Finite-Range Droplet Model

Isotope	Mass Excess
^{16}O	-4.840
^{17}O	-0.170
^{18}O	-2.620
^{19}O	2.560
^{20}O	2.570
^{21}O	8.200
^{22}O	10.410
^{23}O	17.720
^{24}O	22.140
^{25}O	30.930
^{26}O	36.750
^{27}O	46.580
^{28}O	53.730
^{29}O	65.030
^{30}O	72.830
^{31}O	82.300
^{32}O	91.320
^{33}O	104.630
^{34}O	113.700
^{17}F	1.900
^{18}F	1.210
^{19}F	-3.080
^{20}F	0.100
^{21}F	-0.680
^{22}F	3.080
^{23}F	4.240
^{24}F	9.320
^{25}F	12.810
^{26}F	19.940
^{27}F	24.990
^{28}F	33.220
^{29}F	39.880
^{30}F	49.320
^{31}F	53.550
^{32}F	63.380
^{33}F	72.020
^{34}F	83.790
^{35}F	93.120
^{36}F	104.000
^{37}F	110.240
^{38}F	124.510
^{18}Ne	3.210
^{19}Ne	0.470
^{20}Ne	-7.720
^{21}Ne	-5.870
^{22}Ne	-8.690
^{23}Ne	-5.010
^{24}Ne	-5.980
^{25}Ne	-0.980
^{26}Ne	1.020
^{27}Ne	7.250
^{28}Ne	10.020
^{29}Ne	17.830
^{30}Ne	22.440
^{31}Ne	29.130
^{32}Ne	33.320
^{33}Ne	42.960
^{34}Ne	49.560
^{35}Ne	60.850
^{36}Ne	68.780
^{37}Ne	79.590
^{38}Ne	84.850
^{39}Ne	98.860
^{40}Ne	107.820
^{41}Ne	118.930
^{19}Na	11.470
^{20}Na	6.160
^{21}Na	-2.820
^{22}Na	-4.930
^{23}Na	-9.820
^{24}Na	-7.430

Isotope	Mass Excess
^{25}Na	-8.970
^{26}Na	-5.890
^{27}Na	-5.180
^{28}Na	-0.730
^{29}Na	2.480
^{30}Na	8.210
^{31}Na	12.250
^{32}Na	18.440
^{33}Na	23.140
^{34}Na	30.000
^{35}Na	36.190
^{36}Na	45.380
^{37}Na	52.410
^{38}Na	61.440
^{39}Na	68.780
^{40}Na	80.140
^{41}Na	88.510
^{42}Na	99.150
^{43}Na	107.710
^{44}Na	118.770
^{20}Mg	16.070
^{21}Mg	9.860
^{22}Mg	-1.500
^{23}Mg	-5.840
^{24}Mg	-14.080
^{25}Mg	-12.520
^{26}Mg	-16.390
^{27}Mg	-12.540
^{28}Mg	-14.500
^{29}Mg	-9.340
^{30}Mg	-9.140
^{31}Mg	-3.550
^{32}Mg	-1.420
^{33}Mg	5.360
^{34}Mg	7.890
^{35}Mg	14.920
^{36}Mg	19.160
^{37}Mg	27.560
^{38}Mg	32.740
^{39}Mg	41.120
^{40}Mg	45.420
^{41}Mg	58.180
^{42}Mg	65.520
^{43}Mg	76.280
^{44}Mg	78.060
^{45}Mg	95.370
^{46}Mg	101.100
^{47}Mg	115.530
^{21}Al	26.480
^{22}Al	18.040
^{23}Al	6.450
^{24}Al	0.400
^{25}Al	-8.450
^{26}Al	-10.770
^{27}Al	-16.900
^{28}Al	-15.480
^{29}Al	-16.440
^{30}Al	-14.480
^{31}Al	-14.400
^{32}Al	-10.760
^{33}Al	-9.070
^{34}Al	-4.210
^{35}Al	-1.540
^{36}Al	4.390
^{37}Al	8.290
^{38}Al	15.180
^{39}Al	20.060
^{40}Al	28.150
^{41}Al	30.430
^{42}Al	41.110
^{43}Al	49.470
^{44}Al	58.380
^{45}Al	61.220

Isotope	Mass Excess
^{46}Al	76.240
^{47}Al	84.700
^{48}Al	95.830
^{49}Al	105.020
^{50}Al	115.130
^{51}Al	123.860
^{22}Si	33.170
^{23}Si	23.600
^{24}Si	9.820
^{25}Si	3.200
^{26}Si	-8.350
^{27}Si	-12.730
^{28}Si	-21.100
^{29}Si	-20.380
^{30}Si	-22.480
^{31}Si	-20.510
^{32}Si	-22.300
^{33}Si	-19.290
^{34}Si	-19.510
^{35}Si	-14.760
^{36}Si	-13.370
^{37}Si	-7.950
^{38}Si	-5.730
^{39}Si	0.880
^{40}Si	4.820
^{41}Si	9.780
^{42}Si	12.870
^{43}Si	22.620
^{44}Si	29.170
^{45}Si	38.440
^{46}Si	42.280
^{47}Si	55.210
^{48}Si	62.620
^{49}Si	73.260
^{50}Si	81.030
^{51}Si	92.000
^{52}Si	99.170
^{53}Si	109.510
^{54}Si	117.750
^{23}P	45.660
^{24}P	33.780
^{25}P	20.520
^{26}P	11.390
^{27}P	1.050
^{28}P	-6.500
^{29}P	-15.890
^{30}P	-17.430
^{31}P	-21.940
^{32}P	-21.750
^{33}P	-24.000
^{34}P	-22.780
^{35}P	-23.460
^{36}P	-20.420
^{37}P	-19.440
^{38}P	-15.190
^{39}P	-13.410
^{40}P	-8.350
^{41}P	-5.480
^{42}P	0.620
^{43}P	3.190
^{44}P	11.640
^{45}P	17.180
^{46}P	24.860
^{47}P	29.180
^{48}P	39.810
^{49}P	46.600
^{50}P	56.550
^{51}P	64.340
^{52}P	73.740
^{53}P	81.710
^{54}P	91.060
^{55}P	98.860
^{56}P	109.640

Isotope	Mass Excess
^{57}P	118.580
^{24}S	55.740
^{25}S	43.400
^{26}S	27.740
^{27}S	17.220
^{28}S	3.880
^{29}S	-2.700
^{30}S	-12.300
^{31}S	-16.590
^{32}S	-23.750
^{33}S	-24.370
^{34}S	-28.320
^{35}S	-27.570
^{36}S	-29.950
^{37}S	-27.260
^{38}S	-27.780
^{39}S	-24.300
^{40}S	-23.880
^{41}S	-19.200
^{42}S	-17.790
^{43}S	-12.150
^{44}S	-9.380
^{45}S	-2.640
^{46}S	1.720
^{47}S	9.220
^{48}S	14.050
^{49}S	22.250
^{50}S	27.650
^{51}S	37.670
^{52}S	44.480
^{53}S	53.870
^{54}S	60.740
^{55}S	70.610
^{56}S	77.620
^{57}S	87.570
^{58}S	95.550
^{59}S	108.220
^{60}S	117.200
^{25}Cl	70.020
^{26}Cl	54.310
^{27}Cl	39.290
^{28}Cl	28.260
^{29}Cl	14.830
^{30}Cl	4.910
^{31}Cl	-5.380
^{32}Cl	-11.470
^{33}Cl	-19.010
^{34}Cl	-23.120
^{35}Cl	-28.110
^{36}Cl	-28.400
^{37}Cl	-31.190
^{38}Cl	-30.270
^{39}Cl	-31.120
^{40}Cl	-28.680
^{41}Cl	-28.570
^{42}Cl	-25.270
^{43}Cl	-24.050
^{44}Cl	-19.910
^{45}Cl	-18.310
^{46}Cl	-12.630
^{47}Cl	-8.640
^{48}Cl	-2.060
^{49}Cl	2.620
^{50}Cl	9.890
^{51}Cl	15.290
^{52}Cl	23.560
^{53}Cl	30.240
^{54}Cl	38.730
^{55}Cl	45.900
^{56}Cl	54.660
^{57}Cl	61.710
^{58}Cl	69.420
^{59}Cl	76.330

Isotope	Mass Excess
^{60}Cl	85.750
^{61}Cl	92.410
^{62}Cl	102.600
^{63}Cl	111.670
^{27}Ar	64.710
^{28}Ar	45.810
^{29}Ar	35.410
^{30}Ar	19.950
^{31}Ar	10.790
^{32}Ar	-2.120
^{33}Ar	-7.760
^{34}Ar	-17.030
^{35}Ar	-22.480
^{36}Ar	-29.560
^{37}Ar	-30.960
^{38}Ar	-35.380
^{39}Ar	-34.770
^{40}Ar	-36.530
^{41}Ar	-34.390
^{42}Ar	-35.620
^{43}Ar	-32.880
^{44}Ar	-33.300
^{45}Ar	-30.030
^{46}Ar	-28.990
^{47}Ar	-24.030
^{48}Ar	-21.240
^{49}Ar	-14.880
^{50}Ar	-11.470
^{51}Ar	-4.480
^{52}Ar	-0.290
^{53}Ar	7.560
^{54}Ar	12.860
^{55}Ar	20.220
^{56}Ar	24.980
^{57}Ar	34.130
^{58}Ar	40.490
^{59}Ar	49.310
^{60}Ar	55.560
^{61}Ar	64.380
^{62}Ar	70.320
^{63}Ar	80.570
^{64}Ar	88.390
^{65}Ar	99.440
^{66}Ar	108.940
^{67}Ar	119.560
^{29}K	61.630
^{30}K	48.080
^{31}K	32.160
^{32}K	20.620
^{33}K	7.400
^{34}K	-0.990
^{35}K	-10.680
^{36}K	-16.910
^{37}K	-24.930
^{38}K	-28.870
^{39}K	-34.390
^{40}K	-35.360
^{41}K	-37.780
^{42}K	-36.970
^{43}K	-38.550
^{44}K	-37.320
^{45}K	-38.060
^{46}K	-35.710
^{47}K	-35.440
^{48}K	-31.610
^{49}K	-28.860
^{50}K	-23.510
^{51}K	-19.780
^{52}K	-13.770
^{53}K	-9.530
^{54}K	-2.680
^{55}K	2.520
^{56}K	8.920

Isotope	Mass Excess
^{57}K	14.110
^{58}K	21.930
^{59}K	27.010
^{60}K	34.920
^{61}K	40.780
^{62}K	48.960
^{63}K	55.590
^{64}K	66.210
^{65}K	72.980
^{66}K	82.440
^{67}K	89.860
^{68}K	99.390
^{69}K	107.000
^{70}K	117.430
^{30}Ca	72.940
^{31}Ca	58.760
^{32}Ca	40.830
^{33}Ca	28.780
^{34}Ca	13.660
^{35}Ca	4.900
^{36}Ca	-6.510
^{37}Ca	-13.130
^{38}Ca	-22.880
^{39}Ca	-27.990
^{40}Ca	-35.440
^{41}Ca	-36.650
^{42}Ca	-40.860
^{43}Ca	-40.400
^{44}Ca	-43.480
^{45}Ca	-42.470
^{46}Ca	-44.700
^{47}Ca	-43.060
^{48}Ca	-43.790
^{49}Ca	-40.300
^{50}Ca	-38.650
^{51}Ca	-33.550
^{52}Ca	-31.070
^{53}Ca	-25.390
^{54}Ca	-22.460
^{55}Ca	-16.250
^{56}Ca	-12.820
^{57}Ca	-5.290
^{58}Ca	-1.990
^{59}Ca	5.590
^{60}Ca	10.470
^{61}Ca	17.780
^{62}Ca	23.100
^{63}Ca	31.940
^{64}Ca	37.530
^{65}Ca	46.380
^{66}Ca	52.430
^{67}Ca	61.470
^{68}Ca	67.900
^{69}Ca	77.270
^{70}Ca	83.650
^{71}Ca	94.580
^{72}Ca	102.730
^{73}Ca	113.660
^{32}Sc	70.750
^{33}Sc	54.230
^{34}Sc	40.370
^{35}Sc	25.050
^{36}Sc	14.670
^{37}Sc	2.910
^{38}Sc	-5.460
^{39}Sc	-15.450
^{40}Sc	-22.210
^{41}Sc	-29.890
^{42}Sc	-33.580
^{43}Sc	-38.700
^{44}Sc	-39.830
^{45}Sc	-43.290
^{46}Sc	-43.770

Isotope	Mass Excess
^{47}Sc	-46.430
^{48}Sc	-45.660
^{49}Sc	-46.890
^{50}Sc	-44.530
^{51}Sc	-43.400
^{52}Sc	-39.360
^{53}Sc	-36.840
^{54}Sc	-32.030
^{55}Sc	-29.170
^{56}Sc	-23.840
^{57}Sc	-20.440
^{58}Sc	-14.590
^{59}Sc	-10.990
^{60}Sc	-4.830
^{61}Sc	-1.020
^{62}Sc	6.670
^{63}Sc	11.680
^{64}Sc	18.970
^{65}Sc	24.370
^{66}Sc	32.160
^{67}Sc	37.960
^{68}Sc	46.090
^{69}Sc	52.340
^{70}Sc	60.760
^{71}Sc	67.620
^{72}Sc	77.040
^{73}Sc	84.940
^{74}Sc	94.900
^{75}Sc	103.720
^{76}Sc	114.940
^{34}Ti	63.450
^{35}Ti	49.640
^{36}Ti	33.530
^{37}Ti	22.630
^{38}Ti	9.210
^{39}Ti	0.580
^{40}Ti	-10.400
^{41}Ti	-17.480
^{42}Ti	-26.900
^{43}Ti	-31.520
^{44}Ti	-38.830
^{45}Ti	-40.250
^{46}Ti	-45.100
^{47}Ti	-45.860
^{48}Ti	-49.890
^{49}Ti	-50.130
^{50}Ti	-52.300
^{51}Ti	-50.340
^{52}Ti	-50.220
^{53}Ti	-46.560
^{54}Ti	-45.530
^{55}Ti	-41.200
^{56}Ti	-39.580
^{57}Ti	-34.260
^{58}Ti	-32.120
^{59}Ti	-26.470
^{60}Ti	-23.950
^{61}Ti	-18.000
^{62}Ti	-14.680
^{63}Ti	-7.550
^{64}Ti	-4.070
^{65}Ti	3.590
^{66}Ti	7.750
^{67}Ti	15.430
^{68}Ti	20.410
^{69}Ti	28.390
^{70}Ti	33.650
^{71}Ti	41.820
^{72}Ti	47.470
^{73}Ti	57.160
^{74}Ti	64.430
^{75}Ti	74.620
^{76}Ti	82.790
^{77}Ti	93.690
^{78}Ti	102.380

Isotope	Mass Excess
^{79}Ti	111.730
^{80}Ti	120.750
^{36}V	62.540
^{37}V	45.710
^{38}V	33.840
^{39}V	19.860
^{40}V	10.220
^{41}V	-0.890
^{42}V	-9.430
^{43}V	-19.200
^{44}V	-25.270
^{45}V	-32.960
^{46}V	-36.430
^{47}V	-42.360
^{48}V	-45.590
^{49}V	-48.850
^{50}V	-50.490
^{51}V	-52.840
^{52}V	-52.140
^{53}V	-52.250
^{54}V	-49.730
^{55}V	-49.210
^{56}V	-45.760
^{57}V	-44.440
^{58}V	-40.310
^{59}V	-38.490
^{60}V	-33.560
^{61}V	-31.180
^{62}V	-26.170
^{63}V	-23.290
^{64}V	-16.890
^{65}V	-13.490
^{66}V	-7.820
^{67}V	-3.080
^{68}V	3.400
^{69}V	8.080
^{70}V	15.150
^{71}V	20.460
^{72}V	27.630
^{73}V	33.320
^{74}V	42.080
^{75}V	49.410
^{76}V	58.850
^{77}V	66.680
^{78}V	76.330
^{79}V	84.450
^{80}V	94.330
^{81}V	102.910
^{82}V	113.180
^{83}V	122.230
^{38}Cr	55.650
^{39}Cr	43.310
^{40}Cr	28.040
^{41}Cr	17.700
^{42}Cr	5.440
^{43}Cr	-3.490
^{44}Cr	-14.660
^{45}Cr	-21.080
^{46}Cr	-30.120
^{47}Cr	-34.640
^{48}Cr	-42.510
^{49}Cr	-46.290
^{50}Cr	-50.600
^{51}Cr	-52.760
^{52}Cr	-56.350
^{53}Cr	-55.990
^{54}Cr	-57.470
^{55}Cr	-55.160
^{56}Cr	-55.800
^{57}Cr	-52.640
^{58}Cr	-52.480
^{59}Cr	-48.680
^{60}Cr	-47.910
^{61}Cr	-42.700

Isotope	Mass Excess
^{62}Cr	-41.180
^{63}Cr	-36.030
^{64}Cr	-34.950
^{65}Cr	-28.740
^{66}Cr	-26.330
^{67}Cr	-20.500
^{68}Cr	-17.340
^{69}Cr	-11.090
^{70}Cr	-7.360
^{71}Cr	-0.330
^{72}Cr	4.130
^{73}Cr	11.230
^{74}Cr	16.020
^{75}Cr	24.730
^{76}Cr	31.210
^{77}Cr	40.440
^{78}Cr	47.290
^{79}Cr	56.850
^{80}Cr	65.140
^{81}Cr	74.810
^{82}Cr	82.570
^{83}Cr	92.360
^{84}Cr	100.530
^{85}Cr	110.960
^{86}Cr	119.450
^{40}Mn	56.060
^{41}Mn	40.120
^{42}Mn	28.840
^{43}Mn	15.020
^{44}Mn	5.470
^{45}Mn	-5.920
^{46}Mn	-13.800
^{47}Mn	-23.160
^{48}Mn	-30.030
^{49}Mn	-38.580
^{50}Mn	-42.740
^{51}Mn	-49.110
^{52}Mn	-51.490
^{53}Mn	-55.420
^{54}Mn	-56.160
^{55}Mn	-57.700
^{56}Mn	-56.570
^{57}Mn	-57.420
^{58}Mn	-55.500
^{59}Mn	-55.570
^{60}Mn	-52.950
^{61}Mn	-52.150
^{62}Mn	-48.420
^{63}Mn	-47.190
^{64}Mn	-42.980
^{65}Mn	-40.950
^{66}Mn	-36.250
^{67}Mn	-34.480
^{68}Mn	-29.290
^{69}Mn	-26.390
^{70}Mn	-20.940
^{71}Mn	-17.440
^{72}Mn	-11.520
^{73}Mn	-7.380
^{74}Mn	-1.260
^{75}Mn	3.380
^{76}Mn	11.380
^{77}Mn	17.990
^{78}Mn	26.460
^{79}Mn	33.350
^{80}Mn	42.240
^{81}Mn	49.420
^{82}Mn	59.160
^{83}Mn	67.000
^{84}Mn	76.190
^{85}Mn	83.850
^{86}Mn	93.540
^{87}Mn	101.790
^{88}Mn	111.750
^{89}Mn	119.890

Isotope	Mass Excess
^{42}Fe	49.400
^{43}Fe	37.990
^{44}Fe	23.620
^{45}Fe	12.910
^{46}Fe	-0.020
^{47}Fe	-8.120
^{48}Fe	-18.930
^{49}Fe	-25.080
^{50}Fe	-34.600
^{51}Fe	-40.820
^{52}Fe	-48.350
^{53}Fe	-51.930
^{54}Fe	-57.080
^{55}Fe	-58.120
^{56}Fe	-60.720
^{57}Fe	-60.010
^{58}Fe	-61.980
^{59}Fe	-60.190
^{60}Fe	-61.490
^{61}Fe	-59.160
^{62}Fe	-59.410
^{63}Fe	-56.020
^{64}Fe	-55.990
^{65}Fe	-52.410
^{66}Fe	-51.520
^{67}Fe	-46.530
^{68}Fe	-45.360
^{69}Fe	-40.230
^{70}Fe	-38.250
^{71}Fe	-33.080
^{72}Fe	-30.560
^{73}Fe	-24.740
^{74}Fe	-21.610
^{75}Fe	-15.590
^{76}Fe	-11.980
^{77}Fe	-3.970
^{78}Fe	1.850
^{79}Fe	10.080
^{80}Fe	16.550
^{81}Fe	25.490
^{82}Fe	31.980
^{83}Fe	41.160
^{84}Fe	48.570
^{85}Fe	57.770
^{86}Fe	64.450
^{87}Fe	74.040
^{88}Fe	81.630
^{89}Fe	91.220
^{90}Fe	98.680
^{91}Fe	109.430
^{92}Fe	116.360
^{44}Co	50.510
^{45}Co	34.720
^{46}Co	23.330
^{47}Co	9.580
^{48}Co	0.260
^{49}Co	-11.210
^{50}Co	-18.710
^{51}Co	-28.680
^{52}Co	-35.080
^{53}Co	-43.780
^{54}Co	-48.210
^{55}Co	-54.920
^{56}Co	-56.560
^{57}Co	-59.800
^{58}Co	-59.900
^{59}Co	-61.970
^{60}Co	-61.390
^{61}Co	-62.700
^{62}Co	-61.170
^{63}Co	-61.800
^{64}Co	-59.490
^{65}Co	-59.610
^{66}Co	-56.920
^{67}Co	-56.240

Isotope	Mass Excess
^{68}Co	-52.580
^{69}Co	-51.440
^{70}Co	-47.380
^{71}Co	-45.500
^{72}Co	-41.220
^{73}Co	-38.830
^{74}Co	-34.020
^{75}Co	-31.170
^{76}Co	-26.070
^{77}Co	-22.480
^{78}Co	-15.360
^{79}Co	-9.680
^{80}Co	-2.050
^{81}Co	4.180
^{82}Co	12.340
^{83}Co	18.720
^{84}Co	27.490
^{85}Co	34.780
^{86}Co	43.110
^{87}Co	49.910
^{88}Co	58.600
^{89}Co	65.960
^{90}Co	74.960
^{91}Co	82.190
^{92}Co	92.220
^{93}Co	100.320
^{94}Co	109.530
^{95}Co	117.790
^{96}Co	127.660
^{46}Ni	44.730
^{47}Ni	32.200
^{48}Ni	17.590
^{49}Ni	7.830
^{50}Ni	-4.660
^{51}Ni	-12.380
^{52}Ni	-23.570
^{53}Ni	-30.400
^{54}Ni	-40.400
^{55}Ni	-46.390
^{56}Ni	-54.400
^{57}Ni	-56.880
^{58}Ni	-60.840
^{59}Ni	-61.300
^{60}Ni	-64.640
^{61}Ni	-64.180
^{62}Ni	-66.440
^{63}Ni	-65.260
^{64}Ni	-66.960
^{65}Ni	-65.230
^{66}Ni	-66.270
^{67}Ni	-64.120
^{68}Ni	-64.310
^{69}Ni	-60.410
^{70}Ni	-60.470
^{71}Ni	-56.320
^{72}Ni	-55.190
^{73}Ni	-51.090
^{74}Ni	-49.520
^{75}Ni	-45.130
^{76}Ni	-43.120
^{77}Ni	-38.130
^{78}Ni	-36.040
^{79}Ni	-28.490
^{80}Ni	-24.120
^{81}Ni	-16.220
^{82}Ni	-11.160
^{83}Ni	-2.510
^{84}Ni	3.210
^{85}Ni	11.680
^{86}Ni	18.350
^{87}Ni	26.810
^{88}Ni	32.820
^{89}Ni	41.430
^{90}Ni	47.920
^{91}Ni	56.830

