

Thorium				A = 4n				Ra 228 Q _β 0.040 10% 0.039 40% 0.026 20% 0.013 30%	Ra 228 5.75 a	← 4.012 78.2% 3.947 21.7%	Th 232 1.405x10 ¹⁰ a	
								Ac 228 Q _β 2.069 8% 1.731 12% 1.158 30% 1.004 6%	← Ac 228 6.15 h			
Pb 212 Q _β 0.574 12.3% 0.335 82.5% 0.159 5.17%	Pb 212 10.64(1) h	← 6.778 99.998% 5.985 0.002%	Po 216 145(2) ms	← 6.288 99.886% 5.747 0.114%	Rn 220 55.6(1) s	← 5.685 94.92% 5.449 5.06%	Ra 224 3.66(4) d	← 5.423 72.2% 5.340 27.2%	Th 228 1.9116(16) a			
	Tl 208 3.053(4) m	← 6.090 27.12% 6.051 69.91%	Bi 212 Q _β 60.55(6) m	← 2.554 55.46% 1.527 4.36%								
	Tl 208 Q _β 1.803 48.7% 1.526 21.8% 1.293 24.5%	← Pb 208 stable	← 8.784	Po 212 299(2) ns								
Actinium				A = 4n + 3				Fr 223 Q _β 1.099 67.4% 1.069 16.0% 0.914 10.1%	Th 231 Q _β 0.305 35% 0.288 37% 0.287 13%	Th 231 1.0633 d	← 4.596 5.0% 4.399 55% 4.361 17% 4.215 5.7%	U 235 7.028x10 ⁸ a
			Q _β 2.252 Bi 215 7.6 m	← 6.275	Q _β 1.697 At 219 56 s	← 5.340	Fr 223 21.8 m	← 4.953 47.7% 4.941 39.6%	Q _β 0.045 Ac 227 21.773(3) a	← 5.059 11.0% 5.028 20.0% 5.014 25.4% 4.951 22.8% 4.736 8.4%	Pa 231 3.276x10 ⁴ a	
Pb 211 Q _β 1.371 91.30% 0.540 6.32%	Pb 211 36.1(2) m	← 7.386 100% 6.957 -0.034% 6.950 -0.022%	Po 215 1.781(4) ms	← 6.819 79.4% 6.553 12.6% 6.428 7.5%	Rn 219 3.96(1) s	← 5.747 9.2% 5.716 52.6% 5.607 25.7% 5.540 9.2%	Ra 223 11.435(4) d	← 6.038 24.2% 5.978 23.5% 5.756 20.4% 5.709 8.3%	Th 227 18.72(2) d			
	Tl 207 4.77 m	← 6.623 83.77% 6.278 16.23%	Q _β 0.579 Bi 211 2.14(2) m	← 99.724% 0.276%								
	Tl 207 Q _β 1.423 99.724%	← Pb 207 stable	← 7.450 98.89%	Po 211 516 ms								
Uranium – Radium				A = 4n + 2					Th 234 Q _β 0.199 70.3% 0.107 19.2% 0.106 7.6%	Th 234 24.10 d	← 4.198 79.0% 4.151 20.9%	U 238 4.468x10 ⁹ a
		Bi 214 Q _β 3.272 18.2 % 1.894 7.43% 1.542 17.8 % 1.508 17.02% 1.425 8.18% 1.06 8 3.72%							Pa 234 Q _β 0.642 19.4% 0.502 7.0% 0.4721 12.4% 0.4716 33 % 0.413 8 %	Pa 234 ^m 1.17 m	← 2.269 98.2%	Pa 234m Q _β
Pb 214 Q _β 1.024 6.3% 0.729 42.2% 0.672 48.9%	Pb 214 26.8(9) m	← 6.002 99.999% 5.181 0.001%	Po 218 3.10(1) m	← 5.490 99.92% 4.987 0.078%	Rn 222 3.8235(3) d	← 54.784 94.45% 4.601 5.55%	Ra 226 1600(1) a	← 4.687 76.3% 4.621 23.4%	Th 230 7.538x10 ⁴ a	← 4.775 71.38% 4.722 28.42%	U 234 7.455x10 ⁵ a	
	Tl 210 1.30(3) m	← 5.516 39.2% 5.452 53.9% 5.273 5.8%	Bi 214 19.9(4) m	← 6.693 90 % 6.653 6.4%	At 218 1.5 s							
	Tl 210 Q _β 4.391 20% 4.210 30% 2.419 10% 2.029 10% 1.864 24% 1.609 7%	← Pb 210 22.3(2) a	← 7.687 99.999% 6.902 0.010%	Po 214 164.3(20) us								
		Pb 210 Q _β 0.064 16% 0.017 84%	← Bi 210 5.013 d	Bi 210 Q _β 1.162								
		Pb 206 stable	← 5.304 100 % 4.516 0.001%	Po 210 138.376 d								
Neptunium				A = 4n + 1					Q _β 0.570 8 % 0.258 17 % 0.229 40 % 0.172 16.4% 0.154 27.7%	Pa 233 26.967 d	← 4.788 47% 4.771 25% 4.766 8% 4.639 6%	Np 237 2.144x10 ⁶ a
			Bi 213 Q _β 1.427 64.54% 0.987 30.4 %				Q _β 0.358 30.5% 0.318 69.5%	Ra 225 14.9 d	← 5.830 50.7% 5.793 18.1% 4.845 56.2% 4.838 5.0% 4.814 9.3%	Th 229 7340 a	← 4.824 84.4% 4.784 13.2%	U 233 1.592x10 ⁵ a
Q _β 3.982	Tl 209 2.20 m	← 5.869 93.5% 5.549 7.4%	Bi 213 45.59 m	← 7.067 99.9% 6.812 0.06% 6.609 0.01% 6.483 0.02%	At 217 32.3 ms	← 6.341 83.4% 6.126 15.1%	Fr 221 4.9 m	← 5.791 8.6% 5.732 8.0%	Ac 225 10.0 d			
	Q _β (0.644) 1.150 0.10% 1.832 98.8 % 0.906 0.61% 0.595 0.46%	← Pb 209 3.25 h	← 8.376 ~100% 7.614 0.01%	Po 213 4.2 us	← 7.741	Rn 217 0.54 ms						
	Tl 205 stable	← 3.137 ~100%	← Bi 209 1.9x10 ¹⁹ a									