)	0.00042 (21)
$\gamma_{27,6}(\text{Fr})$	321.77 (4)	0.00340 (41)	[E1]	0.0292 (4)	0.0033 (4)
$\gamma_{21,0}(\text{Fr})$	348.33 (5)	0.0030 (3)			0.0030 (3)
$\gamma_{23,3}(\text{Fr})$	354.56 (6)	0.0020 (7)	[E1]	0.0236 (3)	0.0020 (7)
$\gamma_{33,10}(\text{Fr})$	356.6	0.00026 (11)			0.00026 (11)
$\gamma_{24,3}(\text{Fr})$	362.38 (3)	0.0055 (5)	(E1)	0.0225 (3)	0.0054 (5)
$\gamma_{22,0}(\text{Fr})$	367.74 (12)	0.00052 (18)			0.00052 (18)
$\gamma_{34,10}(\text{Fr})$	374.98 (5)	0.0019 (5)	[E1]	0.0209 (3)	0.0019 (5)
$\gamma_{31,7}(\text{Fr})$	388.07 (7)	0.00125 (21)			0.00125 (21)
$\gamma_{37,12}(\text{Fr})$	403.13 (10)	0.00019 (16)			0.00019 (16)
$\gamma_{33,8}(\text{Fr})$	405.95 (3)	0.0079 (5)	[E1]	0.01759 (25)	0.0078 (5)
$\gamma_{32,5}(\text{Fr})$	417.90 (2)	0.0056 (5)			0.0056 (5)
$\gamma_{47,27}(\text{Fr})$	429.80 (18)	0.00038 (19)			0.00038 (19)
$\gamma_{36,10}(\text{Fr})$	434.82 (5)	0.0029 (3)			0.0029 (3)
$\gamma_{40,14}(\text{Fr})$	442.16 (8)	0.0045 (7)			0.0045 (7)
$\gamma_{30,3}(\text{Fr})$	443.43 (10)	0.0001			0.0001
$\gamma_{33,7}(\text{Fr})$	443.43 (10)	0.0015 (5)	[E2]	0.0494 (7)	0.0014 (5)
$\gamma_{28,0}(\text{Fr})$	446.31 (10)	0.0006 (4)			0.0006 (4)
$\gamma_{33,6}(\text{Fr})$	451.04 (5)	0.0036 (6)	[M1]	0.215 (3)	0.0030 (5)
$\gamma_{33,4}(\text{Fr})$	452.23 (3)	0.13 (1)	[M1]	0.213 (3)	0.107 (8)
$\gamma_{29,0}(\text{Fr})$	458.79 (8)	0.00053 (13)			0.00053 (13)
$\gamma_{34,7}(\text{Fr})$	462.43 (13)	0.00045 (11)	[E1]	0.01338 (19)	0.00044 (11)
$\gamma_{34,6}(\text{Fr})$	469.48 (5)	0.0028 (4)			0.0028 (4)
$\gamma_{32,2}(\text{Fr})$	480.85 (11)	0.0340 (22)			0.0340 (22)
$\gamma_{32,1}(\text{Fr})$	491.45 (10)	0.00035 (14)			0.00035 (14)
$\gamma_{31,0}(\text{Fr})$	496.9 (3)	0.0015 (7)			0.0015 (7)
$\gamma_{45,19}(\text{Fr})$	498.6 (6)	0.00083 (21)			0.00083 (21)
$\gamma_{33,3}(\text{Fr})$	512.5 (7)	0.00055 (21)			0.00055 (21)
$\gamma_{33,2}(\text{Fr})$	515.13 (3)	0.0246 (15)	[M1]	0.1506 (21)	0.0214 (13)
$\gamma_{32,0}(\text{Fr})$	517.51 (3)	0.0159 (10)			0.0159 (10)
$\gamma_{36,7}(\text{Fr})$	522.14 (4)	0.00208 (15)			0.00208 (15)
$\gamma_{33,1}(\text{Fr})$	525.94 (17)	0.0403 (25)	[M1]	0.1425 (20)	0.0353 (22)