Isotope	Mass Excess
^{92}Ni	63.580
^{93}Ni	73.090
^{94}Ni	80.570
^{95}Ni	90.140
^{96}Ni	97.410
^{97}Ni	107.100
^{98}Ni	114.880
^{99}Ni	124.740
^{48}Cu	44.970
^{49}Cu	29.680
^{50}Cu	19.130
^{51}Cu	5.940
^{52}Cu	-2.780
^{53}Cu	-14.280
^{54}Cu	-21.970
^{55}Cu	-32.200
^{56}Cu	-38.650
^{57}Cu	-47.740
^{58}Cu	-50.880
^{59}Cu	-56.150
^{60}Cu	-57.630
^{61}Cu	-61.220
^{62}Cu	-61.950
^{63}Cu	-64.630
^{64}Cu	-64.430
^{65}Cu	-66.510
^{66}Cu	-65.570
^{67}Cu	-66.940
^{68}Cu	-65.240
^{69}Cu	-65.730
^{70}Cu	-63.260
^{71}Cu	-63.220
^{72}Cu	-60.380
^{73}Cu	-59.740
^{74}Cu	-56.490
^{75}Cu	-55.250
^{76}Cu	-51.520
^{77}Cu	-49.680
^{78}Cu	-45.520
^{79}Cu	-42.950
^{80}Cu	-36.820
^{81}Cu	-32.140
^{82}Cu	-25.290
^{83}Cu	-20.330
^{84}Cu	-13.110
^{85}Cu	-7.670
^{86}Cu	0.040
^{87}Cu	6.550
^{88}Cu	14.260
^{89}Cu	19.900
^{90}Cu	27.810
^{91}Cu	34.400
^{92}Cu	42.490
^{93}Cu	49.190
^{94}Cu	58.210
^{95}Cu	65.670
^{96}Cu	74.640
^{97}Cu	81.890
^{98}Cu	90.960
^{99}Cu	98.510
^{100}Cu	108.340
^{101}Cu	116.710
^{102}Cu	126.400
^{51}Zn	29.040
^{52}Zn	15.180
^{53}Zn	6.180
^{54}Zn	-6.700
^{55}Zn	-14.620
^{56}Zn	-25.950
^{57}Zn	-32.890
^{58}Zn	-42.470
^{59}Zn	-46.800
^{60}Zn	-53.600
^{61}Zn	-55.530

Isotope	Mass Excess
^{62}Zn	-60.330
^{63}Zn	-61.270
^{64}Zn	-65.070
^{65}Zn	-65.320
^{66}Zn	-68.340
^{67}Zn	-67.720
^{68}Zn	-69.950
^{69}Zn	-68.370
^{70}Zn	-69.920
^{71}Zn	-67.560
^{72}Zn	-68.540
^{73}Zn	-65.880
^{74}Zn	-66.560
^{75}Zn	-63.430
^{76}Zn	-63.130
^{77}Zn	-59.440
^{78}Zn	-58.510
^{79}Zn	-54.280
^{80}Zn	-52.620
^{81}Zn	-46.700
^{82}Zn	-42.790
^{83}Zn	-36.260
^{84}Zn	-32.180
^{85}Zn	-25.270
^{86}Zn	-20.720
^{87}Zn	-13.000
^{88}Zn	-7.580
^{89}Zn	0.250
^{90}Zn	5.250
^{91}Zn	13.300
^{92}Zn	19.100
^{93}Zn	26.890
^{94}Zn	32.870
^{95}Zn	41.660
^{96}Zn	48.480
^{97}Zn	57.330
^{98}Zn	63.840
^{99}Zn	72.480
^{100}Zn	79.380
^{101}Zn	89.410
^{102}Zn	97.170
^{103}Zn	106.790
^{104}Zn	114.540
^{105}Zn	124.360
^{53}Ga	27.900
^{54}Ga	17.640
^{55}Ga	4.680
^{56}Ga	-4.400
^{57}Ga	-15.730
^{58}Ga	-23.830
^{59}Ga	-33.780
^{60}Ga	-39.030
^{61}Ga	-46.220
^{62}Ga	-49.830
^{63}Ga	-55.420
^{64}Ga	-57.650
^{65}Ga	-61.740
^{66}Ga	-62.960
^{67}Ga	-65.920
^{68}Ga	-66.380
^{69}Ga	-68.750
^{70}Ga	-68.350
^{71}Ga	-69.940
^{72}Ga	-68.640
^{73}Ga	-69.710
^{74}Ga	-68.340
^{75}Ga	-68.850
^{76}Ga	-66.610
^{77}Ga	-66.480
^{78}Ga	-63.760
^{79}Ga	-62.960
^{80}Ga	-59.740
^{81}Ga	-57.900
^{82}Ga	-53.080
^{83}Ga	-49.160

Isotope	Mass Excess
^{84}Ga	-43.550
^{85}Ga	-39.580
^{86}Ga	-33.380
^{87}Ga	-28.950
^{88}Ga	-22.290
^{89}Ga	-17.260
^{90}Ga	-10.180
^{91}Ga	-5.340
^{92}Ga	1.790
^{93}Ga	7.270
^{94}Ga	14.770
^{95}Ga	20.930
^{96}Ga	29.160
^{97}Ga	35.530
^{98}Ga	43.590
^{99}Ga	50.060
^{100}Ga	58.150
^{101}Ga	64.900
^{102}Ga	73.890
^{103}Ga	81.500
^{104}Ga	90.570
^{105}Ga	98.180
^{106}Ga	107.280
^{107}Ga	114.250
^{108}Ga	123.360
^{55}Ge	27.470
^{56}Ge	13.350
^{57}Ge	4.020
^{58}Ge	-8.370
^{59}Ge	-16.590
^{60}Ge	-27.380
^{61}Ge	-33.220
^{62}Ge	-41.360
^{63}Ge	-45.860
^{64}Ge	-53.040
^{65}Ge	-55.580
^{66}Ge	-60.780
^{67}Ge	-62.120
^{68}Ge	-66.480
^{69}Ge	-66.830
^{70}Ge	-70.170
^{71}Ge	-69.950
^{72}Ge	-72.510
^{73}Ge	-71.500
^{74}Ge	-73.340
^{75}Ge	-71.720
^{76}Ge	-73.600
^{77}Ge	-71.530
^{78}Ge	-72.360
^{79}Ge	-69.790
^{80}Ge	-69.820
^{81}Ge	-66.480
^{82}Ge	-65.490
^{83}Ge	-60.780
^{84}Ge	-58.060
^{85}Ge	-52.470
^{86}Ge	-49.330
^{87}Ge	-43.320
^{88}Ge	-39.650
^{89}Ge	-33.200
^{90}Ge	-29.070
^{91}Ge	-22.190
^{92}Ge	-17.830
^{93}Ge	-11.030
^{94}Ge	-6.220
^{95}Ge	1.290
^{96}Ge	6.610
^{97}Ge	14.510
^{98}Ge	20.000
^{99}Ge	27.850
^{100}Ge	33.520
^{101}Ge	41.520
^{102}Ge	47.710
^{103}Ge	56.600
^{104}Ge	63.540

Isotope	Mass Excess
^{105}Ge	72.410
^{106}Ge	79.390
^{107}Ge	88.520
^{108}Ge	95.770
^{109}Ge	104.300
^{110}Ge	111.820
^{111}Ge	121.120
^{112}Ge	128.930
^{57}As	25.990
^{58}As	15.470
^{59}As	2.860
^{60}As	-6.250
^{61}As	-17.270
^{62}As	-24.050
^{63}As	-32.720
^{64}As	-38.350
^{65}As	-45.880
^{66}As	-49.970
^{67}As	-55.960
^{68}As	-58.460
^{69}As	-63.030
^{70}As	-64.330
^{71}As	-67.780
^{72}As	-68.580
^{73}As	-71.230
^{74}As	-71.240
^{75}As	-73.230
^{76}As	-72.510
^{77}As	-74.360
^{78}As	-73.230
^{79}As	-74.260
^{80}As	-72.630
^{81}As	-72.700
^{82}As	-70.520
^{83}As	-69.580
^{84}As	-65.670
^{85}As	-63.050
^{86}As	-58.200
^{87}As	-55.120
^{88}As	-49.890
^{89}As	-46.380
^{90}As	-40.770
^{91}As	-36.820
^{92}As	-30.760
^{93}As	-26.460
^{94}As	-20.330
^{95}As	-15.690
^{96}As	-8.950
^{97}As	-3.720
^{98}As	3.210
^{99}As	8.520
^{100}As	15.550
^{101}As	21.350
^{102}As	28.690
^{103}As	34.640
^{104}As	42.810
^{105}As	49.550
^{106}As	57.860
^{107}As	64.730
^{108}As	73.080
^{109}As	80.340
^{110}As	88.590
^{111}As	96.140
^{112}As	104.780
^{113}As	112.340
^{114}As	119.060
^{115}As	126.630
^{59}Se	25.080
^{60}Se	11.390
^{61}Se	2.030
^{62}Se	-9.770
^{63}Se	-16.930
^{64}Se	-26.650
^{65}Se	-32.560

Isotope	Mass Excess
^{66}Se	-41.170
^{67}Se	-46.050
^{68}Se	-53.550
^{69}Se	-56.330
^{70}Se	-61.870
^{71}Se	-63.390
^{72}Se	-67.770
^{73}Se	-68.560
^{74}Se	-72.320
^{75}Se	-72.500
^{76}Se	-75.490
^{77}Se	-74.930
^{78}Se	-77.460
^{79}Se	-76.510
^{80}Se	-78.450
^{81}Se	-77.010
^{82}Se	-78.110
^{83}Se	-75.720
^{84}Se	-75.680
^{85}Se	-71.780
^{86}Se	-70.180
^{87}Se	-65.410
^{88}Se	-63.170
^{89}Se	-58.140
^{90}Se	-55.440
^{91}Se	-49.910
^{92}Se	-46.820
^{93}Se	-40.940
^{94}Se	-37.500
^{95}Se	-31.510
^{96}Se	-27.560
^{97}Se	-20.950
^{98}Se	-16.440
^{99}Se	-9.670
^{100}Se	-5.360
^{101}Se	1.570
^{102}Se	6.700
^{103}Se	13.900
^{104}Se	19.270
^{105}Se	27.300
^{106}Se	33.430
^{107}Se	41.620
^{108}Se	47.780
^{109}Se	56.230
^{110}Se	62.900
^{111}Se	71.290
^{112}Se	77.700
^{113}Se	86.490
^{114}Se	93.490
^{115}Se	100.310
^{116}Se	107.450
^{117}Se	117.570
^{118}Se	126.430
^{61}Br	23.960
^{62}Br	14.190
^{63}Br	1.580
^{64}Br	-6.600
^{65}Br	-16.710
^{66}Br	-23.580
^{67}Br	-32.480
^{68}Br	-38.430
^{69}Br	-46.350
^{70}Br	-50.580
^{71}Br	-56.790
^{72}Br	-59.450
^{73}Br	-63.810
^{74}Br	-65.910
^{75}Br	-69.400
^{76}Br	-70.620
^{77}Br	-73.730
^{78}Br	-74.120
^{79}Br	-76.200
^{80}Br	-76.480
^{81}Br	-78.660
^{82}Br	-78.150

Isotope	Mass Excess
^{83}Br	-79.440
^{84}Br	-77.860
^{85}Br	-78.220
^{86}Br	-75.100
^{87}Br	-73.510
^{88}Br	-69.620
^{89}Br	-67.230
^{90}Br	-63.010
^{91}Br	-60.520
^{92}Br	-55.830
^{93}Br	-52.820
^{94}Br	-48.040
^{95}Br	-44.710
^{96}Br	-39.510
^{97}Br	-35.720
^{98}Br	-29.830
^{99}Br	-25.460
^{100}Br	-19.380
^{101}Br	-14.980
^{102}Br	-8.720
^{103}Br	-3.870
^{104}Br	2.810
^{105}Br	8.150
^{106}Br	15.480
^{107}Br	21.500
^{108}Br	29.120
^{109}Br	35.410
^{110}Br	44.340
^{111}Br	50.960
^{112}Br	57.170
^{113}Br	63.750
^{114}Br	71.660
^{115}Br	78.540
^{116}Br	84.550
^{117}Br	91.520
^{118}Br	101.170
^{119}Br	109.960
^{120}Br	120.630
^{121}Br	129.850
^{63}Kr	23.840
^{64}Kr	10.200
^{65}Kr	1.720
^{66}Kr	-9.410
^{67}Kr	-16.440
^{68}Kr	-26.390
^{69}Kr	-32.550
^{70}Kr	-41.500
^{71}Kr	-46.390
^{72}Kr	-54.030
^{73}Kr	-56.860
^{74}Kr	-62.870
^{75}Kr	-64.830
^{76}Kr	-69.560
^{77}Kr	-69.960
^{78}Kr	-74.160
^{79}Kr	-74.780
^{80}Kr	-77.500
^{81}Kr	-77.830
^{82}Kr	-80.880
^{83}Kr	-80.920
^{84}Kr	-82.860
^{85}Kr	-81.680
^{86}Kr	-83.000
^{87}Kr	-79.930
^{88}Kr	-79.100
^{89}Kr	-75.240
^{90}Kr	-73.690
^{91}Kr	-69.610
^{92}Kr	-67.950
^{93}Kr	-63.330
^{94}Kr	-61.310
^{95}Kr	-56.710
^{96}Kr	-54.160
^{97}Kr	-49.110
^{98}Kr	-46.040

Isotope	Mass Excess
^{99}Kr	-40.310
^{100}Kr	-36.710
^{101}Kr	-30.720
^{102}Kr	-26.930
^{103}Kr	-20.770
^{104}Kr	-16.760
^{105}Kr	-10.040
^{106}Kr	-5.390
^{107}Kr	1.820
^{108}Kr	7.400
^{109}Kr	14.910
^{110}Kr	21.650
^{111}Kr	29.640
^{112}Kr	35.600
^{113}Kr	41.500
^{114}Kr	47.400
^{115}Kr	55.200
^{116}Kr	61.100
^{117}Kr	67.640
^{118}Kr	73.830
^{119}Kr	83.490
^{120}Kr	91.710
^{121}Kr	102.130
^{122}Kr	110.810
^{123}Kr	121.100
^{124}Kr	130.400
^{66}Rb	13.700
^{67}Rb	2.210
^{68}Rb	-5.770
^{69}Rb	-15.920
^{70}Rb	-23.380
^{71}Rb	-32.510
^{72}Rb	-38.300
^{73}Rb	-46.430
^{74}Rb	-51.160
^{75}Rb	-57.790
^{76}Rb	-61.010
^{77}Rb	-65.680
^{78}Rb	-67.650
^{79}Rb	-70.720
^{80}Rb	-72.220
^{81}Rb	-75.240
^{82}Rb	-76.360
^{83}Rb	-79.620
^{84}Rb	-80.230
^{85}Rb	-82.650
^{86}Rb	-82.430
^{87}Rb	-83.910
^{88}Rb	-81.650
^{89}Rb	-80.860
^{90}Rb	-77.700
^{91}Rb	-76.290
^{92}Rb	-73.110
^{93}Rb	-71.590
^{94}Rb	-67.890
^{95}Rb	-66.040
^{96}Rb	-62.260
^{97}Rb	-59.900
^{98}Rb	-55.580
^{99}Rb	-52.610
^{100}Rb	-47.650
^{101}Rb	-44.130
^{102}Rb	-38.860
^{103}Rb	-35.120
^{104}Rb	-29.560
^{105}Rb	-25.650
^{106}Rb	-19.740
^{107}Rb	-14.990
^{108}Rb	-8.650
^{109}Rb	-3.190
^{110}Rb	4.030
^{111}Rb	10.570
^{112}Rb	18.010
^{113}Rb	22.260
^{114}Rb	29.110

Isotope	Mass Excess
^{115}Rb	34.800
^{116}Rb	42.010
^{117}Rb	47.790
^{118}Rb	53.740
^{119}Rb	59.720
^{120}Rb	68.900
^{121}Rb	76.970
^{122}Rb	86.940
^{123}Rb	95.400
^{124}Rb	105.340
^{125}Rb	114.480
^{126}Rb	125.420
^{127}Rb	133.430
^{128}Rb	143.150
^{68}Sr	10.570
^{69}Sr	2.430
^{70}Sr	-8.720
^{71}Sr	-15.850
^{72}Sr	-26.070
^{73}Sr	-32.380
^{74}Sr	-41.620
^{75}Sr	-47.040
^{76}Sr	-54.970
^{77}Sr	-58.350
^{78}Sr	-64.060
^{79}Sr	-66.150
^{80}Sr	-68.840
^{81}Sr	-70.650
^{82}Sr	-75.500
^{83}Sr	-76.770
^{84}Sr	-80.880
^{85}Sr	-81.610
^{86}Sr	-85.020
^{87}Sr	-85.010
^{88}Sr	-87.540
^{89}Sr	-85.210
^{90}Sr	-85.120
^{91}Sr	-82.050
^{92}Sr	-81.230
^{93}Sr	-77.990
^{94}Sr	-77.550
^{95}Sr	-74.190
^{96}Sr	-73.010
^{97}Sr	-69.310
^{98}Sr	-67.710
^{99}Sr	-63.460
^{100}Sr	-61.290
^{101}Sr	-56.470
^{102}Sr	-53.690
^{103}Sr	-48.510
^{104}Sr	-45.450
^{105}Sr	-40.040
^{106}Sr	-36.740
^{107}Sr	-30.860
^{108}Sr	-26.800
^{109}Sr	-20.320
^{110}Sr	-15.340
^{111}Sr	-8.380
^{112}Sr	-2.730
^{113}Sr	3.470
^{114}Sr	8.080
^{115}Sr	14.850
^{116}Sr	20.040
^{117}Sr	27.180
^{118}Sr	32.400
^{119}Sr	38.200
^{120}Sr	43.660
^{121}Sr	52.850
^{122}Sr	60.410
^{123}Sr	69.990
^{124}Sr	78.100
^{125}Sr	87.880
^{126}Sr	97.040
^{127}Sr	107.550
^{128}Sr	114.980

Isotope	Mass Excess
^{129}Sr	125.010
^{130}Sr	132.790
^{131}Sr	142.580
^{70}Y	13.760
^{71}Y	2.510
^{72}Y	-5.780
^{73}Y	-16.010
^{74}Y	-23.350
^{75}Y	-32.770
^{76}Y	-39.180
^{77}Y	-47.420
^{78}Y	-52.110
^{79}Y	-58.500
^{80}Y	-61.440
^{81}Y	-66.130
^{82}Y	-66.790
^{83}Y	-71.820
^{84}Y	-73.930
^{85}Y	-78.220
^{86}Y	-79.820
^{87}Y	-83.410
^{88}Y	-84.190
^{89}Y	-87.120
^{90}Y	-85.410
^{91}Y	-85.410
^{92}Y	-83.070
^{93}Y	-82.570
^{94}Y	-79.910
^{95}Y	-79.430
^{96}Y	-76.820
^{97}Y	-76.060
^{98}Y	-73.090
^{99}Y	-71.700
^{100}Y	-68.150
^{101}Y	-66.110
^{102}Y	-62.010
^{103}Y	-59.340
^{104}Y	-54.880
^{105}Y	-51.890
^{106}Y	-47.160
^{107}Y	-43.920
^{108}Y	-38.780
^{109}Y	-34.830
^{110}Y	-28.930
^{111}Y	-24.200
^{112}Y	-17.430
^{113}Y	-12.760
^{114}Y	-6.440
^{115}Y	-1.920
^{116}Y	4.090
^{117}Y	9.150
^{118}Y	15.660
^{119}Y	21.100
^{120}Y	26.390
^{121}Y	31.470
^{122}Y	40.170
^{123}Y	47.650
^{124}Y	56.720
^{125}Y	64.770
^{126}Y	74.050
^{127}Y	82.790
^{128}Y	92.720
^{129}Y	100.300
^{130}Y	109.440
^{131}Y	117.400
^{132}Y	126.550
^{133}Y	134.840
^{134}Y	144.500
^{72}Zr	11.340
^{73}Zr	2.980
^{74}Zr	-8.300
^{75}Zr	-15.840
^{76}Zr	-26.070
^{77}Zr	-32.690

Isotope	Mass Excess
^{78}Zr	-41.820
^{79}Zr	-47.180
^{80}Zr	-54.840
^{81}Zr	-58.010
^{82}Zr	-61.740
^{83}Zr	-64.610
^{84}Zr	-70.530
^{85}Zr	-72.820
^{86}Zr	-77.960
^{87}Zr	-79.720
^{88}Zr	-84.190
^{89}Zr	-85.240
^{90}Zr	-88.980
^{91}Zr	-87.330
^{92}Zr	-88.160
^{93}Zr	-85.940
^{94}Zr	-86.000
^{95}Zr	-83.600
^{96}Zr	-83.690
^{97}Zr	-81.080
^{98}Zr	-81.040
^{99}Zr	-78.160
^{100}Zr	-77.530
^{101}Zr	-74.130
^{102}Zr	-72.830
^{103}Zr	-68.820
^{104}Zr	-66.890
^{105}Zr	-62.490
^{106}Zr	-60.160
^{107}Zr	-55.560
^{108}Zr	-52.970
^{109}Zr	-47.970
^{110}Zr	-44.620
^{111}Zr	-38.860
^{112}Zr	-34.870
^{113}Zr	-28.150
^{114}Zr	-24.430
^{115}Zr	-18.490
^{116}Zr	-14.520
^{117}Zr	-8.540
^{118}Zr	-4.180
^{119}Zr	2.250
^{120}Zr	7.100
^{121}Zr	12.360
^{122}Zr	16.810
^{123}Zr	25.500
^{124}Zr	32.390
^{125}Zr	41.440
^{126}Zr	48.870
^{127}Zr	58.560
^{128}Zr	66.780
^{129}Zr	76.380
^{130}Zr	83.620
^{131}Zr	92.470
^{132}Zr	100.000
^{133}Zr	109.240
^{134}Zr	116.910
^{135}Zr	126.560
^{136}Zr	134.490
^{137}Zr	144.180
^{74}Nb	14.390
^{75}Nb	3.470
^{76}Nb	-4.970
^{77}Nb	-15.460
^{78}Nb	-22.940
^{79}Nb	-32.410
^{80}Nb	-38.710
^{81}Nb	-46.550
^{82}Nb	-51.020
^{83}Nb	-56.890
^{84}Nb	-59.250
^{85}Nb	-65.350
^{86}Nb	-68.510
^{87}Nb	-73.800
^{88}Nb	-76.410

Isotope	Mass Excess
^{89}Nb	-81.030
^{90}Nb	-82.880
^{91}Nb	-86.620
^{92}Nb	-86.070
^{93}Nb	-86.970
^{94}Nb	-85.530
^{95}Nb	-85.800
^{96}Nb	-84.270
^{97}Nb	-84.440
^{98}Nb	-82.420
^{99}Nb	-82.390
^{100}Nb	-80.160
^{101}Nb	-79.730
^{102}Nb	-77.080
^{103}Nb	-75.940
^{104}Nb	-72.630
^{105}Nb	-70.760
^{106}Nb	-67.010
^{107}Nb	-64.760
^{108}Nb	-60.730
^{109}Nb	-58.240
^{110}Nb	-53.900
^{111}Nb	-50.710
^{112}Nb	-45.630
^{113}Nb	-41.200
^{114}Nb	-35.870
^{115}Nb	-32.220
^{116}Nb	-27.050
^{117}Nb	-23.140
^{118}Nb	-17.790
^{119}Nb	-13.490
^{120}Nb	-7.740
^{121}Nb	-2.880
^{122}Nb	1.440
^{123}Nb	6.150
^{124}Nb	14.140
^{125}Nb	20.970
^{126}Nb	29.510
^{127}Nb	36.720
^{128}Nb	46.200
^{129}Nb	54.110
^{130}Nb	63.080
^{131}Nb	70.290
^{132}Nb	78.690
^{133}Nb	86.100
^{134}Nb	94.850
^{135}Nb	102.490
^{136}Nb	111.560
^{137}Nb	119.430
^{138}Nb	128.590
^{139}Nb	136.590
^{140}Nb	145.830
^{77}Mo	3.590
^{78}Mo	-7.050
^{79}Mo	-14.100
^{80}Mo	-25.370
^{81}Mo	-31.760
^{82}Mo	-39.590
^{83}Mo	-44.990
^{84}Mo	-51.840
^{85}Mo	-55.750
^{86}Mo	-62.720
^{87}Mo	-66.030
^{88}Mo	-72.200
^{89}Mo	-74.960
^{90}Mo	-80.440
^{91}Mo	-82.420
^{92}Mo	-87.170
^{93}Mo	-86.590
^{94}Mo	-88.340
^{95}Mo	-87.030
^{96}Mo	-88.200
^{97}Mo	-86.640
^{98}Mo	-87.440
^{99}Mo	-85.470

Isotope	Mass Excess
^{100}Mo	-85.990
^{101}Mo	-83.710
^{102}Mo	-83.800
^{103}Mo	-81.270
^{104}Mo	-80.770
^{105}Mo	-77.660
^{106}Mo	-76.520
^{107}Mo	-72.860
^{108}Mo	-71.280
^{109}Mo	-67.360
^{110}Mo	-65.570
^{111}Mo	-61.310
^{112}Mo	-58.780
^{113}Mo	-53.140
^{114}Mo	-50.470
^{115}Mo	-45.520
^{116}Mo	-42.550
^{117}Mo	-37.430
^{118}Mo	-34.120
^{119}Mo	-28.850
^{120}Mo	-25.190
^{121}Mo	-19.570
^{122}Mo	-15.340
^{123}Mo	-11.060
^{124}Mo	-7.170
^{125}Mo	0.770
^{126}Mo	7.160
^{127}Mo	15.570
^{128}Mo	22.390
^{129}Mo	32.270
^{130}Mo	39.150
^{131}Mo	48.070
^{132}Mo	54.830
^{133}Mo	63.350
^{134}Mo	70.240
^{135}Mo	78.980
^{136}Mo	86.120
^{137}Mo	95.180
^{138}Mo	102.500
^{139}Mo	111.680
^{140}Mo	119.200
^{141}Mo	128.430
^{142}Mo	136.030
^{143}Mo	145.190
^{144}Mo	152.830
^{79}Tc	4.140
^{80}Tc	-3.930
^{81}Tc	-14.120
^{82}Tc	-21.250
^{83}Tc	-30.650
^{84}Tc	-36.950
^{85}Tc	-43.890
^{86}Tc	-49.020
^{87}Tc	-56.540
^{88}Tc	-60.650
^{89}Tc	-67.020
^{90}Tc	-70.600
^{91}Tc	-76.220
^{92}Tc	-79.000
^{93}Tc	-83.880
^{94}Tc	-84.060
^{95}Tc	-85.930
^{96}Tc	-85.380
^{97}Tc	-86.950
^{98}Tc	-86.040
^{99}Tc	-86.900
^{100}Tc	-85.640
^{101}Tc	-86.090
^{102}Tc	-84.530
^{103}Tc	-84.750
^{104}Tc	-82.730
^{105}Tc	-82.320
^{106}Tc	-79.800
^{107}Tc	-78.860
^{108}Tc	-75.890

Isotope	Mass Excess
^{109}Tc	-73.690
^{110}Tc	-70.460
^{111}Tc	-68.850
^{112}Tc	-65.210
^{113}Tc	-63.060
^{114}Tc	-58.890
^{115}Tc	-56.310
^{116}Tc	-51.970
^{117}Tc	-49.050
^{118}Tc	-44.600
^{119}Tc	-41.390
^{120}Tc	-36.690
^{121}Tc	-33.140
^{122}Tc	-28.090
^{123}Tc	-23.950
^{124}Tc	-20.280
^{125}Tc	-16.500
^{126}Tc	-9.130
^{127}Tc	-2.810
^{128}Tc	5.080
^{129}Tc	12.090
^{130}Tc	21.030
^{131}Tc	27.830
^{132}Tc	36.180
^{133}Tc	42.990
^{134}Tc	50.990
^{135}Tc	57.690
^{136}Tc	66.040
^{137}Tc	73.120
^{138}Tc	81.640
^{139}Tc	88.830
^{140}Tc	97.540
^{141}Tc	105.090
^{142}Tc	113.790
^{143}Tc	121.320
^{144}Tc	130.060
^{145}Tc	137.760
^{146}Tc	147.140
^{147}Tc	155.860
^{81}Ru	4.830
^{82}Ru	-6.240
^{83}Ru	-12.240
^{84}Ru	-22.440
^{85}Ru	-28.920
^{86}Ru	-38.440
^{87}Ru	-44.100
^{88}Ru	-52.790
^{89}Ru	-57.100
^{90}Ru	-64.290
^{91}Ru	-68.010
^{92}Ru	-74.480
^{93}Ru	-77.390
^{94}Ru	-83.080
^{95}Ru	-83.320
^{96}Ru	-85.970
^{97}Ru	-85.540
^{98}Ru	-87.880
^{99}Ru	-87.110
^{100}Ru	-88.680
^{101}Ru	-87.520
^{102}Ru	-88.630
^{103}Ru	-87.060
^{104}Ru	-87.820
^{105}Ru	-85.790
^{106}Ru	-86.010
^{107}Ru	-83.580
^{108}Ru	-83.260
^{109}Ru	-80.430
^{110}Ru	-79.410
^{111}Ru	-76.300
^{112}Ru	-75.350
^{113}Ru	-71.810
^{114}Ru	-70.320
^{115}Ru	-66.240
^{116}Ru	-64.290

Isotope	Mass Excess
^{117}Ru	-60.040
^{118}Ru	-57.810
^{119}Ru	-53.410
^{120}Ru	-50.840
^{121}Ru	-46.310
^{122}Ru	-43.370
^{123}Ru	-38.450
^{124}Ru	-35.800
^{125}Ru	-31.630
^{126}Ru	-28.430
^{127}Ru	-21.080
^{128}Ru	-15.330
^{129}Ru	-7.500
^{130}Ru	-1.350
^{131}Ru	7.720
^{132}Ru	14.210
^{133}Ru	22.490
^{134}Ru	28.940
^{135}Ru	37.010
^{136}Ru	43.250
^{137}Ru	51.560
^{138}Ru	58.110
^{139}Ru	66.580
^{140}Ru	73.290
^{141}Ru	81.920
^{142}Ru	88.920
^{143}Ru	97.670
^{144}Ru	104.750
^{145}Ru	113.570
^{146}Ru	120.760
^{147}Ru	130.180
^{148}Ru	138.220
^{149}Ru	148.070
^{150}Ru	156.120
^{83}Rh	4.910
^{84}Rh	-2.380
^{85}Rh	-12.710
^{86}Rh	-19.930
^{87}Rh	-29.660
^{88}Rh	-36.110
^{89}Rh	-44.990
^{90}Rh	-50.430
^{91}Rh	-58.130
^{92}Rh	-62.580
^{93}Rh	-69.200
^{94}Rh	-72.870
^{95}Rh	-78.680
^{96}Rh	-79.820
^{97}Rh	-82.700
^{98}Rh	-83.220
^{99}Rh	-85.330
^{100}Rh	-85.330
^{101}Rh	-86.990
^{102}Rh	-86.530
^{103}Rh	-87.730
^{104}Rh	-86.680
^{105}Rh	-87.350
^{106}Rh	-86.180
^{107}Rh	-86.330
^{108}Rh	-84.720
^{109}Rh	-84.010
^{110}Rh	-81.950
^{111}Rh	-81.600
^{112}Rh	-79.150
^{113}Rh	-78.310
^{114}Rh	-75.400
^{115}Rh	-74.030
^{116}Rh	-70.570
^{117}Rh	-68.760
^{118}Rh	-65.100
^{119}Rh	-62.940
^{120}Rh	-59.190
^{121}Rh	-56.790
^{122}Rh	-52.830
^{123}Rh	-50.050

Isotope	Mass Excess
^{124}Rh	-45.710
^{125}Rh	-43.160
^{126}Rh	-39.550
^{127}Rh	-36.500
^{128}Rh	-29.620
^{129}Rh	-24.020
^{130}Rh	-16.760
^{131}Rh	-10.170
^{132}Rh	-2.100
^{133}Rh	4.260
^{134}Rh	12.030
^{135}Rh	18.370
^{136}Rh	26.070
^{137}Rh	32.200
^{138}Rh	39.880
^{139}Rh	46.470
^{140}Rh	54.410
^{141}Rh	61.010
^{142}Rh	69.140
^{143}Rh	76.080
^{144}Rh	84.240
^{145}Rh	91.330
^{146}Rh	99.710
^{147}Rh	106.960
^{148}Rh	115.860
^{149}Rh	123.930
^{150}Rh	133.120
^{151}Rh	141.150
^{152}Rh	150.340
^{153}Rh	158.340
^{86}Pd	-4.960
^{87}Pd	-12.350
^{88}Pd	-22.890
^{89}Pd	-29.510
^{90}Pd	-39.230
^{91}Pd	-45.160
^{92}Pd	-54.030
^{93}Pd	-58.680
^{94}Pd	-66.270
^{95}Pd	-69.980
^{96}Pd	-76.690
^{97}Pd	-77.840
^{98}Pd	-81.550
^{99}Pd	-81.830
^{100}Pd	-84.880
^{101}Pd	-85.030
^{102}Pd	-87.430
^{103}Pd	-87.010
^{104}Pd	-88.890
^{105}Pd	-87.940
^{106}Pd	-89.300
^{107}Pd	-88.050
^{108}Pd	-88.950
^{109}Pd	-87.390
^{110}Pd	-87.910
^{111}Pd	-85.460
^{112}Pd	-85.800
^{113}Pd	-83.450
^{114}Pd	-83.280
^{115}Pd	-80.410
^{116}Pd	-79.750
^{117}Pd	-76.350
^{118}Pd	-75.200
^{119}Pd	-71.670
^{120}Pd	-70.310
^{121}Pd	-66.600
^{122}Pd	-64.830
^{123}Pd	-60.850
^{124}Pd	-59.040
^{125}Pd	-55.160
^{126}Pd	-53.370
^{127}Pd	-49.450
^{128}Pd	-46.840
^{129}Pd	-40.230
^{130}Pd	-35.200

Isotope	Mass Excess
^{131}Pd	-27.930
^{132}Pd	-22.400
^{133}Pd	-13.920
^{134}Pd	-7.990
^{135}Pd	-0.120
^{136}Pd	5.600
^{137}Pd	13.430
^{138}Pd	19.120
^{139}Pd	26.760
^{140}Pd	32.690
^{141}Pd	40.670
^{142}Pd	46.840
^{143}Pd	54.950
^{144}Pd	61.390
^{145}Pd	69.580
^{146}Pd	76.170
^{147}Pd	84.620
^{148}Pd	91.410
^{149}Pd	100.250
^{150}Pd	107.690
^{151}Pd	116.860
^{152}Pd	124.400
^{153}Pd	133.570
^{154}Pd	141.030
^{155}Pd	150.230
^{156}Pd	157.780
^{88}Ag	-2.490
^{89}Ag	-13.220
^{90}Ag	-20.660
^{91}Ag	-30.540
^{92}Ag	-37.200
^{93}Ag	-46.250
^{94}Ag	-52.020
^{95}Ag	-59.940
^{96}Ag	-64.560
^{97}Ag	-71.140
^{98}Ag	-73.370
^{99}Ag	-77.080
^{100}Ag	-78.310
^{101}Ag	-81.330
^{102}Ag	-82.280
^{103}Ag	-84.660
^{104}Ag	-84.850
^{105}Ag	-86.820
^{106}Ag	-86.540
^{107}Ag	-87.920
^{108}Ag	-87.210
^{109}Ag	-88.210
^{110}Ag	-87.150
^{111}Ag	-87.790
^{112}Ag	-86.170
^{113}Ag	-86.560
^{114}Ag	-84.890
^{115}Ag	-84.820
^{116}Ag	-82.570
^{117}Ag	-82.030
^{118}Ag	-79.210
^{119}Ag	-78.310
^{120}Ag	-75.190
^{121}Ag	-73.940
^{122}Ag	-70.750
^{123}Ag	-69.640
^{124}Ag	-66.320
^{125}Ag	-64.890
^{126}Ag	-61.500
^{127}Ag	-59.660
^{128}Ag	-56.310
^{129}Ag	-53.810
^{130}Ag	-47.740
^{131}Ag	-42.780
^{132}Ag	-36.060
^{133}Ag	-30.640
^{134}Ag	-22.560
^{135}Ag	-16.970
^{136}Ag	-9.430

Isotope	Mass Excess
^{137}Ag	-3.840
^{138}Ag	3.710
^{139}Ag	9.470
^{140}Ag	16.570
^{141}Ag	22.410
^{142}Ag	29.900
^{143}Ag	36.040
^{144}Ag	43.620
^{145}Ag	50.000
^{146}Ag	57.690
^{147}Ag	64.220
^{148}Ag	72.200
^{149}Ag	78.970
^{150}Ag	87.260
^{151}Ag	94.560
^{152}Ag	103.290
^{153}Ag	110.720
^{154}Ag	119.380
^{155}Ag	126.760
^{156}Ag	135.480
^{157}Ag	142.970
^{158}Ag	151.650
^{159}Ag	159.270
^{160}Ag	168.470
^{90}Cd	-5.410
^{91}Cd	-13.000
^{92}Cd	-23.710
^{93}Cd	-30.600
^{94}Cd	-40.440
^{95}Cd	-46.680
^{96}Cd	-55.850
^{97}Cd	-60.530
^{98}Cd	-68.170
^{99}Cd	-70.190
^{100}Cd	-74.890
^{101}Cd	-75.950
^{102}Cd	-79.520
^{103}Cd	-80.590
^{104}Cd	-83.640
^{105}Cd	-84.130
^{106}Cd	-86.730
^{107}Cd	-86.640
^{108}Cd	-88.760
^{109}Cd	-88.190
^{110}Cd	-89.830
^{111}Cd	-88.780
^{112}Cd	-90.070
^{113}Cd	-88.680
^{114}Cd	-89.610
^{115}Cd	-87.800
^{116}Cd	-88.300
^{117}Cd	-86.100
^{118}Cd	-86.240
^{119}Cd	-83.510
^{120}Cd	-83.640
^{121}Cd	-80.850
^{122}Cd	-80.410
^{123}Cd	-77.260
^{124}Cd	-76.940
^{125}Cd	-73.840
^{126}Cd	-72.780
^{127}Cd	-69.430
^{128}Cd	-68.290
^{129}Cd	-65.030
^{130}Cd	-63.120
^{131}Cd	-57.080
^{132}Cd	-52.680
^{133}Cd	-45.930
^{134}Cd	-41.010
^{135}Cd	-33.960
^{136}Cd	-28.850
^{137}Cd	-20.760
^{138}Cd	-15.430
^{139}Cd	-7.490
^{140}Cd	-2.180

Isotope	Mass Excess
^{141}Cd	4.900
^{142}Cd	10.210
^{143}Cd	17.690
^{144}Cd	23.320
^{145}Cd	30.910
^{146}Cd	36.770
^{147}Cd	44.440
^{148}Cd	50.470
^{149}Cd	58.380
^{150}Cd	64.730
^{151}Cd	72.920
^{152}Cd	79.730
^{153}Cd	88.360
^{154}Cd	95.360
^{155}Cd	104.010
^{156}Cd	110.900
^{157}Cd	119.530
^{158}Cd	126.590
^{159}Cd	135.280
^{160}Cd	142.500
^{161}Cd	151.610
^{162}Cd	159.410
^{163}Cd	168.360
^{92}In	-3.380
^{93}In	-14.300
^{94}In	-21.980
^{95}In	-31.990
^{96}In	-39.010
^{97}In	-48.220
^{98}In	-54.130
^{99}In	-62.170
^{100}In	-64.960
^{101}In	-69.540
^{102}In	-71.530
^{103}In	-75.210
^{104}In	-76.750
^{105}In	-79.790
^{106}In	-80.920
^{107}In	-83.610
^{108}In	-84.180
^{109}In	-86.350
^{110}In	-86.310
^{111}In	-88.080
^{112}In	-87.640
^{113}In	-89.040
^{114}In	-88.210
^{115}In	-89.210
^{116}In	-87.940
^{117}In	-88.660
^{118}In	-87.120
^{119}In	-87.520
^{120}In	-85.680
^{121}In	-85.770
^{122}In	-83.580
^{123}In	-83.430
^{124}In	-80.970
^{125}In	-80.630
^{126}In	-77.990
^{127}In	-77.400
^{128}In	-74.600
^{129}In	-73.620
^{130}In	-70.560
^{131}In	-68.690
^{132}In	-63.320
^{133}In	-59.030
^{134}In	-52.730
^{135}In	-47.920
^{136}In	-41.350
^{137}In	-36.230
^{138}In	-28.820
^{139}In	-23.750
^{140}In	-16.630
^{141}In	-10.590
^{142}In	-3.980
^{143}In	1.390

Isotope	Mass Excess
^{144}In	8.410
^{145}In	13.940
^{146}In	21.030
^{147}In	26.880
^{148}In	34.040
^{149}In	40.040
^{150}In	47.430
^{151}In	53.740
^{152}In	61.520
^{153}In	68.240
^{154}In	76.260
^{155}In	83.040
^{156}In	91.240
^{157}In	98.170
^{158}In	106.390
^{159}In	113.360
^{160}In	121.890
^{161}In	129.260
^{162}In	137.890
^{163}In	145.110
^{164}In	153.620
^{165}In	161.200
^{166}In	169.870
^{94}Sn	-6.700
^{95}Sn	-14.520
^{96}Sn	-25.330
^{97}Sn	-32.520
^{98}Sn	-42.580
^{99}Sn	-48.730
^{100}Sn	-57.870
^{101}Sn	-60.990
^{102}Sn	-66.380
^{103}Sn	-68.340
^{104}Sn	-72.700
^{105}Sn	-74.200
^{106}Sn	-78.000
^{107}Sn	-78.850
^{108}Sn	-82.210
^{109}Sn	-82.720
^{110}Sn	-85.830
^{111}Sn	-85.950
^{112}Sn	-88.500
^{113}Sn	-88.040
^{114}Sn	-90.300
^{115}Sn	-89.570
^{116}Sn	-91.260
^{117}Sn	-90.180
^{118}Sn	-91.430
^{119}Sn	-89.910
^{120}Sn	-90.920
^{121}Sn	-89.310
^{122}Sn	-90.010
^{123}Sn	-88.000
^{124}Sn	-88.490
^{125}Sn	-86.190
^{126}Sn	-86.360
^{127}Sn	-83.840
^{128}Sn	-83.710
^{129}Sn	-80.920
^{130}Sn	-80.550
^{131}Sn	-77.560
^{132}Sn	-76.410
^{133}Sn	-70.990
^{134}Sn	-67.200
^{135}Sn	-61.000
^{136}Sn	-56.670
^{137}Sn	-50.210
^{138}Sn	-45.700
^{139}Sn	-38.920
^{140}Sn	-34.200
^{141}Sn	-26.770
^{142}Sn	-21.900
^{143}Sn	-14.240
^{144}Sn	-9.490
^{145}Sn	-2.500

Isotope	Mass Excess
^{146}Sn	2.600
^{147}Sn	9.660
^{148}Sn	15.080
^{149}Sn	22.200
^{150}Sn	27.710
^{151}Sn	35.100
^{152}Sn	40.910
^{153}Sn	48.610
^{154}Sn	54.870
^{155}Sn	62.900
^{156}Sn	69.250
^{157}Sn	77.420
^{158}Sn	84.040
^{159}Sn	92.180
^{160}Sn	98.710
^{161}Sn	107.280
^{162}Sn	113.940
^{163}Sn	122.460
^{164}Sn	129.330
^{165}Sn	137.910
^{166}Sn	144.770
^{167}Sn	153.390
^{168}Sn	160.550
^{169}Sn	169.280
^{97}Sb	-12.310
^{98}Sb	-20.220
^{99}Sb	-30.290
^{100}Sb	-37.330
^{101}Sb	-46.600
^{102}Sb	-50.660
^{103}Sb	-56.490
^{104}Sb	-59.350
^{105}Sb	-63.920
^{106}Sb	-66.330
^{107}Sb	-70.320
^{108}Sb	-72.140
^{109}Sb	-75.680
^{110}Sb	-77.080
^{111}Sb	-80.070
^{112}Sb	-80.920
^{113}Sb	-83.520
^{114}Sb	-83.940
^{115}Sb	-86.250
^{116}Sb	-86.320
^{117}Sb	-88.250
^{118}Sb	-87.900
^{119}Sb	-89.340
^{120}Sb	-88.550
^{121}Sb	-89.610
^{122}Sb	-88.410
^{123}Sb	-89.180
^{124}Sb	-87.710
^{125}Sb	-88.260
^{126}Sb	-86.450
^{127}Sb	-86.850
^{128}Sb	-84.850
^{129}Sb	-85.120
^{130}Sb	-82.830
^{131}Sb	-82.640
^{132}Sb	-80.120
^{133}Sb	-78.970
^{134}Sb	-74.290
^{135}Sb	-70.440
^{136}Sb	-64.920
^{137}Sb	-60.690
^{138}Sb	-54.090
^{139}Sb	-49.880
^{140}Sb	-43.730
^{141}Sb	-39.250
^{142}Sb	-32.360
^{143}Sb	-27.860
^{144}Sb	-21.640
^{145}Sb	-16.910
^{146}Sb	-10.610
^{147}Sb	-5.620

Isotope	Mass Excess
^{148}Sb	1.010
^{149}Sb	6.280
^{150}Sb	12.990
^{151}Sb	18.510
^{152}Sb	25.410
^{153}Sb	31.190
^{154}Sb	38.380
^{155}Sb	44.580
^{156}Sb	52.090
^{157}Sb	58.440
^{158}Sb	66.180
^{159}Sb	72.770
^{160}Sb	80.480
^{161}Sb	87.150
^{162}Sb	95.160
^{163}Sb	101.880
^{164}Sb	109.920
^{165}Sb	116.680
^{166}Sb	124.860
^{167}Sb	131.610
^{168}Sb	139.890
^{169}Sb	147.020
^{170}Sb	155.590
^{171}Sb	163.200
^{172}Sb	171.460
^{99}Te	-10.020
^{100}Te	-21.090
^{101}Te	-27.920
^{102}Te	-38.030
^{103}Te	-42.420
^{104}Te	-49.330
^{105}Te	-52.260
^{106}Te	-57.940
^{107}Te	-60.360
^{108}Te	-65.250
^{109}Te	-67.260
^{110}Te	-71.540
^{111}Te	-73.040
^{112}Te	-76.800
^{113}Te	-77.930
^{114}Te	-81.150
^{115}Te	-81.950
^{116}Te	-84.720
^{117}Te	-84.610
^{118}Te	-87.180
^{119}Te	-86.970
^{120}Te	-89.070
^{121}Te	-88.430
^{122}Te	-90.010
^{123}Te	-88.920
^{124}Te	-90.290
^{125}Te	-88.870
^{126}Te	-89.960
^{127}Te	-88.250
^{128}Te	-89.230
^{129}Te	-87.540
^{130}Te	-88.030
^{131}Te	-85.900
^{132}Te	-86.260
^{133}Te	-83.860
^{134}Te	-83.300
^{135}Te	-78.630
^{136}Te	-75.500
^{137}Te	-69.960
^{138}Te	-66.310
^{139}Te	-59.970
^{140}Te	-56.230
^{141}Te	-50.110
^{142}Te	-46.360
^{143}Te	-40.390
^{144}Te	-36.510
^{145}Te	-30.430
^{146}Te	-26.210
^{147}Te	-19.970
^{148}Te	-15.500