$\gamma_{36,6}(\text{Fr})$	529.59 (3)	0.0076 (7)			0.0076 (7)
$\gamma_{36,4}(\text{Fr})$	530.87 (4)	0.0047 (5)			0.0047 (5)
$\gamma_{34,3}(\text{Fr})$	532.11 (9)	0.00077 (21)	[E1]	0.01005 (14)	0.00076 (21)
$\gamma_{37,4}(\text{Fr})$	538.1 (1)	0.0038 (10)			0.0038 (10)
$\gamma_{43,12}(\text{Fr})$	545.8 (6)	0.00053 (14)			0.00053 (14)
$\gamma_{33,0}(\text{Fr})$	551.79 (3)	0.0059 (16)	[M1]	0.1254 (17)	0.0052 (14)
$\gamma_{35,2}(\text{Fr})$	564.34 (11)	0.00022 (9)			0.00022 (9)
$\gamma_{40,8}(\text{Fr})$	567.48 (5)	0.0012 (4)			0.0012 (4)
$\gamma_{34,0}(\text{Fr})$	570.69 (3)	0.0040 (5)	[E1]	0.00874 (12)	0.0040 (5)
$\gamma_{36,3}(\text{Fr})$	590.42 (5)	0.00083 (14)			0.00083 (14)
$\gamma_{36,2}(\text{Fr})$	593.87 (4)	0.0029 (3)			0.0029 (3)
$\gamma_{35,0}(\text{Fr})$	600.92 (3)	0.0024 (5)			0.0024 (5)
$\gamma_{37,2}(\text{Fr})$	600.92 (3)	0.006			0.006
$\gamma_{41,8}(\text{Fr})$	603.09 (4)	0.00173 (21)			0.00173 (21)

	Energy keV	$P_{\gamma+ce}$ $\times 100$	Multipolarity	$\alpha_T$	$P_\gamma$ $\times 100$
$\gamma_{43,9}(\text{Fr})$	628.95 (10)	0.00032 (7)			0.00032 (7)
$\gamma_{37,0}(\text{Fr})$	637.1 (7)	0.00012			0.00012
$\gamma_{38,0}(\text{Fr})$	645.94 (12)	0.00015 (5)			0.00015 (5)
$\gamma_{41,5}(\text{Fr})$	649.03 (4)	0.0017 (5)			0.0017 (5)
$\gamma_{47,10}(\text{Fr})$	656.18 (11)	0.00049 (21)			0.00049 (21)
$\gamma_{42,7}(\text{Fr})$	657.88 (5)	0.0014 (3)			0.0014 (3)
$\gamma_{42,4}(\text{Fr})$	667.14 (8)	0.0021 (18)			0.0021 (18)
$\gamma_{46,9}(\text{Fr})$	674.9 (3)	0.00010 (5)			0.00010 (5)
$\gamma_{39,0}(\text{Fr})$	679.36 (6)	0.00066 (12)			0.00066 (12)
$\gamma_{47,9}(\text{Fr})$	702.00 (14)	0.00016 (7)			0.00016 (7)
$\gamma_{48,10}(\text{Fr})$	747.0 (1)	0.0011 (4)			0.0011 (4)
$\gamma_{47,4}(\text{Fr})$	752.46 (12)	0.00026 (7)			0.00026 (7)
$\gamma_{43,1}(\text{Fr})$	754.04 (13)	0.00023 (7)			0.00023 (7)
$\gamma_{42,0}(\text{Fr})$	767.9 (3)	0.00030 (6)			0.00030 (6)
$\gamma_{43,0}(\text{Fr})$	780.6 (6)	0.000055 (14)			0.000055 (14)
$\gamma_{44,0}(\text{Fr})$	808.48 (10)	0.0021 (3)			0.0021 (3)
$\gamma_{46,0}(\text{Fr})$	824.2 (7)	0.000049			0.000049

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