Isotope	Mass Excess
^{149}Te	-9.020
^{150}Te	-4.240
^{151}Te	2.490
^{152}Te	7.530
^{153}Te	14.370
^{154}Te	19.620
^{155}Te	26.660
^{156}Te	32.410
^{157}Te	39.930
^{158}Te	45.850
^{159}Te	53.570
^{160}Te	59.710
^{161}Te	67.450
^{162}Te	73.690
^{163}Te	81.560
^{164}Te	87.910
^{165}Te	96.070
^{166}Te	102.400
^{167}Te	110.500
^{168}Te	117.150
^{169}Te	125.080
^{170}Te	131.850
^{171}Te	140.560
^{172}Te	147.230
^{173}Te	155.800
^{174}Te	162.510
^{175}Te	170.640
^{176}Te	177.490
^{101}I	-8.070
^{102}I	-15.830
^{103}I	-25.600
^{104}I	-31.230
^{105}I	-38.440
^{106}I	-42.450
^{107}I	-48.520
^{108}I	-51.950
^{109}I	-57.010
^{110}I	-59.870
^{111}I	-64.310
^{112}I	-66.690
^{113}I	-70.550
^{114}I	-72.530
^{115}I	-75.850
^{116}I	-77.280
^{117}I	-80.160
^{118}I	-81.060
^{119}I	-83.520
^{120}I	-83.970
^{121}I	-85.780
^{122}I	-85.760
^{123}I	-87.400
^{124}I	-86.900
^{125}I	-88.200
^{126}I	-87.410
^{127}I	-88.410
^{128}I	-87.380
^{129}I	-88.190
^{130}I	-86.880
^{131}I	-87.550
^{132}I	-86.080
^{133}I	-86.570
^{134}I	-84.680
^{135}I	-84.280
^{136}I	-80.210
^{137}I	-77.150
^{138}I	-71.500
^{139}I	-68.250
^{140}I	-63.150
^{141}I	-59.690
^{142}I	-54.350
^{143}I	-50.770
^{144}I	-45.370
^{145}I	-41.550
^{146}I	-36.140
^{147}I	-31.970

Isotope	Mass Excess
^{148}I	-26.300
^{149}I	-21.910
^{150}I	-15.910
^{151}I	-11.240
^{152}I	-5.160
^{153}I	-0.180
^{154}I	6.120
^{155}I	11.340
^{156}I	17.780
^{157}I	23.470
^{158}I	30.540
^{159}I	36.410
^{160}I	43.630
^{161}I	49.670
^{162}I	57.010
^{163}I	63.160
^{164}I	70.680
^{165}I	77.160
^{166}I	84.810
^{167}I	91.250
^{168}I	98.830
^{169}I	105.500
^{170}I	113.350
^{171}I	119.750
^{172}I	128.000
^{173}I	134.850
^{174}I	142.970
^{175}I	149.800
^{176}I	157.410
^{177}I	164.260
^{178}I	172.080
^{179}I	179.340
^{103}Xe	-5.290
^{104}Xe	-15.870
^{105}Xe	-21.520
^{106}Xe	-29.500
^{107}Xe	-34.240
^{108}Xe	-41.380
^{109}Xe	-45.020
^{110}Xe	-50.910
^{111}Xe	-53.860
^{112}Xe	-59.200
^{113}Xe	-61.760
^{114}Xe	-66.460
^{115}Xe	-68.540
^{116}Xe	-72.610
^{117}Xe	-74.070
^{118}Xe	-77.670
^{119}Xe	-78.660
^{120}Xe	-81.790
^{121}Xe	-82.300
^{122}Xe	-84.950
^{123}Xe	-85.040
^{124}Xe	-87.100
^{125}Xe	-86.770
^{126}Xe	-88.420
^{127}Xe	-87.650
^{128}Xe	-89.080
^{129}Xe	-88.020
^{130}Xe	-89.240
^{131}Xe	-87.980
^{132}Xe	-89.200
^{133}Xe	-87.920
^{134}Xe	-88.750
^{135}Xe	-86.990
^{136}Xe	-87.160
^{137}Xe	-83.230
^{138}Xe	-80.610
^{139}Xe	-75.520
^{140}Xe	-72.750
^{141}Xe	-67.980
^{142}Xe	-65.220
^{143}Xe	-60.190
^{144}Xe	-57.050
^{145}Xe	-51.750

Isotope	Mass Excess
^{146}Xe	-48.660
^{147}Xe	-43.390
^{148}Xe	-39.790
^{149}Xe	-34.150
^{150}Xe	-30.240
^{151}Xe	-24.430
^{152}Xe	-20.260
^{153}Xe	-14.270
^{154}Xe	-9.910
^{155}Xe	-3.760
^{156}Xe	0.920
^{157}Xe	7.480
^{158}Xe	12.690
^{159}Xe	19.700
^{160}Xe	25.140
^{161}Xe	32.320
^{162}Xe	37.900
^{163}Xe	45.230
^{164}Xe	50.990
^{165}Xe	58.500
^{166}Xe	64.390
^{167}Xe	72.070
^{168}Xe	78.240
^{169}Xe	85.940
^{170}Xe	92.010
^{171}Xe	100.010
^{172}Xe	106.280
^{173}Xe	114.250
^{174}Xe	120.750
^{175}Xe	128.770
^{176}Xe	135.080
^{177}Xe	142.860
^{178}Xe	149.350
^{179}Xe	157.030
^{180}Xe	164.040
^{181}Xe	174.400
^{182}Xe	183.490
^{106}Cs	-9.410
^{107}Cs	-17.670
^{108}Cs	-23.330
^{109}Cs	-30.690
^{110}Cs	-35.750
^{111}Cs	-42.190
^{112}Cs	-45.810
^{113}Cs	-51.160
^{114}Cs	-54.420
^{115}Cs	-59.480
^{116}Cs	-62.190
^{117}Cs	-66.420
^{118}Cs	-68.530
^{119}Cs	-72.200
^{120}Cs	-73.860
^{121}Cs	-77.100
^{122}Cs	-78.300
^{123}Cs	-80.980
^{124}Cs	-81.730
^{125}Cs	-83.720
^{126}Cs	-83.980
^{127}Cs	-85.680
^{128}Cs	-85.480
^{129}Cs	-86.880
^{130}Cs	-86.380
^{131}Cs	-87.430
^{132}Cs	-86.600
^{133}Cs	-87.670
^{134}Cs	-86.750
^{135}Cs	-87.950
^{136}Cs	-86.810
^{137}Cs	-87.030
^{138}Cs	-83.750
^{139}Cs	-81.110
^{140}Cs	-76.570
^{141}Cs	-74.210
^{142}Cs	-70.260
^{143}Cs	-67.600

Isotope	Mass Excess
^{144}Cs	-63.320
^{145}Cs	-60.280
^{146}Cs	-55.510
^{147}Cs	-52.510
^{148}Cs	-47.800
^{149}Cs	-44.230
^{150}Cs	-39.190
^{151}Cs	-35.350
^{152}Cs	-30.170
^{153}Cs	-26.100
^{154}Cs	-20.610
^{155}Cs	-16.370
^{156}Cs	-10.760
^{157}Cs	-6.150
^{158}Cs	-0.090
^{159}Cs	5.070
^{160}Cs	11.660
^{161}Cs	16.990
^{162}Cs	23.720
^{163}Cs	29.270
^{164}Cs	36.170
^{165}Cs	41.910
^{166}Cs	48.990
^{167}Cs	54.790
^{168}Cs	62.080
^{169}Cs	68.180
^{170}Cs	75.500
^{171}Cs	81.680
^{172}Cs	89.030
^{173}Cs	95.350
^{174}Cs	102.740
^{175}Cs	109.590
^{176}Cs	117.180
^{177}Cs	123.500
^{178}Cs	130.820
^{179}Cs	137.280
^{180}Cs	144.600
^{181}Cs	151.480
^{182}Cs	161.460
^{183}Cs	170.380
^{184}Cs	180.690
^{185}Cs	189.700
^{108}Ba	-7.990
^{109}Ba	-13.810
^{110}Ba	-22.220
^{111}Ba	-27.530
^{112}Ba	-34.700
^{113}Ba	-38.580
^{114}Ba	-44.940
^{115}Ba	-48.500
^{116}Ba	-54.380
^{117}Ba	-57.230
^{118}Ba	-62.130
^{119}Ba	-64.360
^{120}Ba	-68.680
^{121}Ba	-70.410
^{122}Ba	-74.310
^{123}Ba	-75.600
^{124}Ba	-78.940
^{125}Ba	-79.750
^{126}Ba	-82.490
^{127}Ba	-82.750
^{128}Ba	-84.900
^{129}Ba	-84.750
^{130}Ba	-86.570
^{131}Ba	-86.070
^{132}Ba	-87.630
^{133}Ba	-86.800
^{134}Ba	-88.380
^{135}Ba	-87.450
^{136}Ba	-89.180
^{137}Ba	-88.090
^{138}Ba	-88.920
^{139}Ba	-85.600
^{140}Ba	-83.760

Isotope	Mass Excess
^{141}Ba	-79.290
^{142}Ba	-77.600
^{143}Ba	-73.830
^{144}Ba	-71.920
^{145}Ba	-67.670
^{146}Ba	-65.200
^{147}Ba	-60.740
^{148}Ba	-58.300
^{149}Ba	-53.780
^{150}Ba	-50.820
^{151}Ba	-45.940
^{152}Ba	-42.600
^{153}Ba	-37.440
^{154}Ba	-33.900
^{155}Ba	-28.510
^{156}Ba	-24.740
^{157}Ba	-19.210
^{158}Ba	-15.160
^{159}Ba	-9.100
^{160}Ba	-4.450
^{161}Ba	2.060
^{162}Ba	6.950
^{163}Ba	13.660
^{164}Ba	18.780
^{165}Ba	25.620
^{166}Ba	30.960
^{167}Ba	38.010
^{168}Ba	43.450
^{169}Ba	50.540
^{170}Ba	56.290
^{171}Ba	63.620
^{172}Ba	69.400
^{173}Ba	76.640
^{174}Ba	82.690
^{175}Ba	90.110
^{176}Ba	96.610
^{177}Ba	104.030
^{178}Ba	110.130
^{179}Ba	117.450
^{180}Ba	123.510
^{181}Ba	130.710
^{182}Ba	137.380
^{183}Ba	147.290
^{184}Ba	155.590
^{185}Ba	165.930
^{186}Ba	174.640
^{187}Ba	184.200
^{188}Ba	192.490
^{189}Ba	201.880
^{110}La	-2.100
^{111}La	-10.610
^{112}La	-16.450
^{113}La	-24.340
^{114}La	-29.400
^{115}La	-36.140
^{116}La	-40.530
^{117}La	-46.590
^{118}La	-50.100
^{119}La	-55.150
^{120}La	-57.920
^{121}La	-62.310
^{122}La	-64.680
^{123}La	-68.640
^{124}La	-70.500
^{125}La	-73.890
^{126}La	-75.270
^{127}La	-78.020
^{128}La	-78.840
^{129}La	-81.000
^{130}La	-81.380
^{131}La	-83.210
^{132}La	-83.240
^{133}La	-84.840
^{134}La	-84.570
^{135}La	-85.970

Isotope	Mass Excess
^{136}La	-85.580
^{137}La	-87.390
^{138}La	-86.840
^{139}La	-87.780
^{140}La	-84.920
^{141}La	-83.260
^{142}La	-79.310
^{143}La	-77.870
^{144}La	-74.780
^{145}La	-73.050
^{146}La	-69.240
^{147}La	-66.980
^{148}La	-63.410
^{149}La	-61.120
^{150}La	-57.230
^{151}La	-54.360
^{152}La	-50.010
^{153}La	-46.780
^{154}La	-42.140
^{155}La	-38.630
^{156}La	-33.720
^{157}La	-30.010
^{158}La	-24.980
^{159}La	-21.020
^{160}La	-15.380
^{161}La	-10.770
^{162}La	-4.700
^{163}La	0.180
^{164}La	6.410
^{165}La	11.510
^{166}La	17.980
^{167}La	23.250
^{168}La	29.790
^{169}La	35.200
^{170}La	41.810
^{171}La	47.530
^{172}La	54.420
^{173}La	60.190
^{174}La	67.000
^{175}La	73.030
^{176}La	80.050
^{177}La	86.750
^{178}La	93.620
^{179}La	99.690
^{180}La	106.520
^{181}La	112.620
^{182}La	119.490
^{183}La	126.040
^{184}La	135.320
^{185}La	143.790
^{186}La	153.730
^{187}La	162.310
^{188}La	171.380
^{189}La	179.700
^{190}La	188.780
^{191}La	197.280
^{192}La	206.600
^{113}Ce	-7.190
^{114}Ce	-15.560
^{115}Ce	-21.220
^{116}Ce	-29.210
^{117}Ce	-33.800
^{118}Ce	-40.570
^{119}Ce	-44.270
^{120}Ce	-50.010
^{121}Ce	-52.950
^{122}Ce	-57.990
^{123}Ce	-60.410
^{124}Ce	-64.930
^{125}Ce	-66.870
^{126}Ce	-70.820
^{127}Ce	-72.240
^{128}Ce	-75.540
^{129}Ce	-76.390
^{130}Ce	-79.170

Isotope	Mass Excess
^{131}Ce	-79.430
^{132}Ce	-81.890
^{133}Ce	-81.960
^{134}Ce	-84.020
^{135}Ce	-83.760
^{136}Ce	-85.670
^{137}Ce	-85.320
^{138}Ce	-87.620
^{139}Ce	-87.150
^{140}Ce	-88.680
^{141}Ce	-85.880
^{142}Ce	-84.780
^{143}Ce	-81.040
^{144}Ce	-80.230
^{145}Ce	-77.190
^{146}Ce	-76.000
^{147}Ce	-72.330
^{148}Ce	-70.830
^{149}Ce	-67.490
^{150}Ce	-65.800
^{151}Ce	-62.050
^{152}Ce	-59.780
^{153}Ce	-55.560
^{154}Ce	-52.900
^{155}Ce	-48.380
^{156}Ce	-45.400
^{157}Ce	-40.550
^{158}Ce	-37.290
^{159}Ce	-32.320
^{160}Ce	-28.700
^{161}Ce	-23.230
^{162}Ce	-19.010
^{163}Ce	-13.040
^{164}Ce	-8.620
^{165}Ce	-2.430
^{166}Ce	2.230
^{167}Ce	8.610
^{168}Ce	13.430
^{169}Ce	20.030
^{170}Ce	25.000
^{171}Ce	31.560
^{172}Ce	36.820
^{173}Ce	43.720
^{174}Ce	49.070
^{175}Ce	55.930
^{176}Ce	61.530
^{177}Ce	68.900
^{178}Ce	74.940
^{179}Ce	81.870
^{180}Ce	87.480
^{181}Ce	94.390
^{182}Ce	99.940
^{183}Ce	106.820
^{184}Ce	112.900
^{185}Ce	122.330
^{186}Ce	130.130
^{187}Ce	140.240
^{188}Ce	148.270
^{189}Ce	157.280
^{190}Ce	165.150
^{191}Ce	174.310
^{192}Ce	182.800
^{193}Ce	191.680
^{194}Ce	199.330
^{195}Ce	208.780
^{115}Pr	-4.410
^{116}Pr	-10.870
^{117}Pr	-19.110
^{118}Pr	-24.690
^{119}Pr	-31.870
^{120}Pr	-36.330
^{121}Pr	-42.190
^{122}Pr	-45.750
^{123}Pr	-50.830
^{124}Pr	-53.850

Isotope	Mass Excess
^{125}Pr	-58.420
^{126}Pr	-60.930
^{127}Pr	-64.940
^{128}Pr	-66.900
^{129}Pr	-70.280
^{130}Pr	-71.620
^{131}Pr	-74.360
^{132}Pr	-75.260
^{133}Pr	-77.640
^{134}Pr	-78.100
^{135}Pr	-80.130
^{136}Pr	-80.460
^{137}Pr	-82.350
^{138}Pr	-82.540
^{139}Pr	-84.830
^{140}Pr	-84.880
^{141}Pr	-86.530
^{142}Pr	-84.300
^{143}Pr	-83.280
^{144}Pr	-80.250
^{145}Pr	-79.410
^{146}Pr	-76.970
^{147}Pr	-75.790
^{148}Pr	-72.980
^{149}Pr	-71.860
^{150}Pr	-69.090
^{151}Pr	-67.470
^{152}Pr	-64.310
^{153}Pr	-62.170
^{154}Pr	-58.510
^{155}Pr	-55.930
^{156}Pr	-51.910
^{157}Pr	-48.990
^{158}Pr	-44.640
^{159}Pr	-41.530
^{160}Pr	-36.930
^{161}Pr	-33.350
^{162}Pr	-28.360
^{163}Pr	-24.300
^{164}Pr	-18.680
^{165}Pr	-14.340
^{166}Pr	-8.580
^{167}Pr	-3.950
^{168}Pr	2.040
^{169}Pr	6.850
^{170}Pr	13.000
^{171}Pr	17.960
^{172}Pr	24.180
^{173}Pr	29.230
^{174}Pr	35.700
^{175}Pr	41.050
^{176}Pr	47.500
^{177}Pr	53.070
^{178}Pr	60.010
^{179}Pr	66.040
^{180}Pr	72.600
^{181}Pr	78.280
^{182}Pr	84.660
^{183}Pr	90.220
^{184}Pr	96.720
^{185}Pr	102.750
^{186}Pr	111.730
^{187}Pr	119.620
^{188}Pr	129.220
^{189}Pr	137.070
^{190}Pr	145.580
^{191}Pr	153.460
^{192}Pr	162.710
^{193}Pr	170.700
^{194}Pr	179.170
^{195}Pr	186.870
^{196}Pr	195.760
^{197}Pr	203.760
^{198}Pr	212.890
^{118}Nd	-10.690

Isotope	Mass Excess
^{119}Nd	-16.660
^{120}Nd	-24.830
^{121}Nd	-29.400
^{122}Nd	-35.900
^{123}Nd	-39.560
^{124}Nd	-45.300
^{125}Nd	-48.360
^{126}Nd	-53.540
^{127}Nd	-56.130
^{128}Nd	-60.750
^{129}Nd	-62.800
^{130}Nd	-66.760
^{131}Nd	-68.170
^{132}Nd	-71.490
^{133}Nd	-72.200
^{134}Nd	-75.130
^{135}Nd	-75.730
^{136}Nd	-78.320
^{137}Nd	-78.620
^{138}Nd	-81.010
^{139}Nd	-81.300
^{140}Nd	-84.100
^{141}Nd	-84.290
^{142}Nd	-86.480
^{143}Nd	-84.330
^{144}Nd	-83.820
^{145}Nd	-80.850
^{146}Nd	-80.520
^{147}Nd	-78.220
^{148}Nd	-77.710
^{149}Nd	-75.160
^{150}Nd	-74.700
^{151}Nd	-72.020
^{152}Nd	-71.020
^{153}Nd	-67.890
^{154}Nd	-66.400
^{155}Nd	-62.800
^{156}Nd	-60.820
^{157}Nd	-56.900
^{158}Nd	-54.540
^{159}Nd	-50.280
^{160}Nd	-47.660
^{161}Nd	-43.190
^{162}Nd	-40.190
^{163}Nd	-35.200
^{164}Nd	-31.540
^{165}Nd	-25.930
^{166}Nd	-21.930
^{167}Nd	-16.240
^{168}Nd	-12.080
^{169}Nd	-6.120
^{170}Nd	-1.750
^{171}Nd	4.340
^{172}Nd	8.840
^{173}Nd	15.040
^{174}Nd	19.680
^{175}Nd	26.150
^{176}Nd	31.070
^{177}Nd	37.700
^{178}Nd	42.760
^{179}Nd	50.260
^{180}Nd	55.310
^{181}Nd	61.950
^{182}Nd	67.170
^{183}Nd	73.550
^{184}Nd	78.660
^{185}Nd	85.130
^{186}Nd	90.810
^{187}Nd	99.770
^{188}Nd	107.120
^{189}Nd	116.690
^{190}Nd	124.060
^{191}Nd	132.730
^{192}Nd	140.250
^{193}Nd	149.410

Isotope	Mass Excess
^{194}Nd	156.900
^{195}Nd	165.550
^{196}Nd	172.750
^{197}Nd	181.490
^{198}Nd	189.060
^{199}Nd	198.120
^{200}Nd	205.850
^{201}Nd	215.010
^{120}Pm	-5.910
^{121}Pm	-14.240
^{122}Pm	-19.750
^{123}Pm	-26.630
^{124}Pm	-30.930
^{125}Pm	-36.770
^{126}Pm	-40.490
^{127}Pm	-45.730
^{128}Pm	-48.910
^{129}Pm	-53.600
^{130}Pm	-56.270
^{131}Pm	-60.300
^{132}Pm	-62.370
^{133}Pm	-65.720
^{134}Pm	-67.060
^{135}Pm	-69.880
^{136}Pm	-71.070
^{137}Pm	-73.610
^{138}Pm	-74.290
^{139}Pm	-76.710
^{140}Pm	-77.480
^{141}Pm	-80.310
^{142}Pm	-81.010
^{143}Pm	-83.330
^{144}Pm	-81.750
^{145}Pm	-81.310
^{146}Pm	-78.920
^{147}Pm	-78.780
^{148}Pm	-77.100
^{149}Pm	-76.770
^{150}Pm	-74.780
^{151}Pm	-74.420
^{152}Pm	-72.290
^{153}Pm	-71.400
^{154}Pm	-68.870
^{155}Pm	-67.470
^{156}Pm	-64.440
^{157}Pm	-62.610
^{158}Pm	-59.240
^{159}Pm	-57.020
^{160}Pm	-53.310
^{161}Pm	-50.770
^{162}Pm	-46.780
^{163}Pm	-43.860
^{164}Pm	-39.340
^{165}Pm	-35.760
^{166}Pm	-30.610
^{167}Pm	-26.650
^{168}Pm	-21.280
^{169}Pm	-17.190
^{170}Pm	-11.700
^{171}Pm	-7.320
^{172}Pm	-1.600
^{173}Pm	2.890
^{174}Pm	8.660
^{175}Pm	13.280
^{176}Pm	19.330
^{177}Pm	24.220
^{178}Pm	30.490
^{179}Pm	35.470
^{180}Pm	42.490
^{181}Pm	47.540
^{182}Pm	53.710
^{183}Pm	59.000
^{184}Pm	65.050
^{185}Pm	70.050
^{186}Pm	76.100

Isotope	Mass Excess
^{187}Pm	81.760
^{188}Pm	90.310
^{189}Pm	97.640
^{190}Pm	106.530
^{191}Pm	113.820
^{192}Pm	122.340
^{193}Pm	129.780
^{194}Pm	138.620
^{195}Pm	145.940
^{196}Pm	154.040
^{197}Pm	161.310
^{198}Pm	169.650
^{199}Pm	177.200
^{200}Pm	185.840
^{201}Pm	193.520
^{202}Pm	202.320
^{203}Pm	209.860
^{204}Pm	218.650
^{205}Pm	226.490
^{123}Sm	-11.090
^{124}Sm	-18.860
^{125}Sm	-23.290
^{126}Sm	-29.690
^{127}Sm	-33.540
^{128}Sm	-39.440
^{129}Sm	-42.680
^{130}Sm	-48.050
^{131}Sm	-50.770
^{132}Sm	-55.560
^{133}Sm	-57.620
^{134}Sm	-61.590
^{135}Sm	-63.070
^{136}Sm	-66.520
^{137}Sm	-67.740
^{138}Sm	-70.830
^{139}Sm	-71.550
^{140}Sm	-74.510
^{141}Sm	-75.340
^{142}Sm	-78.660
^{143}Sm	-79.440
^{144}Sm	-82.320
^{145}Sm	-80.790
^{146}Sm	-80.900
^{147}Sm	-78.620
^{148}Sm	-78.940
^{149}Sm	-77.220
^{150}Sm	-77.470
^{151}Sm	-75.500
^{152}Sm	-75.770
^{153}Sm	-73.720
^{154}Sm	-73.380
^{155}Sm	-70.900
^{156}Sm	-70.090
^{157}Sm	-67.130
^{158}Sm	-65.820
^{159}Sm	-62.620
^{160}Sm	-60.950
^{161}Sm	-57.380
^{162}Sm	-55.360
^{163}Sm	-51.450
^{164}Sm	-49.050
^{165}Sm	-44.580
^{166}Sm	-41.380
^{167}Sm	-36.320
^{168}Sm	-32.980
^{169}Sm	-27.770
^{170}Sm	-24.170
^{171}Sm	-18.730
^{172}Sm	-14.830
^{173}Sm	-9.190
^{174}Sm	-5.150
^{175}Sm	0.590
^{176}Sm	4.760
^{177}Sm	10.770
^{178}Sm	15.330

Isotope	Mass Excess
^{179}Sm	21.650
^{180}Sm	26.210
^{181}Sm	33.190
^{182}Sm	37.810
^{183}Sm	44.060
^{184}Sm	48.880
^{185}Sm	54.940
^{186}Sm	59.570
^{187}Sm	65.650
^{188}Sm	70.900
^{189}Sm	79.420
^{190}Sm	86.320
^{191}Sm	95.180
^{192}Sm	102.040
^{193}Sm	110.640
^{194}Sm	117.720
^{195}Sm	126.420
^{196}Sm	133.390
^{197}Sm	141.420
^{198}Sm	148.210
^{199}Sm	156.660
^{200}Sm	163.800
^{201}Sm	172.340
^{202}Sm	179.750
^{203}Sm	188.410
^{204}Sm	195.920
^{205}Sm	204.270
^{206}Sm	211.710
^{207}Sm	220.340
^{208}Sm	228.050
^{125}Eu	-7.590
^{126}Eu	-12.810
^{127}Eu	-19.700
^{128}Eu	-24.240
^{129}Eu	-30.300
^{130}Eu	-34.220
^{131}Eu	-39.750
^{132}Eu	-43.160
^{133}Eu	-48.030
^{134}Eu	-50.660
^{135}Eu	-54.730
^{136}Eu	-56.740
^{137}Eu	-60.230
^{138}Eu	-62.010
^{139}Eu	-65.270
^{140}Eu	-66.400
^{141}Eu	-69.300
^{142}Eu	-70.650
^{143}Eu	-73.960
^{144}Eu	-75.190
^{145}Eu	-78.190
^{146}Eu	-77.110
^{147}Eu	-77.410
^{148}Eu	-75.780
^{149}Eu	-76.290
^{150}Eu	-75.080
^{151}Eu	-75.420
^{152}Eu	-74.030
^{153}Eu	-74.280
^{154}Eu	-72.710
^{155}Eu	-72.460
^{156}Eu	-70.470
^{157}Eu	-69.700
^{158}Eu	-67.340
^{159}Eu	-66.150
^{160}Eu	-63.480
^{161}Eu	-61.950
^{162}Eu	-58.870
^{163}Eu	-56.950
^{164}Eu	-53.560
^{165}Eu	-51.250
^{166}Eu	-47.340
^{167}Eu	-44.370
^{168}Eu	-39.870
^{169}Eu	-36.460

Isotope	Mass Excess
^{170}Eu	-31.730
^{171}Eu	-28.210
^{172}Eu	-23.220
^{173}Eu	-19.350
^{174}Eu	-14.110
^{175}Eu	-10.050
^{176}Eu	-4.740
^{177}Eu	-0.560
^{178}Eu	4.970
^{179}Eu	9.510
^{180}Eu	15.380
^{181}Eu	20.000
^{182}Eu	26.420
^{183}Eu	31.000
^{184}Eu	36.860
^{185}Eu	41.710
^{186}Eu	47.390
^{187}Eu	52.110
^{188}Eu	57.690
^{189}Eu	62.910
^{190}Eu	71.030
^{191}Eu	77.920
^{192}Eu	86.180
^{193}Eu	93.000
^{194}Eu	101.430
^{195}Eu	108.400
^{196}Eu	116.710
^{197}Eu	123.550
^{198}Eu	131.240
^{199}Eu	138.070
^{200}Eu	146.060
^{201}Eu	153.180
^{202}Eu	161.380
^{203}Eu	168.630
^{204}Eu	176.910
^{205}Eu	184.010
^{206}Eu	192.370
^{207}Eu	199.790
^{208}Eu	208.000
^{209}Eu	215.570
^{210}Eu	224.440
^{211}Eu	232.480
^{128}Gd	-11.350
^{129}Gd	-16.060
^{130}Gd	-22.810
^{131}Gd	-26.880
^{132}Gd	-33.150
^{133}Gd	-36.680
^{134}Gd	-42.200
^{135}Gd	-44.940
^{136}Gd	-49.600
^{137}Gd	-51.710
^{138}Gd	-55.990
^{139}Gd	-57.680
^{140}Gd	-61.560
^{141}Gd	-62.030
^{142}Gd	-66.210
^{143}Gd	-67.640
^{144}Gd	-71.330
^{145}Gd	-72.780
^{146}Gd	-76.250
^{147}Gd	-75.240
^{148}Gd	-76.070
^{149}Gd	-74.490
^{150}Gd	-75.430
^{151}Gd	-74.220
^{152}Gd	-75.100
^{153}Gd	-73.680
^{154}Gd	-74.460
^{155}Gd	-72.920
^{156}Gd	-73.180
^{157}Gd	-71.240
^{158}Gd	-71.020
^{159}Gd	-68.740
^{160}Gd	-68.120

Isotope	Mass Excess
^{161}Gd	-65.500
^{162}Gd	-64.510
^{163}Gd	-61.540
^{164}Gd	-60.180
^{165}Gd	-56.870
^{166}Gd	-55.030
^{167}Gd	-51.240
^{168}Gd	-48.790
^{169}Gd	-44.400
^{170}Gd	-41.710
^{171}Gd	-37.120
^{172}Gd	-34.100
^{173}Gd	-29.190
^{174}Gd	-25.830
^{175}Gd	-20.640
^{176}Gd	-17.050
^{177}Gd	-11.760
^{178}Gd	-8.000
^{179}Gd	-2.460
^{180}Gd	1.670
^{181}Gd	7.490
^{182}Gd	11.800
^{183}Gd	18.130
^{184}Gd	22.270
^{185}Gd	28.150
^{186}Gd	32.600
^{187}Gd	38.320
^{188}Gd	42.680
^{189}Gd	48.260
^{190}Gd	53.090
^{191}Gd	61.180
^{192}Gd	67.640
^{193}Gd	75.960
^{194}Gd	82.400
^{195}Gd	90.760
^{196}Gd	97.330
^{197}Gd	105.500
^{198}Gd	112.080
^{199}Gd	119.790
^{200}Gd	126.150
^{201}Gd	134.180
^{202}Gd	140.880
^{203}Gd	149.050
^{204}Gd	155.870
^{205}Gd	164.120
^{206}Gd	170.890
^{207}Gd	179.210
^{208}Gd	186.130
^{209}Gd	194.480
^{210}Gd	201.740
^{211}Gd	210.420
^{212}Gd	218.040
^{213}Gd	227.250
^{214}Gd	235.170
^{130}Tb	-5.600
^{131}Tb	-12.750
^{132}Tb	-17.520
^{133}Tb	-23.890
^{134}Tb	-28.110
^{135}Tb	-33.760
^{136}Tb	-37.110
^{137}Tb	-41.800
^{138}Tb	-44.470
^{139}Tb	-48.650
^{140}Tb	-51.140
^{141}Tb	-54.990
^{142}Tb	-55.960
^{143}Tb	-60.090
^{144}Tb	-62.050
^{145}Tb	-65.740
^{146}Tb	-67.500
^{147}Tb	-71.180
^{148}Tb	-70.560
^{149}Tb	-71.590
^{150}Tb	-70.670

Isotope	Mass Excess
^{151}Tb	-71.760
^{152}Tb	-71.130
^{153}Tb	-72.060
^{154}Tb	-71.160
^{155}Tb	-71.970
^{156}Tb	-70.920
^{157}Tb	-71.210
^{158}Tb	-69.770
^{159}Tb	-69.640
^{160}Tb	-67.830
^{161}Tb	-67.350
^{162}Tb	-65.210
^{163}Tb	-64.400
^{164}Tb	-61.920
^{165}Tb	-60.630
^{166}Tb	-57.820
^{167}Tb	-56.130
^{168}Tb	-52.840
^{169}Tb	-50.530
^{170}Tb	-46.720
^{171}Tb	-44.130
^{172}Tb	-40.030
^{173}Tb	-37.080
^{174}Tb	-32.660
^{175}Tb	-29.330
^{176}Tb	-24.560
^{177}Tb	-20.920
^{178}Tb	-16.170
^{179}Tb	-12.390
^{180}Tb	-7.330
^{181}Tb	-3.190
^{182}Tb	2.260
^{183}Tb	6.590
^{184}Tb	12.410
^{185}Tb	16.520
^{186}Tb	21.960
^{187}Tb	26.430
^{188}Tb	31.850
^{189}Tb	36.200
^{190}Tb	41.570
^{191}Tb	46.170
^{192}Tb	53.980
^{193}Tb	60.470
^{194}Tb	68.280
^{195}Tb	74.750
^{196}Tb	82.560
^{197}Tb	89.070
^{198}Tb	96.850
^{199}Tb	105.540
^{200}Tb	110.690
^{201}Tb	117.040
^{202}Tb	124.660
^{203}Tb	131.300
^{204}Tb	139.110
^{205}Tb	145.850
^{206}Tb	153.730
^{207}Tb	160.720
^{208}Tb	168.420
^{209}Tb	175.250
^{210}Tb	183.290
^{211}Tb	190.540
^{212}Tb	198.950
^{213}Tb	206.540
^{214}Tb	215.340
^{215}Tb	223.180
^{216}Tb	231.880
^{217}Tb	239.820
^{218}Tb	248.910
^{133}Dy	-9.380
^{134}Dy	-16.420
^{135}Dy	-20.710
^{136}Dy	-27.020
^{137}Dy	-30.480
^{138}Dy	-35.790
^{139}Dy	-38.620

Isotope	Mass Excess
^{140}Dy	-43.460
^{141}Dy	-45.830
^{142}Dy	-50.280
^{143}Dy	-51.270
^{144}Dy	-56.030
^{145}Dy	-58.060
^{146}Dy	-62.210
^{147}Dy	-64.250
^{148}Dy	-68.310
^{149}Dy	-67.960
^{150}Dy	-69.430
^{151}Dy	-68.410
^{152}Dy	-69.930
^{153}Dy	-69.270
^{154}Dy	-70.720
^{155}Dy	-69.840
^{156}Dy	-71.110
^{157}Dy	-70.090
^{158}Dy	-70.910
^{159}Dy	-69.490
^{160}Dy	-69.900
^{161}Dy	-68.160
^{162}Dy	-68.240
^{163}Dy	-66.170
^{164}Dy	-65.910
^{165}Dy	-63.520
^{166}Dy	-62.780
^{167}Dy	-60.060
^{168}Dy	-58.900
^{169}Dy	-55.760
^{170}Dy	-53.960
^{171}Dy	-50.280
^{172}Dy	-48.220
^{173}Dy	-44.240
^{174}Dy	-41.850
^{175}Dy	-37.490
^{176}Dy	-34.670
^{177}Dy	-30.000
^{178}Dy	-26.920
^{179}Dy	-22.080
^{180}Dy	-18.770
^{181}Dy	-13.700
^{182}Dy	-10.010
^{183}Dy	-4.550
^{184}Dy	-0.640
^{185}Dy	5.130
^{186}Dy	8.790
^{187}Dy	14.270
^{188}Dy	18.330
^{189}Dy	23.730
^{190}Dy	27.690
^{191}Dy	32.980
^{192}Dy	37.300
^{193}Dy	45.080
^{194}Dy	50.950
^{195}Dy	58.940
^{196}Dy	65.180
^{197}Dy	73.010
^{198}Dy	79.100
^{199}Dy	86.850
^{200}Dy	92.930
^{201}Dy	100.310
^{202}Dy	106.250
^{203}Dy	113.870
^{204}Dy	120.120
^{205}Dy	127.870
^{206}Dy	134.210
^{207}Dy	142.120
^{208}Dy	148.640
^{209}Dy	156.620
^{210}Dy	162.960
^{211}Dy	170.960
^{212}Dy	177.700
^{213}Dy	186.080
^{214}Dy	193.320

Isotope	Mass Excess
^{215}Dy	201.990
^{216}Dy	209.430
^{217}Dy	218.090
^{218}Dy	225.610
^{219}Dy	234.800
^{220}Dy	242.690
^{221}Dy	252.070
^{136}Ho	-11.270
^{137}Ho	-17.710
^{138}Ho	-21.750
^{139}Ho	-27.160
^{140}Ho	-30.520
^{141}Ho	-35.280
^{142}Ho	-38.430
^{143}Ho	-42.850
^{144}Ho	-44.240
^{145}Ho	-48.990
^{146}Ho	-51.570
^{147}Ho	-55.760
^{148}Ho	-58.000
^{149}Ho	-62.170
^{150}Ho	-62.240
^{151}Ho	-63.960
^{152}Ho	-63.640
^{153}Ho	-65.250
^{154}Ho	-65.080
^{155}Ho	-66.640
^{156}Ho	-66.290
^{157}Ho	-67.580
^{158}Ho	-67.030
^{159}Ho	-67.850
^{160}Ho	-66.980
^{161}Ho	-67.470
^{162}Ho	-66.260
^{163}Ho	-66.430
^{164}Ho	-64.890
^{165}Ho	-64.720
^{166}Ho	-62.880
^{167}Ho	-62.210
^{168}Ho	-60.020
^{169}Ho	-59.000
^{170}Ho	-56.340
^{171}Ho	-54.660
^{172}Ho	-51.530
^{173}Ho	-49.610
^{174}Ho	-46.190
^{175}Ho	-43.840
^{176}Ho	-39.950
^{177}Ho	-37.170
^{178}Ho	-32.970
^{179}Ho	-29.860
^{180}Ho	-25.500
^{181}Ho	-22.190
^{182}Ho	-17.560
^{183}Ho	-13.880
^{184}Ho	-8.900
^{185}Ho	-4.860
^{186}Ho	0.400
^{187}Ho	4.020
^{188}Ho	9.150
^{189}Ho	13.160
^{190}Ho	18.140
^{191}Ho	22.100
^{192}Ho	27.130
^{193}Ho	31.350
^{194}Ho	38.710
^{195}Ho	44.620
^{196}Ho	52.390
^{197}Ho	58.510
^{198}Ho	65.850
^{199}Ho	71.880
^{200}Ho	79.230
^{201}Ho	85.220
^{202}Ho	92.220
^{203}Ho	98.170

Isotope	Mass Excess
^{204}Ho	105.380
^{205}Ho	111.590
^{206}Ho	118.960
^{207}Ho	125.270
^{208}Ho	132.770
^{209}Ho	139.370
^{210}Ho	146.870
^{211}Ho	153.220
^{212}Ho	160.840
^{213}Ho	167.700
^{214}Ho	175.620
^{215}Ho	182.730
^{216}Ho	190.970
^{217}Ho	198.310
^{218}Ho	206.550
^{219}Ho	214.010
^{220}Ho	222.690
^{221}Ho	230.640
^{222}Ho	239.600
^{223}Ho	247.630
^{224}Ho	256.620
^{138}Er	-9.870
^{139}Er	-14.060
^{140}Er	-19.980
^{141}Er	-23.500
^{142}Er	-28.870
^{143}Er	-31.960
^{144}Er	-36.920
^{145}Er	-38.510
^{146}Er	-43.840
^{147}Er	-46.490
^{148}Er	-51.230
^{149}Er	-53.580
^{150}Er	-58.270
^{151}Er	-58.420
^{152}Er	-60.670
^{153}Er	-60.480
^{154}Er	-62.460
^{155}Er	-62.240
^{156}Er	-64.220
^{157}Er	-63.860
^{158}Er	-65.560
^{159}Er	-65.070
^{160}Er	-66.480
^{161}Er	-65.620
^{162}Er	-66.640
^{163}Er	-65.500
^{164}Er	-66.180
^{165}Er	-64.760
^{166}Er	-65.100
^{167}Er	-63.350
^{168}Er	-63.240
^{169}Er	-61.150
^{170}Er	-60.580
^{171}Er	-58.060
^{172}Er	-56.930
^{173}Er	-53.920
^{174}Er	-52.520
^{175}Er	-49.210
^{176}Er	-47.400
^{177}Er	-43.610
^{178}Er	-41.310
^{179}Er	-37.230
^{180}Er	-34.620
^{181}Er	-30.330
^{182}Er	-27.490
^{183}Er	-22.870
^{184}Er	-19.630
^{185}Er	-14.680
^{186}Er	-11.050
^{187}Er	-5.880
^{188}Er	-2.680
^{189}Er	2.440
^{190}Er	6.020
^{191}Er	10.980

Isotope	Mass Excess
^{192}Er	14.540
^{193}Er	19.430
^{194}Er	23.390
^{195}Er	30.730
^{196}Er	36.140
^{197}Er	43.950
^{198}Er	49.710
^{199}Er	57.180
^{200}Er	62.810
^{201}Er	70.140
^{202}Er	75.770
^{203}Er	82.860
^{204}Er	88.440
^{205}Er	95.640
^{206}Er	101.460
^{207}Er	108.840
^{208}Er	114.770
^{209}Er	122.220
^{210}Er	128.400
^{211}Er	136.060
^{212}Er	142.200
^{213}Er	149.630
^{214}Er	155.960
^{215}Er	163.900
^{216}Er	170.580
^{217}Er	178.750
^{218}Er	185.640
^{219}Er	193.840
^{220}Er	200.900
^{221}Er	209.600
^{222}Er	217.050
^{223}Er	225.940
^{224}Er	233.520
^{225}Er	242.530
^{226}Er	250.210
^{227}Er	259.200
^{141}Tm	-10.360
^{142}Tm	-14.380
^{143}Tm	-19.780
^{144}Tm	-23.600
^{145}Tm	-28.630
^{146}Tm	-30.620
^{147}Tm	-36.000
^{148}Tm	-39.220
^{149}Tm	-44.020
^{150}Tm	-46.620
^{151}Tm	-51.300
^{152}Tm	-52.020
^{153}Tm	-54.310
^{154}Tm	-54.760
^{155}Tm	-56.820
^{156}Tm	-57.160
^{157}Tm	-59.180
^{158}Tm	-59.300
^{159}Tm	-61.040
^{160}Tm	-60.910
^{161}Tm	-62.400
^{162}Tm	-62.060
^{163}Tm	-63.120
^{164}Tm	-62.530
^{165}Tm	-63.270
^{166}Tm	-62.350
^{167}Tm	-62.790
^{168}Tm	-61.580
^{169}Tm	-61.530
^{170}Tm	-59.940
^{171}Tm	-59.490
^{172}Tm	-57.440
^{173}Tm	-56.450
^{174}Tm	-53.960
^{175}Tm	-52.700
^{176}Tm	-49.970
^{177}Tm	-48.210
^{178}Tm	-44.930
^{179}Tm	-42.720

Isotope	Mass Excess
^{180}Tm	-39.080
^{181}Tm	-36.520
^{182}Tm	-32.670
^{183}Tm	-29.860
^{184}Tm	-25.680
^{185}Tm	-22.520
^{186}Tm	-17.980
^{187}Tm	-14.370
^{188}Tm	-9.570
^{189}Tm	-6.440
^{190}Tm	-1.720
^{191}Tm	1.850
^{192}Tm	6.360
^{193}Tm	9.920
^{194}Tm	14.420
^{195}Tm	18.280
^{196}Tm	25.280
^{197}Tm	30.660
^{198}Tm	38.110
^{199}Tm	44.020
^{200}Tm	50.800
^{201}Tm	56.470
^{202}Tm	63.450
^{203}Tm	69.080
^{204}Tm	75.800
^{205}Tm	81.400
^{206}Tm	88.190
^{207}Tm	93.980
^{208}Tm	100.960
^{209}Tm	106.860
^{210}Tm	113.920
^{211}Tm	120.070
^{212}Tm	127.280
^{213}Tm	133.390
^{214}Tm	140.790
^{215}Tm	146.900
^{216}Tm	154.320
^{217}Tm	161.040
^{218}Tm	168.810
^{219}Tm	175.670
^{220}Tm	183.490
^{221}Tm	190.510
^{222}Tm	198.800
^{223}Tm	206.210
^{224}Tm	214.660
^{225}Tm	222.230
^{226}Tm	230.790
^{227}Tm	238.420
^{228}Tm	247.050
^{229}Tm	254.750
^{230}Tm	263.470
^{143}Yb	-6.290
^{144}Yb	-12.280
^{145}Yb	-16.120
^{146}Yb	-20.170
^{147}Yb	-23.950
^{148}Yb	-29.940
^{149}Yb	-33.210
^{150}Yb	-38.620
^{151}Yb	-41.280
^{152}Yb	-46.540
^{153}Yb	-47.300
^{154}Yb	-50.130
^{155}Yb	-50.260
^{156}Yb	-53.050
^{157}Yb	-53.450
^{158}Yb	-55.810
^{159}Yb	-55.930
^{160}Yb	-58.140
^{161}Yb	-58.010
^{162}Yb	-59.900
^{163}Yb	-59.640
^{164}Yb	-61.250
^{165}Yb	-60.650
^{166}Yb	-61.950

Isotope	Mass Excess
^{167}Yb	-61.030
^{168}Yb	-61.990
^{169}Yb	-60.800
^{170}Yb	-61.290
^{171}Yb	-59.730
^{172}Yb	-59.800
^{173}Yb	-57.830
^{174}Yb	-57.350
^{175}Yb	-55.060
^{176}Yb	-54.290
^{177}Yb	-51.650
^{178}Yb	-50.480
^{179}Yb	-47.290
^{180}Yb	-45.610
^{181}Yb	-42.080
^{182}Yb	-40.100
^{183}Yb	-36.190
^{184}Yb	-33.970
^{185}Yb	-29.900
^{186}Yb	-27.120
^{187}Yb	-22.650
^{188}Yb	-19.540
^{189}Yb	-14.730
^{190}Yb	-12.040
^{191}Yb	-7.390
^{192}Yb	-4.280
^{193}Yb	0.160
^{194}Yb	3.290
^{195}Yb	7.750
^{196}Yb	11.250
^{197}Yb	18.050
^{198}Yb	23.130
^{199}Yb	30.690
^{200}Yb	36.130
^{201}Yb	43.010
^{202}Yb	48.330
^{203}Yb	55.180
^{204}Yb	60.620
^{205}Yb	67.440
^{206}Yb	72.680
^{207}Yb	79.470
^{208}Yb	84.880
^{209}Yb	91.840
^{210}Yb	97.360
^{211}Yb	104.460
^{212}Yb	110.180
^{213}Yb	117.370
^{214}Yb	123.250
^{215}Yb	130.490
^{216}Yb	136.260
^{217}Yb	143.780
^{218}Yb	150.020
^{219}Yb	157.710
^{220}Yb	164.180
^{221}Yb	171.980
^{222}Yb	178.630
^{223}Yb	186.910
^{224}Yb	193.940
^{225}Yb	202.360
^{226}Yb	209.500
^{227}Yb	217.990
^{228}Yb	225.240
^{229}Yb	233.720
^{230}Yb	240.990
^{231}Yb	249.630
^{232}Yb	257.100
^{233}Yb	266.350
^{234}Yb	274.470
^{146}Lu	-6.430
^{147}Lu	-10.800
^{148}Lu	-15.080
^{149}Lu	-21.140
^{150}Lu	-24.920
^{151}Lu	-30.340
^{152}Lu	-33.530

Isotope	Mass Excess
^{153}Lu	-38.840
^{154}Lu	-40.150
^{155}Lu	-43.040
^{156}Lu	-43.790
^{157}Lu	-46.590
^{158}Lu	-47.490
^{159}Lu	-49.920
^{160}Lu	-50.520
^{161}Lu	-52.720
^{162}Lu	-53.040
^{163}Lu	-54.900
^{164}Lu	-55.040
^{165}Lu	-56.780
^{166}Lu	-56.650
^{167}Lu	-57.910
^{168}Lu	-57.460
^{169}Lu	-58.490
^{170}Lu	-57.730
^{171}Lu	-58.290
^{172}Lu	-57.230
^{173}Lu	-57.320
^{174}Lu	-55.900
^{175}Lu	-55.530
^{176}Lu	-53.720
^{177}Lu	-53.150
^{178}Lu	-51.010
^{179}Lu	-49.940
^{180}Lu	-47.240
^{181}Lu	-45.690
^{182}Lu	-42.670
^{183}Lu	-40.680
^{184}Lu	-37.520
^{185}Lu	-35.200
^{186}Lu	-31.630
^{187}Lu	-28.980
^{188}Lu	-24.990
^{189}Lu	-21.910
^{190}Lu	-17.380
^{191}Lu	-14.750
^{192}Lu	-10.560
^{193}Lu	-7.500
^{194}Lu	-3.520
^{195}Lu	-0.410
^{196}Lu	3.690
^{197}Lu	7.210
^{198}Lu	13.470
^{199}Lu	18.530
^{200}Lu	25.610
^{201}Lu	31.130
^{202}Lu	37.620
^{203}Lu	42.930
^{204}Lu	49.430
^{205}Lu	54.840
^{206}Lu	61.280
^{207}Lu	66.560
^{208}Lu	73.040
^{209}Lu	78.380
^{210}Lu	84.940
^{211}Lu	90.450
^{212}Lu	97.170
^{213}Lu	102.840
^{214}Lu	109.680
^{215}Lu	115.520
^{216}Lu	122.410
^{217}Lu	128.440
^{218}Lu	135.590
^{219}Lu	141.460
^{220}Lu	148.820
^{221}Lu	155.240
^{222}Lu	162.660
^{223}Lu	169.270
^{224}Lu	177.170
^{225}Lu	184.140
^{226}Lu	192.200
^{227}Lu	199.320

Isotope	Mass Excess
^{228}Lu	207.440
^{229}Lu	214.610
^{230}Lu	222.710
^{231}Lu	229.910
^{232}Lu	238.150
^{233}Lu	245.560
^{234}Lu	254.490
^{235}Lu	262.420
^{236}Lu	271.520
^{237}Lu	279.640
^{149}Hf	-7.260
^{150}Hf	-13.980
^{151}Hf	-17.850
^{152}Hf	-23.900
^{153}Hf	-27.260
^{154}Hf	-33.250
^{155}Hf	-34.530
^{156}Hf	-37.990
^{157}Hf	-38.820
^{158}Hf	-41.800
^{159}Hf	-42.830
^{160}Hf	-45.740
^{161}Hf	-46.320
^{162}Hf	-48.980
^{163}Hf	-49.320
^{164}Hf	-51.630
^{165}Hf	-51.730
^{166}Hf	-53.820
^{167}Hf	-53.740
^{168}Hf	-55.550
^{169}Hf	-55.110
^{170}Hf	-56.580
^{171}Hf	-55.850
^{172}Hf	-56.890
^{173}Hf	-55.820
^{174}Hf	-56.470
^{175}Hf	-55.090
^{176}Hf	-55.260
^{177}Hf	-53.540
^{178}Hf	-53.450
^{179}Hf	-51.400
^{180}Hf	-50.790
^{181}Hf	-48.170
^{182}Hf	-47.160
^{183}Hf	-44.230
^{184}Hf	-42.820
^{185}Hf	-39.500
^{186}Hf	-37.920
^{187}Hf	-34.420
^{188}Hf	-32.290
^{189}Hf	-28.300
^{190}Hf	-26.010
^{191}Hf	-21.470
^{192}Hf	-19.310
^{193}Hf	-15.220
^{194}Hf	-12.770
^{195}Hf	-8.740
^{196}Hf	-6.090
^{197}Hf	-2.000
^{198}Hf	1.060
^{199}Hf	7.300
^{200}Hf	11.930
^{201}Hf	18.790
^{202}Hf	23.980
^{203}Hf	30.780
^{204}Hf	35.710
^{205}Hf	42.340
^{206}Hf	47.180
^{207}Hf	53.890
^{208}Hf	58.810
^{209}Hf	65.270
^{210}Hf	70.300
^{211}Hf	76.860
^{212}Hf	81.960
^{213}Hf	88.670

Isotope	Mass Excess
^{214}Hf	93.990
^{215}Hf	100.810
^{216}Hf	106.250
^{217}Hf	113.180
^{218}Hf	118.820
^{219}Hf	125.970
^{220}Hf	131.770
^{221}Hf	138.850
^{222}Hf	144.850
^{223}Hf	152.320
^{224}Hf	158.480
^{225}Hf	166.480
^{226}Hf	173.010
^{227}Hf	181.330
^{228}Hf	187.990
^{229}Hf	196.020
^{230}Hf	202.560
^{231}Hf	210.600
^{232}Hf	217.400
^{233}Hf	225.590
^{234}Hf	232.600
^{235}Hf	241.440
^{236}Hf	249.110
^{237}Hf	258.020
^{238}Hf	265.780
^{239}Hf	274.820
^{240}Hf	284.420
^{151}Ta	-4.330
^{152}Ta	-8.780
^{153}Ta	-14.920
^{154}Ta	-18.780
^{155}Ta	-24.870
^{156}Ta	-26.640
^{157}Ta	-30.220
^{158}Ta	-31.440
^{159}Ta	-34.620
^{160}Ta	-36.090
^{161}Ta	-38.970
^{162}Ta	-40.090
^{163}Ta	-42.750
^{164}Ta	-43.550
^{165}Ta	-45.880
^{166}Ta	-46.420
^{167}Ta	-48.520
^{168}Ta	-48.800
^{169}Ta	-50.670
^{170}Ta	-50.690
^{171}Ta	-52.190
^{172}Ta	-51.890
^{173}Ta	-52.970
^{174}Ta	-52.320
^{175}Ta	-53.040
^{176}Ta	-52.140
^{177}Ta	-52.390
^{178}Ta	-51.130
^{179}Ta	-51.210
^{180}Ta	-49.590
^{181}Ta	-49.090
^{182}Ta	-47.000
^{183}Ta	-46.000
^{184}Ta	-43.640
^{185}Ta	-42.330
^{186}Ta	-39.640
^{187}Ta	-38.150
^{188}Ta	-35.030
^{189}Ta	-33.030
^{190}Ta	-29.530
^{191}Ta	-27.470
^{192}Ta	-23.150
^{193}Ta	-21.050
^{194}Ta	-17.440
^{195}Ta	-15.070
^{196}Ta	-11.470
^{197}Ta	-8.860
^{198}Ta	-5.170

Isotope	Mass Excess
^{199}Ta	-2.120
^{200}Ta	3.690
^{201}Ta	8.270
^{202}Ta	14.810
^{203}Ta	19.880
^{204}Ta	26.220
^{205}Ta	31.210
^{206}Ta	37.400
^{207}Ta	42.290
^{208}Ta	48.660
^{209}Ta	53.580
^{210}Ta	59.710
^{211}Ta	64.780
^{212}Ta	70.910
^{213}Ta	76.010
^{214}Ta	82.340
^{215}Ta	87.640
^{216}Ta	94.140
^{217}Ta	99.550
^{218}Ta	106.220
^{219}Ta	111.830
^{220}Ta	118.560
^{221}Ta	124.340
^{222}Ta	131.250
^{223}Ta	137.230
^{224}Ta	144.360
^{225}Ta	150.260
^{226}Ta	158.120
^{227}Ta	164.570
^{228}Ta	172.370
^{229}Ta	178.980
^{230}Ta	186.620
^{231}Ta	193.280
^{232}Ta	200.780
^{233}Ta	207.510
^{234}Ta	215.350
^{235}Ta	222.300
^{236}Ta	230.760
^{237}Ta	238.240
^{238}Ta	246.860
^{239}Ta	254.570
^{240}Ta	263.860
^{241}Ta	272.550
^{242}Ta	281.490
^{243}Ta	289.210
^{154}W	-7.650
^{155}W	-11.700
^{156}W	-18.170
^{157}W	-20.160
^{158}W	-24.280
^{159}W	-25.420
^{160}W	-29.040
^{161}W	-30.430
^{162}W	-33.850
^{163}W	-35.000
^{164}W	-38.110
^{165}W	-38.950
^{166}W	-41.740
^{167}W	-42.310
^{168}W	-44.830
^{169}W	-45.110
^{170}W	-47.400
^{171}W	-47.400
^{172}W	-49.310
^{173}W	-49.020
^{174}W	-50.550
^{175}W	-49.900
^{176}W	-51.140
^{177}W	-50.220
^{178}W	-51.050
^{179}W	-49.830
^{180}W	-50.410
^{181}W	-48.850
^{182}W	-48.840
^{183}W	-46.830

Isotope	Mass Excess
^{184}W	-46.390
^{185}W	-44.030
^{186}W	-43.330
^{187}W	-40.730
^{188}W	-39.600
^{189}W	-36.680
^{190}W	-35.110
^{191}W	-32.170
^{192}W	-30.470
^{193}W	-26.170
^{194}W	-24.550
^{195}W	-21.040
^{196}W	-19.220
^{197}W	-15.680
^{198}W	-13.610
^{199}W	-10.010
^{200}W	-7.340
^{201}W	-1.530
^{202}W	2.560
^{203}W	8.940
^{204}W	13.620
^{205}W	20.220
^{206}W	24.840
^{207}W	31.240
^{208}W	35.710
^{209}W	41.970
^{210}W	46.720
^{211}W	52.920
^{212}W	57.580
^{213}W	63.810
^{214}W	68.540
^{215}W	74.880
^{216}W	79.810
^{217}W	86.290
^{218}W	91.330
^{219}W	97.920
^{220}W	103.210
^{221}W	109.920
^{222}W	115.360
^{223}W	122.250
^{224}W	127.870
^{225}W	135.000
^{226}W	140.850
^{227}W	148.380
^{228}W	154.590
^{229}W	162.190
^{230}W	168.400
^{231}W	176.020
^{232}W	182.300
^{233}W	189.910
^{234}W	196.290
^{235}W	204.090
^{236}W	210.650
^{237}W	218.950
^{238}W	226.160
^{239}W	234.840
^{240}W	242.390
^{241}W	251.190
^{242}W	259.530
^{243}W	268.150
^{244}W	275.330
^{245}W	286.500
^{246}W	293.780
^{247}W	303.290
^{156}Re	-2.460
^{157}Re	-9.060
^{158}Re	-11.490
^{159}Re	-15.710
^{160}Re	-17.480
^{161}Re	-21.030
^{162}Re	-22.960
^{163}Re	-26.330
^{164}Re	-27.890
^{165}Re	-31.030
^{166}Re	-32.300

Isotope	Mass Excess
^{167}Re	-35.040
^{168}Re	-36.110
^{169}Re	-38.630
^{170}Re	-39.360
^{171}Re	-41.650
^{172}Re	-42.120
^{173}Re	-44.020
^{174}Re	-44.240
^{175}Re	-45.810
^{176}Re	-45.690
^{177}Re	-46.920
^{178}Re	-46.470
^{179}Re	-47.410
^{180}Re	-46.620
^{181}Re	-47.240
^{182}Re	-46.180
^{183}Re	-46.330
^{184}Re	-44.740
^{185}Re	-44.330
^{186}Re	-42.440
^{187}Re	-41.710
^{188}Re	-39.610
^{189}Re	-38.510
^{190}Re	-36.130
^{191}Re	-34.950
^{192}Re	-32.490
^{193}Re	-30.900
^{194}Re	-27.600
^{195}Re	-25.410
^{196}Re	-22.340
^{197}Re	-20.660
^{198}Re	-17.530
^{199}Re	-15.500
^{200}Re	-12.130
^{201}Re	-9.530
^{202}Re	-4.190
^{203}Re	0.000
^{204}Re	6.050
^{205}Re	10.560
^{206}Re	16.570
^{207}Re	21.180
^{208}Re	27.160
^{209}Re	31.720
^{210}Re	37.610
^{211}Re	42.400
^{212}Re	48.260
^{213}Re	52.950
^{214}Re	58.830
^{215}Re	63.560
^{216}Re	69.510
^{217}Re	74.440
^{218}Re	80.560
^{219}Re	85.590
^{220}Re	91.840
^{221}Re	97.050
^{222}Re	103.460
^{223}Re	108.860
^{224}Re	115.370
^{225}Re	121.010
^{226}Re	127.720
^{227}Re	133.550
^{228}Re	140.750
^{229}Re	146.820
^{230}Re	154.050
^{231}Re	160.260
^{232}Re	167.610
^{233}Re	173.850
^{234}Re	181.150
^{235}Re	187.420
^{236}Re	194.940
^{237}Re	201.420
^{238}Re	209.400
^{239}Re	216.630
^{240}Re	224.900
^{241}Re	232.800

Isotope	Mass Excess
^{242}Re	241.490
^{243}Re	248.800
^{244}Re	257.090
^{245}Re	265.140
^{246}Re	275.020
^{247}Re	282.390
^{248}Re	291.340
^{249}Re	298.720
^{250}Re	307.220
^{159}Os	-4.330
^{160}Os	-9.070
^{161}Os	-10.710
^{162}Os	-14.690
^{163}Os	-16.410
^{164}Os	-20.240
^{165}Os	-21.840
^{166}Os	-25.440
^{167}Os	-26.770
^{168}Os	-30.020
^{169}Os	-30.970
^{170}Os	-33.980
^{171}Os	-34.770
^{172}Os	-37.450
^{173}Os	-37.920
^{174}Os	-40.340
^{175}Os	-40.350
^{176}Os	-42.450
^{177}Os	-42.300
^{178}Os	-44.040
^{179}Os	-43.560
^{180}Os	-45.060
^{181}Os	-44.260
^{182}Os	-45.390
^{183}Os	-44.330
^{184}Os	-45.020
^{185}Os	-43.450
^{186}Os	-43.560
^{187}Os	-41.720
^{188}Os	-41.350
^{189}Os	-39.260
^{190}Os	-38.690
^{191}Os	-36.530
^{192}Os	-36.020
^{193}Os	-33.620
^{194}Os	-32.620
^{195}Os	-29.610
^{196}Os	-27.970
^{197}Os	-25.090
^{198}Os	-23.900
^{199}Os	-20.850
^{200}Os	-19.290
^{201}Os	-16.140
^{202}Os	-13.900
^{203}Os	-8.640
^{204}Os	-4.890
^{205}Os	1.110
^{206}Os	5.250
^{207}Os	11.390
^{208}Os	15.660
^{209}Os	21.820
^{210}Os	26.040
^{211}Os	31.940
^{212}Os	36.260
^{213}Os	42.330
^{214}Os	46.680
^{215}Os	52.600
^{216}Os	57.000
^{217}Os	63.030
^{218}Os	67.580
^{219}Os	73.740
^{220}Os	78.360
^{221}Os	84.620
^{222}Os	89.480
^{223}Os	95.840
^{224}Os	100.850

Isotope	Mass Excess
^{225}Os	107.400
^{226}Os	112.640
^{227}Os	119.390
^{228}Os	124.860
^{229}Os	132.040
^{230}Os	137.760
^{231}Os	145.000
^{232}Os	150.890
^{233}Os	158.300
^{234}Os	164.190
^{235}Os	171.490
^{236}Os	177.430
^{237}Os	184.900
^{238}Os	190.990
^{239}Os	199.020
^{240}Os	205.990
^{241}Os	214.460
^{242}Os	221.930
^{243}Os	230.190
^{244}Os	237.370
^{245}Os	247.150
^{246}Os	254.940
^{247}Os	262.360
^{248}Os	269.330
^{249}Os	278.660
^{250}Os	285.710
^{251}Os	294.130
^{252}Os	301.560
^{253}Os	309.850
^{162}Ir	-2.200
^{163}Ir	-6.120
^{164}Ir	-8.160
^{165}Ir	-11.880
^{166}Ir	-13.830
^{167}Ir	-17.370
^{168}Ir	-19.150
^{169}Ir	-22.340
^{170}Ir	-23.760
^{171}Ir	-26.700
^{172}Ir	-27.810
^{173}Ir	-30.400
^{174}Ir	-31.290
^{175}Ir	-33.660
^{176}Ir	-34.510
^{177}Ir	-36.330
^{178}Ir	-36.810
^{179}Ir	-38.700
^{180}Ir	-38.630
^{181}Ir	-40.170
^{182}Ir	-39.670
^{183}Ir	-40.920
^{184}Ir	-40.260
^{185}Ir	-41.100
^{186}Ir	-39.970
^{187}Ir	-39.920
^{188}Ir	-38.410
^{189}Ir	-38.280
^{190}Ir	-36.820
^{191}Ir	-36.530
^{192}Ir	-34.800
^{193}Ir	-34.410
^{194}Ir	-32.390
^{195}Ir	-31.680
^{196}Ir	-29.220
^{197}Ir	-27.920
^{198}Ir	-25.770
^{199}Ir	-24.520
^{200}Ir	-21.890
^{201}Ir	-20.390
^{202}Ir	-17.620
^{203}Ir	-15.430
^{204}Ir	-10.430
^{205}Ir	-6.880
^{206}Ir	-1.250
^{207}Ir	2.800

Isotope	Mass Excess
^{208}Ir	8.640
^{209}Ir	12.890
^{210}Ir	18.710
^{211}Ir	22.930
^{212}Ir	28.500
^{213}Ir	32.800
^{214}Ir	38.610
^{215}Ir	42.930
^{216}Ir	48.610
^{217}Ir	52.970
^{218}Ir	58.620
^{219}Ir	63.160
^{220}Ir	68.960
^{221}Ir	73.680
^{222}Ir	79.570
^{223}Ir	84.440
^{224}Ir	90.410
^{225}Ir	95.430
^{226}Ir	101.560
^{227}Ir	106.790
^{228}Ir	113.180
^{229}Ir	118.670
^{230}Ir	125.510
^{231}Ir	131.310
^{232}Ir	138.350
^{233}Ir	144.200
^{234}Ir	151.350
^{235}Ir	157.220
^{236}Ir	164.220
^{237}Ir	170.130
^{238}Ir	177.140
^{239}Ir	183.280
^{240}Ir	190.970
^{241}Ir	197.880
^{242}Ir	206.210
^{243}Ir	213.160
^{244}Ir	221.120
^{245}Ir	229.400
^{246}Ir	237.590
^{247}Ir	245.030
^{248}Ir	251.820
^{249}Ir	258.800
^{250}Ir	267.750
^{251}Ir	275.060
^{252}Ir	283.150
^{253}Ir	290.380
^{254}Ir	298.280
^{255}Ir	305.960
^{256}Ir	315.230
^{165}Pt	-0.810
^{166}Pt	-5.000
^{167}Pt	-6.770
^{168}Pt	-10.630
^{169}Pt	-12.530
^{170}Pt	-16.110
^{171}Pt	-17.530
^{172}Pt	-20.930
^{173}Pt	-22.180
^{174}Pt	-25.250
^{175}Pt	-26.250
^{176}Pt	-29.000
^{177}Pt	-29.580
^{178}Pt	-32.180
^{179}Pt	-32.410
^{180}Pt	-34.580
^{181}Pt	-34.640
^{182}Pt	-36.470
^{183}Pt	-36.200
^{184}Pt	-37.780
^{185}Pt	-37.150
^{186}Pt	-38.220
^{187}Pt	-37.250
^{188}Pt	-37.140
^{189}Pt	-35.880
^{190}Pt	-36.560

Isotope	Mass Excess
^{191}Pt	-35.090
^{192}Pt	-35.540
^{193}Pt	-33.880
^{194}Pt	-34.130
^{195}Pt	-32.290
^{196}Pt	-32.270
^{197}Pt	-30.010
^{198}Pt	-29.640
^{199}Pt	-27.490
^{200}Pt	-26.730
^{201}Pt	-24.160
^{202}Pt	-23.060
^{203}Pt	-20.350
^{204}Pt	-18.540
^{205}Pt	-13.710
^{206}Pt	-10.430
^{207}Pt	-4.800
^{208}Pt	-1.120
^{209}Pt	4.530
^{210}Pt	8.440
^{211}Pt	14.230
^{212}Pt	18.210
^{213}Pt	23.850
^{214}Pt	27.850
^{215}Pt	33.540
^{216}Pt	37.530
^{217}Pt	43.290
^{218}Pt	47.350
^{219}Pt	53.060
^{220}Pt	57.270
^{221}Pt	63.080
^{222}Pt	67.390
^{223}Pt	73.270
^{224}Pt	77.790
^{225}Pt	83.820
^{226}Pt	88.480
^{227}Pt	94.680
^{228}Pt	99.560
^{229}Pt	105.940
^{230}Pt	111.080
^{231}Pt	117.930
^{232}Pt	123.360
^{233}Pt	130.260
^{234}Pt	135.900
^{235}Pt	142.980
^{236}Pt	148.590
^{237}Pt	155.590
^{238}Pt	161.180
^{239}Pt	168.200
^{240}Pt	174.010
^{241}Pt	181.680
^{242}Pt	188.150
^{243}Pt	196.490
^{244}Pt	203.110
^{245}Pt	213.160
^{246}Pt	218.800
^{247}Pt	227.030
^{248}Pt	233.850
^{249}Pt	241.760
^{250}Pt	248.140
^{251}Pt	256.180
^{252}Pt	262.890
^{253}Pt	271.060
^{254}Pt	277.930
^{255}Pt	285.360
^{256}Pt	292.680
^{257}Pt	301.920
^{258}Pt	309.210
^{259}Pt	317.960
^{260}Pt	325.590
^{167}Au	3.730
^{168}Au	1.510
^{169}Au	-2.350
^{170}Au	-4.290
^{171}Au	-7.890

Isotope	Mass Excess
^{172}Au	-9.550
^{173}Au	-12.870
^{174}Au	-14.300
^{175}Au	-17.340
^{176}Au	-18.520
^{177}Au	-21.320
^{178}Au	-22.280
^{179}Au	-24.820
^{180}Au	-25.530
^{181}Au	-27.810
^{182}Au	-28.240
^{183}Au	-30.250
^{184}Au	-30.370
^{185}Au	-32.010
^{186}Au	-31.820
^{187}Au	-33.130
^{188}Au	-32.550
^{189}Au	-33.570
^{190}Au	-32.800
^{191}Au	-33.560
^{192}Au	-32.550
^{193}Au	-33.100
^{194}Au	-31.860
^{195}Au	-32.190
^{196}Au	-30.760
^{197}Au	-30.810
^{198}Au	-29.100
^{199}Au	-28.720
^{200}Au	-27.040
^{201}Au	-26.320
^{202}Au	-24.140
^{203}Au	-23.140
^{204}Au	-20.860
^{205}Au	-19.180
^{206}Au	-14.620
^{207}Au	-11.470
^{208}Au	-6.390
^{209}Au	-2.600
^{210}Au	2.690
^{211}Au	6.550
^{212}Au	11.830
^{213}Au	15.790
^{214}Au	21.240
^{215}Au	25.230
^{216}Au	30.710
^{217}Au	34.710
^{218}Au	40.170
^{219}Au	44.230
^{220}Au	49.600
^{221}Au	53.860
^{222}Au	59.340
^{223}Au	63.620
^{224}Au	69.190
^{225}Au	73.690
^{226}Au	79.400
^{227}Au	84.060
^{228}Au	89.910
^{229}Au	94.770
^{230}Au	100.840
^{231}Au	105.940
^{232}Au	112.470
^{233}Au	117.890
^{234}Au	124.450
^{235}Au	130.040
^{236}Au	136.760
^{237}Au	142.310
^{238}Au	149.220
^{239}Au	154.630
^{240}Au	161.410
^{241}Au	167.180
^{242}Au	174.550
^{243}Au	181.310
^{244}Au	191.250
^{245}Au	197.390
^{246}Au	204.690

Isotope	Mass Excess
^{247}Au	210.560
^{248}Au	218.200
^{249}Au	224.540
^{250}Au	230.820
^{251}Au	237.450
^{252}Au	245.170
^{253}Au	253.030
^{254}Au	260.850
^{255}Au	266.770
^{256}Au	274.740
^{257}Au	281.970
^{258}Au	290.840
^{259}Au	298.140
^{260}Au	306.560
^{261}Au	314.170
^{262}Au	322.810
^{263}Au	330.900
^{170}Hg	4.840
^{171}Hg	2.890
^{172}Hg	-1.160
^{173}Hg	-2.880
^{174}Hg	-6.640
^{175}Hg	-8.110
^{176}Hg	-11.610
^{177}Hg	-12.790
^{178}Hg	-16.010
^{179}Hg	-16.990
^{180}Hg	-19.940
^{181}Hg	-20.680
^{182}Hg	-23.410
^{183}Hg	-23.860
^{184}Hg	-26.330
^{185}Hg	-26.520
^{186}Hg	-28.580
^{187}Hg	-28.480
^{188}Hg	-30.270
^{189}Hg	-29.810
^{190}Hg	-31.330
^{191}Hg	-30.640
^{192}Hg	-31.890
^{193}Hg	-30.940
^{194}Hg	-31.940
^{195}Hg	-30.800
^{196}Hg	-31.660
^{197}Hg	-30.170
^{198}Hg	-30.750
^{199}Hg	-29.120
^{200}Hg	-29.300
^{201}Hg	-27.450
^{202}Hg	-27.280
^{203}Hg	-25.190
^{204}Hg	-24.660
^{205}Hg	-22.520
^{206}Hg	-21.200
^{207}Hg	-16.780
^{208}Hg	-13.990
^{209}Hg	-8.950
^{210}Hg	-5.580
^{211}Hg	-0.320
^{212}Hg	3.130
^{213}Hg	8.510
^{214}Hg	12.020
^{215}Hg	17.640
^{216}Hg	21.350
^{217}Hg	27.010
^{218}Hg	30.710
^{219}Hg	36.120
^{220}Hg	39.800
^{221}Hg	45.080
^{222}Hg	48.980
^{223}Hg	54.460
^{224}Hg	58.380
^{225}Hg	63.930
^{226}Hg	68.090
^{227}Hg	73.770

Isotope	Mass Excess
^{228}Hg	78.070
^{229}Hg	83.920
^{230}Hg	88.460
^{231}Hg	94.530
^{232}Hg	99.290
^{233}Hg	105.830
^{234}Hg	110.910
^{235}Hg	117.580
^{236}Hg	122.730
^{237}Hg	129.440
^{238}Hg	134.670
^{239}Hg	141.450
^{240}Hg	146.620
^{241}Hg	153.480
^{242}Hg	158.990
^{243}Hg	166.220
^{244}Hg	174.310
^{245}Hg	181.550
^{246}Hg	187.020
^{247}Hg	194.060
^{248}Hg	199.570
^{249}Hg	206.790
^{250}Hg	212.820
^{251}Hg	220.370
^{252}Hg	226.600
^{253}Hg	234.340
^{254}Hg	240.850
^{255}Hg	248.570
^{256}Hg	255.160
^{257}Hg	263.170
^{258}Hg	270.060
^{259}Hg	278.760
^{260}Hg	285.760
^{261}Hg	294.190
^{262}Hg	301.450
^{263}Hg	310.040
^{264}Hg	317.820
^{265}Hg	327.930
^{266}Hg	336.390
^{173}Tl	8.000
^{174}Tl	5.920
^{175}Tl	2.120
^{176}Tl	0.300
^{177}Tl	-3.240
^{178}Tl	-4.870
^{179}Tl	-8.170
^{180}Tl	-9.500
^{181}Tl	-12.570
^{182}Tl	-13.650
^{183}Tl	-16.440
^{184}Tl	-17.260
^{185}Tl	-19.740
^{186}Tl	-20.360
^{187}Tl	-22.510
^{188}Tl	-22.880
^{189}Tl	-24.760
^{190}Tl	-24.840
^{191}Tl	-26.490
^{192}Tl	-26.300
^{193}Tl	-27.710
^{194}Tl	-27.190
^{195}Tl	-28.420
^{196}Tl	-27.750
^{197}Tl	-28.590
^{198}Tl	-27.680
^{199}Tl	-28.220
^{200}Tl	-27.100
^{201}Tl	-27.330
^{202}Tl	-26.040
^{203}Tl	-25.900
^{204}Tl	-24.190
^{205}Tl	-23.780
^{206}Tl	-21.920
^{207}Tl	-20.710
^{208}Tl	-16.640

Isotope	Mass Excess
^{209}Tl	-13.890
^{210}Tl	-9.190
^{211}Tl	-5.970
^{212}Tl	-1.220
^{213}Tl	2.250
^{214}Tl	7.200
^{215}Tl	10.790
^{216}Tl	15.990
^{217}Tl	19.590
^{218}Tl	24.490
^{219}Tl	28.270
^{220}Tl	33.670
^{221}Tl	37.680
^{222}Tl	42.630
^{223}Tl	46.540
^{224}Tl	51.670
^{225}Tl	55.600
^{226}Tl	60.850
^{227}Tl	65.000
^{228}Tl	70.300
^{229}Tl	74.600
^{230}Tl	80.080
^{231}Tl	84.590
^{232}Tl	90.310
^{233}Tl	95.070
^{234}Tl	101.260
^{235}Tl	106.370
^{236}Tl	112.640
^{237}Tl	117.820
^{238}Tl	124.190
^{239}Tl	129.430
^{240}Tl	135.790
^{241}Tl	142.950
^{242}Tl	149.600
^{243}Tl	154.920
^{244}Tl	161.710
^{245}Tl	167.210
^{246}Tl	174.170
^{247}Tl	179.920
^{248}Tl	186.810
^{249}Tl	192.570
^{250}Tl	199.730
^{251}Tl	205.790
^{252}Tl	213.090
^{253}Tl	219.190
^{254}Tl	226.630
^{255}Tl	232.990
^{256}Tl	240.470
^{257}Tl	246.560
^{258}Tl	254.410
^{259}Tl	261.170
^{260}Tl	268.890
^{261}Tl	275.880
^{262}Tl	283.920
^{263}Tl	291.140
^{264}Tl	299.520
^{265}Tl	307.300
^{266}Tl	317.110
^{267}Tl	325.540
^{268}Tl	335.770
^{269}Tl	344.560
^{175}Pb	13.720
^{176}Pb	9.420
^{177}Pb	7.450
^{178}Pb	3.430
^{179}Pb	1.770
^{180}Pb	-2.030
^{181}Pb	-3.430
^{182}Pb	-6.930
^{183}Pb	-8.090
^{184}Pb	-11.240
^{185}Pb	-12.090
^{186}Pb	-14.990
^{187}Pb	-15.520
^{188}Pb	-18.180

Isotope	Mass Excess
^{189}Pb	-18.520
^{190}Pb	-20.870
^{191}Pb	-20.880
^{192}Pb	-23.090
^{193}Pb	-22.830
^{194}Pb	-24.790
^{195}Pb	-24.300
^{196}Pb	-25.960
^{197}Pb	-25.260
^{198}Pb	-26.610
^{199}Pb	-25.670
^{200}Pb	-26.710
^{201}Pb	-25.610
^{202}Pb	-26.300
^{203}Pb	-24.990
^{204}Pb	-25.440
^{205}Pb	-23.900
^{206}Pb	-23.980
^{207}Pb	-22.020
^{208}Pb	-21.150
^{209}Pb	-17.170
^{210}Pb	-14.800
^{211}Pb	-10.160
^{212}Pb	-7.390
^{213}Pb	-2.520
^{214}Pb	0.410
^{215}Pb	5.320
^{216}Pb	8.340
^{217}Pb	13.270
^{218}Pb	16.480
^{219}Pb	21.600
^{220}Pb	25.000
^{221}Pb	30.970
^{222}Pb	34.320
^{223}Pb	39.220
^{224}Pb	42.660
^{225}Pb	47.860
^{226}Pb	51.370
^{227}Pb	56.540
^{228}Pb	60.310
^{229}Pb	65.590
^{230}Pb	69.540
^{231}Pb	75.010
^{232}Pb	79.180
^{233}Pb	84.850
^{234}Pb	89.320
^{235}Pb	95.510
^{236}Pb	100.260
^{237}Pb	106.570
^{238}Pb	111.450
^{239}Pb	117.790
^{240}Pb	122.710
^{241}Pb	129.100
^{242}Pb	135.490
^{243}Pb	142.100
^{244}Pb	147.080
^{245}Pb	153.850
^{246}Pb	158.810
^{247}Pb	165.920
^{248}Pb	171.320
^{249}Pb	178.190
^{250}Pb	183.640
^{251}Pb	190.790
^{252}Pb	196.460
^{253}Pb	203.740
^{254}Pb	209.640
^{255}Pb	217.070
^{256}Pb	223.130
^{257}Pb	230.650
^{258}Pb	236.760
^{259}Pb	244.280
^{260}Pb	250.570
^{261}Pb	258.310
^{262}Pb	265.000
^{263}Pb	272.990

Isotope	Mass Excess
^{264}Pb	279.930
^{265}Pb	288.320
^{266}Pb	295.780
^{267}Pb	305.610
^{268}Pb	313.710
^{269}Pb	323.860
^{270}Pb	332.270
^{271}Pb	342.060
^{272}Pb	350.380
^{273}Pb	360.040
^{178}Bi	18.310
^{179}Bi	14.270
^{180}Bi	12.100
^{181}Bi	8.530
^{182}Bi	6.410
^{183}Bi	3.020
^{184}Bi	1.390
^{185}Bi	-1.930
^{186}Bi	-3.300
^{187}Bi	-6.280
^{188}Bi	-7.350
^{189}Bi	-10.050
^{190}Bi	-10.880
^{191}Bi	-13.310
^{192}Bi	-13.860
^{193}Bi	-16.050
^{194}Bi	-16.320
^{195}Bi	-18.250
^{196}Bi	-18.230
^{197}Bi	-19.940
^{198}Bi	-19.750
^{199}Bi	-21.140
^{200}Bi	-20.680
^{201}Bi	-21.730
^{202}Bi	-21.060
^{203}Bi	-21.810
^{204}Bi	-20.900
^{205}Bi	-21.310
^{206}Bi	-20.110
^{207}Bi	-20.200
^{208}Bi	-18.740
^{209}Bi	-17.990
^{210}Bi	-14.430
^{211}Bi	-12.050
^{212}Bi	-7.870
^{213}Bi	-5.180
^{214}Bi	-0.660
^{215}Bi	2.140
^{216}Bi	6.550
^{217}Bi	9.480
^{218}Bi	13.940
^{219}Bi	17.170
^{220}Bi	21.810
^{221}Bi	25.080
^{222}Bi	29.890
^{223}Bi	33.190
^{224}Bi	37.740
^{225}Bi	41.290
^{226}Bi	46.030
^{227}Bi	49.540
^{228}Bi	54.340
^{229}Bi	58.130
^{230}Bi	63.040
^{231}Bi	66.990
^{232}Bi	72.090
^{233}Bi	76.270
^{234}Bi	81.610
^{235}Bi	86.040
^{236}Bi	91.890
^{237}Bi	96.630
^{238}Bi	102.600
^{239}Bi	107.450
^{240}Bi	113.470
^{241}Bi	118.380
^{242}Bi	124.440

Isotope	Mass Excess
^{243}Bi	130.810
^{244}Bi	137.180
^{245}Bi	142.120
^{246}Bi	148.510
^{247}Bi	153.720
^{248}Bi	160.180
^{249}Bi	165.600
^{250}Bi	172.090
^{251}Bi	177.560
^{252}Bi	184.380
^{253}Bi	190.120
^{254}Bi	197.040
^{255}Bi	202.880
^{256}Bi	210.000
^{257}Bi	216.070
^{258}Bi	223.260
^{259}Bi	229.210
^{260}Bi	236.650
^{261}Bi	243.050
^{262}Bi	250.390
^{263}Bi	257.040
^{264}Bi	264.770
^{265}Bi	271.720
^{266}Bi	279.790
^{267}Bi	287.290
^{268}Bi	296.790
^{269}Bi	304.870
^{270}Bi	314.720
^{271}Bi	323.080
^{272}Bi	332.570
^{273}Bi	340.920
^{274}Bi	350.230
^{275}Bi	358.710
^{276}Bi	370.620
^{181}Po	20.060
^{182}Po	15.550
^{183}Po	13.240
^{184}Po	9.130
^{185}Po	7.200
^{186}Po	3.630
^{187}Po	2.220
^{188}Po	-0.770
^{189}Po	-1.660
^{190}Po	-4.430
^{191}Po	-5.060
^{192}Po	-8.060
^{193}Po	-8.570
^{194}Po	-10.850
^{195}Po	-11.190
^{196}Po	-13.400
^{197}Po	-13.540
^{198}Po	-15.530
^{199}Po	-15.320
^{200}Po	-17.170
^{201}Po	-16.700
^{202}Po	-18.220
^{203}Po	-17.570
^{204}Po	-18.740
^{205}Po	-17.860
^{206}Po	-18.830
^{207}Po	-17.720
^{208}Po	-18.230
^{209}Po	-16.780
^{210}Po	-16.330
^{211}Po	-12.840
^{212}Po	-10.940
^{213}Po	-6.770
^{214}Po	-4.460
^{215}Po	-0.090
^{216}Po	2.290
^{217}Po	6.390
^{218}Po	8.880
^{219}Po	13.470
^{220}Po	16.240
^{221}Po	20.760

Isotope	Mass Excess
^{222}Po	23.610
^{223}Po	27.990
^{224}Po	30.890
^{225}Po	35.350
^{226}Po	38.450
^{227}Po	43.120
^{228}Po	46.240
^{229}Po	51.000
^{230}Po	54.400
^{231}Po	59.220
^{232}Po	62.810
^{233}Po	67.910
^{234}Po	71.720
^{235}Po	77.010
^{236}Po	81.120
^{237}Po	86.950
^{238}Po	91.380
^{239}Po	97.370
^{240}Po	101.920
^{241}Po	107.960
^{242}Po	112.560
^{243}Po	118.610
^{244}Po	123.270
^{245}Po	129.450
^{246}Po	134.370
^{247}Po	142.140
^{248}Po	146.840
^{249}Po	153.410
^{250}Po	158.510
^{251}Po	164.980
^{252}Po	170.120
^{253}Po	176.960
^{254}Po	182.350
^{255}Po	189.270
^{256}Po	194.190
^{257}Po	201.900
^{258}Po	207.650
^{259}Po	214.770
^{260}Po	220.530
^{261}Po	227.920
^{262}Po	234.010
^{263}Po	241.360
^{264}Po	247.620
^{265}Po	255.370
^{266}Po	261.990
^{267}Po	270.070
^{268}Po	277.240
^{269}Po	286.750
^{270}Po	294.490
^{271}Po	304.230
^{272}Po	312.300
^{273}Po	321.640
^{274}Po	329.640
^{275}Po	338.900
^{276}Po	349.460
^{277}Po	358.450
^{278}Po	366.190
^{279}Po	375.510
^{184}At	22.630
^{185}At	18.320
^{186}At	15.970
^{187}At	12.340
^{188}At	10.590
^{189}At	7.440
^{190}At	6.140
^{191}At	3.590
^{192}At	2.280
^{193}At	-0.470
^{194}At	-1.430
^{195}At	-3.780
^{196}At	-4.300
^{197}At	-6.370
^{198}At	-6.690
^{199}At	-8.640
^{200}At	-8.900

Isotope	Mass Excess
^{201}At	-10.620
^{202}At	-10.660
^{203}At	-12.090
^{204}At	-12.060
^{205}At	-12.960
^{206}At	-12.770
^{207}At	-13.580
^{208}At	-12.770
^{209}At	-13.280
^{210}At	-12.270
^{211}At	-11.870
^{212}At	-8.750
^{213}At	-6.990
^{214}At	-3.230
^{215}At	-0.960
^{216}At	2.940
^{217}At	4.890
^{218}At	8.460
^{219}At	10.940
^{220}At	14.610
^{221}At	17.200
^{222}At	21.350
^{223}At	24.140
^{224}At	28.090
^{225}At	30.900
^{226}At	34.950
^{227}At	37.980
^{228}At	42.250
^{229}At	45.330
^{230}At	49.710
^{231}At	53.070
^{232}At	57.540
^{233}At	61.140
^{234}At	65.860
^{235}At	69.680
^{236}At	74.600
^{237}At	78.550
^{238}At	84.220
^{239}At	88.610
^{240}At	94.350
^{241}At	98.860
^{242}At	104.560
^{243}At	109.140
^{244}At	114.870
^{245}At	119.520
^{246}At	125.400
^{247}At	130.270
^{248}At	137.690
^{249}At	142.600
^{250}At	148.830
^{251}At	153.870
^{252}At	160.070
^{253}At	165.140
^{254}At	171.590
^{255}At	177.020
^{256}At	183.610
^{257}At	188.290
^{258}At	195.950
^{259}At	201.680
^{260}At	208.530
^{261}At	214.220
^{262}At	221.320
^{263}At	227.400
^{264}At	234.610
^{265}At	240.890
^{266}At	248.310
^{267}At	254.960
^{268}At	262.700
^{269}At	269.900
^{270}At	279.080
^{271}At	286.780
^{272}At	296.280
^{273}At	304.320
^{274}At	313.440
^{275}At	321.300

Isotope	Mass Excess
^{276}At	332.150
^{277}At	339.790
^{278}At	348.480
^{279}At	356.230
^{280}At	365.010
^{281}At	373.060
^{282}At	382.030
^{186}Rn	25.910
^{187}Rn	23.490
^{188}Rn	19.430
^{189}Rn	17.570
^{190}Rn	14.040
^{191}Rn	12.790
^{192}Rn	9.690
^{193}Rn	8.700
^{194}Rn	5.750
^{195}Rn	4.740
^{196}Rn	1.930
^{197}Rn	1.270
^{198}Rn	-1.130
^{199}Rn	-1.530
^{200}Rn	-3.660
^{201}Rn	-3.820
^{202}Rn	-6.100
^{203}Rn	-6.140
^{204}Rn	-8.060
^{205}Rn	-7.920
^{206}Rn	-9.280
^{207}Rn	-8.930
^{208}Rn	-10.060
^{209}Rn	-9.300
^{210}Rn	-10.270
^{211}Rn	-9.280
^{212}Rn	-9.260
^{213}Rn	-6.170
^{214}Rn	-4.770
^{215}Rn	-1.040
^{216}Rn	0.700
^{217}Rn	4.140
^{218}Rn	5.920
^{219}Rn	9.200
^{220}Rn	11.070
^{221}Rn	14.600
^{222}Rn	16.930
^{223}Rn	20.930
^{224}Rn	23.230
^{225}Rn	27.080
^{226}Rn	29.470
^{227}Rn	33.430
^{228}Rn	36.000
^{229}Rn	40.160
^{230}Rn	42.870
^{231}Rn	47.170
^{232}Rn	50.150
^{233}Rn	54.600
^{234}Rn	57.820
^{235}Rn	62.560
^{236}Rn	66.000
^{237}Rn	70.920
^{238}Rn	74.510
^{239}Rn	80.220
^{240}Rn	84.240
^{241}Rn	89.910
^{242}Rn	94.150
^{243}Rn	99.880
^{244}Rn	104.150
^{245}Rn	109.880
^{246}Rn	114.190
^{247}Rn	120.040
^{248}Rn	124.590
^{249}Rn	130.740
^{250}Rn	136.770
^{251}Rn	143.180
^{252}Rn	147.860
^{253}Rn	153.930

Isotope	Mass Excess
^{254}Rn	158.730
^{255}Rn	165.130
^{256}Rn	170.230
^{257}Rn	176.820
^{258}Rn	181.160
^{259}Rn	188.870
^{260}Rn	194.310
^{261}Rn	201.160
^{262}Rn	206.370
^{263}Rn	213.440
^{264}Rn	219.400
^{265}Rn	226.590
^{266}Rn	232.600
^{267}Rn	240.090
^{268}Rn	246.450
^{269}Rn	254.190
^{270}Rn	261.080
^{271}Rn	270.260
^{272}Rn	277.610
^{273}Rn	287.050
^{274}Rn	294.650
^{275}Rn	303.680
^{276}Rn	311.290
^{277}Rn	321.350
^{278}Rn	328.680
^{279}Rn	337.330
^{280}Rn	344.750
^{281}Rn	353.670
^{282}Rn	361.370
^{283}Rn	370.380
^{284}Rn	377.820
^{285}Rn	386.970
^{286}Rn	394.850
^{189}Fr	28.990
^{190}Fr	26.710
^{191}Fr	23.090
^{192}Fr	21.230
^{193}Fr	18.120
^{194}Fr	16.900
^{195}Fr	13.920
^{196}Fr	13.010
^{197}Fr	10.150
^{198}Fr	9.040
^{199}Fr	6.520
^{200}Fr	5.770
^{201}Fr	3.550
^{202}Fr	3.020
^{203}Fr	1.000
^{204}Fr	0.670
^{205}Fr	-1.450
^{206}Fr	-1.690
^{207}Fr	-3.180
^{208}Fr	-2.960
^{209}Fr	-4.090
^{210}Fr	-3.670
^{211}Fr	-4.640
^{212}Fr	-4.030
^{213}Fr	-4.010
^{214}Fr	-1.350
^{215}Fr	-0.070
^{216}Fr	3.240
^{217}Fr	5.000
^{218}Fr	7.450
^{219}Fr	8.840
^{220}Fr	11.720
^{221}Fr	13.400
^{222}Fr	16.730
^{223}Fr	18.800
^{224}Fr	22.280
^{225}Fr	24.410
^{226}Fr	27.920
^{227}Fr	30.280
^{228}Fr	33.900
^{229}Fr	36.370
^{230}Fr	40.140

Isotope	Mass Excess
^{231}Fr	42.820
^{232}Fr	46.740
^{233}Fr	49.670
^{234}Fr	53.790
^{235}Fr	57.010
^{236}Fr	61.360
^{237}Fr	64.820
^{238}Fr	69.350
^{239}Fr	72.910
^{240}Fr	78.180
^{241}Fr	82.360
^{242}Fr	87.700
^{243}Fr	91.910
^{244}Fr	97.350
^{245}Fr	101.640
^{246}Fr	107.000
^{247}Fr	111.310
^{248}Fr	116.810
^{249}Fr	121.380
^{250}Fr	127.180
^{251}Fr	133.340
^{252}Fr	139.310
^{253}Fr	144.000
^{254}Fr	149.870
^{255}Fr	154.580
^{256}Fr	160.690
^{257}Fr	165.720
^{258}Fr	171.970
^{259}Fr	176.410
^{260}Fr	183.750
^{261}Fr	189.280
^{262}Fr	195.750
^{263}Fr	200.910
^{264}Fr	207.690
^{265}Fr	213.770
^{266}Fr	220.650
^{267}Fr	226.720
^{268}Fr	233.820
^{269}Fr	240.210
^{270}Fr	247.620
^{271}Fr	254.510
^{272}Fr	263.370
^{273}Fr	270.710
^{274}Fr	279.880
^{275}Fr	287.500
^{276}Fr	297.140
^{277}Fr	304.340
^{278}Fr	312.650
^{279}Fr	319.950
^{280}Fr	328.300
^{281}Fr	335.700
^{282}Fr	344.440
^{283}Fr	352.000
^{284}Fr	361.100
^{285}Fr	369.180
^{286}Fr	376.950
^{287}Fr	384.870
^{288}Fr	395.700
^{289}Fr	403.740
^{192}Ra	30.700
^{193}Ra	28.930
^{194}Ra	25.370
^{195}Ra	24.020
^{196}Ra	20.700
^{197}Ra	19.440
^{198}Ra	16.760
^{199}Ra	15.600
^{200}Ra	12.760
^{201}Ra	11.910
^{202}Ra	9.340
^{203}Ra	8.770
^{204}Ra	6.310
^{205}Ra	5.930
^{206}Ra	3.470
^{207}Ra	3.260

Isotope	Mass Excess
^{208}Ra	1.380
^{209}Ra	1.590
^{210}Ra	0.150
^{211}Ra	0.530
^{212}Ra	-0.810
^{213}Ra	-0.170
^{214}Ra	-0.620
^{215}Ra	1.930
^{216}Ra	2.850
^{217}Ra	6.050
^{218}Ra	7.360
^{219}Ra	9.360
^{220}Ra	10.480
^{221}Ra	13.130
^{222}Ra	14.340
^{223}Ra	17.740
^{224}Ra	19.380
^{225}Ra	22.470
^{226}Ra	24.240
^{227}Ra	27.680
^{228}Ra	29.620
^{229}Ra	33.120
^{230}Ra	35.150
^{231}Ra	38.860
^{232}Ra	41.140
^{233}Ra	45.020
^{234}Ra	47.630
^{235}Ra	51.630
^{236}Ra	54.460
^{237}Ra	58.780
^{238}Ra	61.880
^{239}Ra	66.510
^{240}Ra	69.710
^{241}Ra	74.980
^{242}Ra	78.850
^{243}Ra	84.180
^{244}Ra	87.990
^{245}Ra	93.410
^{246}Ra	97.410
^{247}Ra	102.780
^{248}Ra	106.790
^{249}Ra	112.290
^{250}Ra	116.490
^{251}Ra	122.340
^{252}Ra	126.990
^{253}Ra	134.260
^{254}Ra	138.770
^{255}Ra	144.510
^{256}Ra	148.980
^{257}Ra	154.980
^{258}Ra	159.740
^{259}Ra	165.990
^{260}Ra	169.940
^{261}Ra	177.480
^{262}Ra	182.650
^{263}Ra	189.160
^{264}Ra	193.900
^{265}Ra	200.790
^{266}Ra	206.460
^{267}Ra	213.510
^{268}Ra	219.240
^{269}Ra	226.410
^{270}Ra	232.470
^{271}Ra	239.910
^{272}Ra	246.490
^{273}Ra	255.350
^{274}Ra	262.350
^{275}Ra	271.450
^{276}Ra	278.740
^{277}Ra	287.650
^{278}Ra	294.550
^{279}Ra	302.790
^{280}Ra	309.740
^{281}Ra	318.100
^{282}Ra	325.400

Isotope	Mass Excess
^{283}Ra	334.030
^{284}Ra	341.320
^{285}Ra	350.580
^{286}Ra	358.020
^{287}Ra	366.850
^{288}Ra	373.410
^{289}Ra	384.150
^{290}Ra	391.860
^{291}Ra	398.870
^{292}Ra	406.700
^{195}Ac	34.820
^{196}Ac	32.900
^{197}Ac	29.580
^{198}Ac	28.050
^{199}Ac	25.380
^{200}Ac	24.330
^{201}Ac	21.420
^{202}Ac	20.170
^{203}Ac	17.520
^{204}Ac	16.520
^{205}Ac	14.050
^{206}Ac	13.270
^{207}Ac	11.010
^{208}Ac	10.500
^{209}Ac	8.340
^{210}Ac	8.240
^{211}Ac	6.860
^{212}Ac	6.930
^{213}Ac	5.600
^{214}Ac	5.800
^{215}Ac	5.280
^{216}Ac	7.480
^{217}Ac	8.350
^{218}Ac	10.900
^{219}Ac	12.240
^{220}Ac	13.430
^{221}Ac	14.340
^{222}Ac	16.530
^{223}Ac	17.920
^{224}Ac	20.690
^{225}Ac	22.050
^{226}Ac	24.740
^{227}Ac	26.400
^{228}Ac	29.400
^{229}Ac	31.280
^{230}Ac	34.320
^{231}Ac	36.300
^{232}Ac	39.630
^{233}Ac	41.860
^{234}Ac	45.410
^{235}Ac	48.000
^{236}Ac	51.640
^{237}Ac	54.460
^{238}Ac	58.400
^{239}Ac	61.480
^{240}Ac	65.580
^{241}Ac	68.940
^{242}Ac	73.870
^{243}Ac	77.590
^{244}Ac	82.740
^{245}Ac	86.590
^{246}Ac	91.690
^{247}Ac	95.630
^{248}Ac	100.690
^{249}Ac	104.690
^{250}Ac	109.890
^{251}Ac	114.120
^{252}Ac	119.610
^{253}Ac	124.260
^{254}Ac	131.310
^{255}Ac	135.910
^{256}Ac	141.450
^{257}Ac	145.760
^{258}Ac	151.540
^{259}Ac	156.230

Isotope	Mass Excess
^{260}Ac	162.230
^{261}Ac	166.060
^{262}Ac	173.250
^{263}Ac	178.420
^{264}Ac	184.590
^{265}Ac	189.470
^{266}Ac	195.920
^{267}Ac	201.590
^{268}Ac	208.400
^{269}Ac	214.140
^{270}Ac	220.990
^{271}Ac	227.090
^{272}Ac	234.200
^{273}Ac	240.790
^{274}Ac	249.300
^{275}Ac	256.300
^{276}Ac	265.080
^{277}Ac	272.350
^{278}Ac	280.230
^{279}Ac	287.060
^{280}Ac	295.060
^{281}Ac	301.990
^{282}Ac	309.980
^{283}Ac	317.170
^{284}Ac	325.390
^{285}Ac	332.810
^{286}Ac	341.420
^{287}Ac	348.860
^{288}Ac	356.740
^{289}Ac	364.330
^{290}Ac	374.700
^{291}Ac	382.370
^{292}Ac	389.170
^{293}Ac	397.030
^{294}Ac	405.880
^{295}Ac	413.930
^{198}Th	37.160
^{199}Th	35.540
^{200}Th	32.230
^{201}Th	31.360
^{202}Th	28.400
^{203}Th	27.140
^{204}Th	24.100
^{205}Th	23.070
^{206}Th	20.170
^{207}Th	19.320
^{208}Th	16.580
^{209}Th	16.010
^{210}Th	13.660
^{211}Th	13.500
^{212}Th	11.760
^{213}Th	11.750
^{214}Th	10.120
^{215}Th	10.300
^{216}Th	9.420
^{217}Th	11.520
^{218}Th	11.960
^{219}Th	14.400
^{220}Th	15.100
^{221}Th	16.370
^{222}Th	16.850
^{223}Th	19.010
^{224}Th	20.200
^{225}Th	22.510
^{226}Th	23.780
^{227}Th	26.210
^{228}Th	27.330
^{229}Th	30.070
^{230}Th	31.390
^{231}Th	34.360
^{232}Th	35.940
^{233}Th	39.220
^{234}Th	41.090
^{235}Th	44.620
^{236}Th	46.790

Isotope	Mass Excess
^{237}Th	50.400
^{238}Th	52.850
^{239}Th	56.810
^{240}Th	59.520
^{241}Th	63.590
^{242}Th	66.590
^{243}Th	71.510
^{244}Th	74.870
^{245}Th	80.030
^{246}Th	83.530
^{247}Th	88.540
^{248}Th	92.230
^{249}Th	97.270
^{250}Th	100.930
^{251}Th	106.120
^{252}Th	109.990
^{253}Th	115.550
^{254}Th	119.900
^{255}Th	125.910
^{256}Th	131.180
^{257}Th	136.720
^{258}Th	140.860
^{259}Th	146.440
^{260}Th	150.960
^{261}Th	156.880
^{262}Th	160.600
^{263}Th	167.720
^{264}Th	172.610
^{265}Th	178.780
^{266}Th	183.390
^{267}Th	189.840
^{268}Th	195.160
^{269}Th	202.060
^{270}Th	207.460
^{271}Th	214.330
^{272}Th	220.090
^{273}Th	227.260
^{274}Th	233.530
^{275}Th	242.070
^{276}Th	248.710
^{277}Th	257.410
^{278}Th	264.230
^{279}Th	271.660
^{280}Th	278.180
^{281}Th	286.180
^{282}Th	292.880
^{283}Th	300.840
^{284}Th	307.650
^{285}Th	315.870
^{286}Th	322.960
^{287}Th	331.550
^{288}Th	338.230
^{289}Th	346.650
^{290}Th	355.490
^{291}Th	364.010
^{292}Th	371.400
^{293}Th	378.380
^{294}Th	385.930
^{295}Th	394.770
^{296}Th	402.520
^{297}Th	411.690
^{298}Th	419.970
^{299}Th	428.760
^{200}Pa	44.940
^{201}Pa	41.610
^{202}Pa	40.400
^{203}Pa	37.180
^{204}Pa	35.650
^{205}Pa	32.780
^{206}Pa	31.340
^{207}Pa	28.680
^{208}Pa	27.410
^{209}Pa	24.670
^{210}Pa	23.730
^{211}Pa	21.370

Isotope	Mass Excess
^{212}Pa	20.930
^{213}Pa	19.170
^{214}Pa	18.830
^{215}Pa	17.190
^{216}Pa	17.010
^{217}Pa	16.080
^{218}Pa	17.830
^{219}Pa	18.210
^{220}Pa	20.700
^{221}Pa	21.470
^{222}Pa	21.250
^{223}Pa	21.760
^{224}Pa	23.670
^{225}Pa	24.380
^{226}Pa	26.640
^{227}Pa	27.190
^{228}Pa	29.250
^{229}Pa	30.330
^{230}Pa	32.600
^{231}Pa	33.900
^{232}Pa	36.490
^{233}Pa	38.010
^{234}Pa	40.860
^{235}Pa	42.730
^{236}Pa	45.850
^{237}Pa	48.060
^{238}Pa	51.260
^{239}Pa	53.690
^{240}Pa	57.310
^{241}Pa	59.990
^{242}Pa	63.880
^{243}Pa	66.620
^{244}Pa	71.010
^{245}Pa	74.560
^{246}Pa	79.440
^{247}Pa	82.890
^{248}Pa	87.570
^{249}Pa	91.200
^{250}Pa	95.950
^{251}Pa	99.620
^{252}Pa	104.480
^{253}Pa	108.380
^{254}Pa	113.580
^{255}Pa	117.950
^{256}Pa	123.750
^{257}Pa	128.020
^{258}Pa	134.180
^{259}Pa	138.340
^{260}Pa	143.820
^{261}Pa	148.190
^{262}Pa	153.870
^{263}Pa	157.570
^{264}Pa	164.410
^{265}Pa	169.290
^{266}Pa	175.220
^{267}Pa	179.750
^{268}Pa	185.890
^{269}Pa	191.210
^{270}Pa	197.800
^{271}Pa	203.220
^{272}Pa	209.770
^{273}Pa	215.560
^{274}Pa	222.430
^{275}Pa	228.710
^{276}Pa	236.920
^{277}Pa	243.540
^{278}Pa	251.860
^{279}Pa	257.730
^{280}Pa	265.190
^{281}Pa	271.800
^{282}Pa	279.430
^{283}Pa	286.060
^{284}Pa	293.680
^{285}Pa	300.500
^{286}Pa	308.340

Isotope	Mass Excess
^{287}Pa	315.350
^{288}Pa	323.380
^{289}Pa	330.460
^{290}Pa	338.620
^{291}Pa	347.190
^{292}Pa	355.380
^{293}Pa	362.740
^{294}Pa	371.180
^{295}Pa	377.290
^{296}Pa	385.800
^{297}Pa	393.710
^{298}Pa	402.650
^{299}Pa	410.660
^{300}Pa	420.190
^{301}Pa	426.830
^{302}Pa	435.920
^{203}U	48.070
^{204}U	44.580
^{205}U	43.060
^{206}U	39.870
^{207}U	38.370
^{208}U	35.330
^{209}U	34.260
^{210}U	31.080
^{211}U	30.110
^{212}U	27.350
^{213}U	26.820
^{214}U	24.750
^{215}U	24.390
^{216}U	22.380
^{217}U	22.170
^{218}U	20.870
^{219}U	22.640
^{220}U	22.500
^{221}U	23.980
^{222}U	24.120
^{223}U	25.120
^{224}U	25.220
^{225}U	27.140
^{226}U	27.450
^{227}U	29.080
^{228}U	29.290
^{229}U	31.210
^{230}U	31.850
^{231}U	34.080
^{232}U	34.900
^{233}U	37.400
^{234}U	38.520
^{235}U	41.340
^{236}U	42.840
^{237}U	45.930
^{238}U	47.770
^{239}U	50.950
^{240}U	53.010
^{241}U	56.590
^{242}U	58.900
^{243}U	62.750
^{244}U	65.160
^{245}U	69.480
^{246}U	72.720
^{247}U	77.540
^{248}U	80.630
^{249}U	85.320
^{250}U	88.600
^{251}U	93.310
^{252}U	96.630
^{253}U	101.480
^{254}U	105.040
^{255}U	110.280
^{256}U	114.350
^{257}U	119.790
^{258}U	124.130
^{259}U	129.570
^{260}U	133.890
^{261}U	139.490

Isotope	Mass Excess
^{262}U	143.750
^{263}U	149.420
^{264}U	152.900
^{265}U	159.560
^{266}U	164.140
^{267}U	170.020
^{268}U	174.400
^{269}U	180.550
^{270}U	185.520
^{271}U	192.160
^{272}U	197.270
^{273}U	203.820
^{274}U	209.320
^{275}U	216.170
^{276}U	222.130
^{277}U	230.370
^{278}U	236.670
^{279}U	244.890
^{280}U	250.180
^{281}U	257.600
^{282}U	263.790
^{283}U	271.390
^{284}U	277.800
^{285}U	285.480
^{286}U	291.970
^{287}U	299.800
^{288}U	306.580
^{289}U	314.630
^{290}U	321.380
^{291}U	329.570
^{292}U	337.510
^{293}U	345.730
^{294}U	352.640
^{295}U	361.000
^{296}U	368.280
^{297}U	377.080
^{298}U	383.520
^{299}U	392.310
^{300}U	400.180
^{301}U	408.100
^{302}U	415.600
^{303}U	424.670
^{304}U	434.440
^{305}U	441.780
^{206}Np	52.260
^{207}Np	49.040
^{208}Np	47.410
^{209}Np	44.310
^{210}Np	42.850
^{211}Np	39.930
^{212}Np	38.550
^{213}Np	35.820
^{214}Np	34.880
^{215}Np	32.850
^{216}Np	32.150
^{217}Np	30.210
^{218}Np	29.730
^{219}Np	28.290
^{220}Np	29.700
^{221}Np	29.470
^{222}Np	31.480
^{223}Np	29.800
^{224}Np	31.090
^{225}Np	31.220
^{226}Np	32.450
^{227}Np	32.320
^{228}Np	33.550
^{229}Np	33.690
^{230}Np	35.220
^{231}Np	35.760
^{232}Np	37.540
^{233}Np	38.280
^{234}Np	40.380
^{235}Np	41.420
^{236}Np	43.900

Isotope	Mass Excess
^{237}Np	45.330
^{238}Np	48.080
^{239}Np	49.690
^{240}Np	52.650
^{241}Np	54.680
^{242}Np	57.900
^{243}Np	60.150
^{244}Np	63.670
^{245}Np	66.010
^{246}Np	70.020
^{247}Np	73.190
^{248}Np	77.490
^{249}Np	80.820
^{250}Np	85.160
^{251}Np	88.440
^{252}Np	92.820
^{253}Np	96.150
^{254}Np	100.660
^{255}Np	104.190
^{256}Np	109.110
^{257}Np	113.150
^{258}Np	118.300
^{259}Np	122.710
^{260}Np	127.850
^{261}Np	132.090
^{262}Np	137.420
^{263}Np	141.790
^{264}Np	147.070
^{265}Np	150.660
^{266}Np	156.990
^{267}Np	161.620
^{268}Np	167.190
^{269}Np	171.550
^{270}Np	177.380
^{271}Np	182.370
^{272}Np	188.770
^{273}Np	193.950
^{274}Np	200.220
^{275}Np	205.760
^{276}Np	212.230
^{277}Np	218.200
^{278}Np	226.080
^{279}Np	232.350
^{280}Np	238.880
^{281}Np	244.930
^{282}Np	251.970
^{283}Np	258.120
^{284}Np	265.490
^{285}Np	271.770
^{286}Np	279.160
^{287}Np	285.700
^{288}Np	293.270
^{289}Np	300.100
^{290}Np	308.210
^{291}Np	315.010
^{292}Np	323.520
^{293}Np	330.190
^{294}Np	337.950
^{295}Np	344.940
^{296}Np	352.880
^{297}Np	360.130
^{298}Np	368.350
^{299}Np	375.830
^{300}Np	383.510
^{301}Np	390.800
^{302}Np	399.150
^{303}Np	406.650
^{304}Np	415.450
^{305}Np	425.180
^{306}Np	432.290
^{307}Np	440.340
^{308}Np	449.620
^{209}Pu	55.050
^{210}Pu	51.650
^{211}Pu	50.090

Isotope	Mass Excess
^{212}Pu	46.920
^{213}Pu	45.630
^{214}Pu	42.500
^{215}Pu	41.550
^{216}Pu	39.120
^{217}Pu	38.380
^{218}Pu	36.040
^{219}Pu	35.460
^{220}Pu	33.720
^{221}Pu	35.050
^{222}Pu	34.450
^{223}Pu	35.150
^{224}Pu	34.480
^{225}Pu	35.580
^{226}Pu	35.220
^{227}Pu	36.490
^{228}Pu	35.900
^{229}Pu	37.110
^{230}Pu	36.810
^{231}Pu	38.310
^{232}Pu	38.380
^{233}Pu	40.120
^{234}Pu	40.450
^{235}Pu	42.480
^{236}Pu	43.100
^{237}Pu	45.510
^{238}Pu	46.530
^{239}Pu	49.080
^{240}Pu	50.440
^{241}Pu	53.370
^{242}Pu	54.990
^{243}Pu	58.110
^{244}Pu	59.980
^{245}Pu	63.190
^{246}Pu	65.390
^{247}Pu	69.330
^{248}Pu	72.190
^{249}Pu	76.460
^{250}Pu	79.390
^{251}Pu	83.680
^{252}Pu	86.590
^{253}Pu	90.970
^{254}Pu	93.940
^{255}Pu	98.440
^{256}Pu	101.630
^{257}Pu	106.540
^{258}Pu	110.270
^{259}Pu	115.460
^{260}Pu	119.590
^{261}Pu	124.750
^{262}Pu	128.480
^{263}Pu	134.080
^{264}Pu	138.130
^{265}Pu	143.380
^{266}Pu	146.740
^{267}Pu	152.980
^{268}Pu	157.220
^{269}Pu	162.840
^{270}Pu	166.830
^{271}Pu	172.760
^{272}Pu	177.410
^{273}Pu	183.800
^{274}Pu	188.660
^{275}Pu	194.900
^{276}Pu	200.100
^{277}Pu	206.670
^{278}Pu	212.320
^{279}Pu	220.130
^{280}Pu	226.120
^{281}Pu	233.740
^{282}Pu	238.440
^{283}Pu	245.400
^{284}Pu	251.340
^{285}Pu	258.460
^{286}Pu	264.530

Isotope	Mass Excess
^{287}Pu	271.930
^{288}Pu	278.280
^{289}Pu	286.190
^{290}Pu	292.540
^{291}Pu	300.270
^{292}Pu	307.150
^{293}Pu	314.900
^{294}Pu	321.430
^{295}Pu	329.120
^{296}Pu	335.700
^{297}Pu	343.780
^{298}Pu	350.550
^{299}Pu	358.930
^{300}Pu	365.570
^{301}Pu	373.730
^{302}Pu	380.720
^{303}Pu	389.070
^{304}Pu	396.250
^{305}Pu	405.070
^{306}Pu	412.700
^{307}Pu	421.540
^{308}Pu	429.410
^{309}Pu	438.440
^{310}Pu	446.280
^{311}Pu	455.370
^{312}Pu	463.110
^{212}Am	59.430
^{213}Am	56.160
^{214}Am	54.830
^{215}Am	51.720
^{216}Am	50.440
^{217}Am	47.940
^{218}Am	46.860
^{219}Am	44.560
^{220}Am	43.720
^{221}Am	41.810
^{222}Am	42.890
^{223}Am	42.080
^{224}Am	43.620
^{225}Am	41.700
^{226}Am	42.450
^{227}Am	41.770
^{228}Am	42.340
^{229}Am	41.670
^{230}Am	42.490
^{231}Am	42.150
^{232}Am	43.260
^{233}Am	43.230
^{234}Am	44.570
^{235}Am	44.790
^{236}Am	46.440
^{237}Am	46.990
^{238}Am	48.990
^{239}Am	49.980
^{240}Am	52.120
^{241}Am	53.400
^{242}Am	55.940
^{243}Am	57.520
^{244}Am	60.270
^{245}Am	62.110
^{246}Am	64.960
^{247}Am	67.140
^{248}Am	70.720
^{249}Am	73.550
^{250}Am	77.500
^{251}Am	80.400
^{252}Am	84.340
^{253}Am	87.230
^{254}Am	91.240
^{255}Am	94.210
^{256}Am	98.400
^{257}Am	101.580
^{258}Am	106.160
^{259}Am	109.880
^{260}Am	114.760

Isotope	Mass Excess
^{261}Am	118.920
^{262}Am	123.710
^{263}Am	127.510
^{264}Am	132.640
^{265}Am	136.950
^{266}Am	141.880
^{267}Am	145.300
^{268}Am	151.100
^{269}Am	155.430
^{270}Am	160.720
^{271}Am	164.740
^{272}Am	170.260
^{273}Am	175.020
^{274}Am	181.150
^{275}Am	186.030
^{276}Am	192.010
^{277}Am	197.220
^{278}Am	203.510
^{279}Am	209.180
^{280}Am	216.470
^{281}Am	222.430
^{282}Am	228.500
^{283}Am	234.180
^{284}Am	240.910
^{285}Am	246.720
^{286}Am	253.580
^{287}Am	260.770
^{288}Am	266.770
^{289}Am	273.270
^{290}Am	280.520
^{291}Am	287.160
^{292}Am	294.500
^{293}Am	300.810
^{294}Am	308.240
^{295}Am	314.750
^{296}Am	322.210
^{297}Am	328.710
^{298}Am	336.520
^{299}Am	343.250
^{300}Am	351.100
^{301}Am	358.070
^{302}Am	365.990
^{303}Am	372.990
^{304}Am	381.040
^{305}Am	388.230
^{306}Am	396.750
^{307}Am	404.390
^{308}Am	412.960
^{309}Am	420.770
^{310}Am	429.410
^{311}Am	437.380
^{312}Am	445.970
^{313}Am	453.730
^{314}Am	462.590
^{315}Am	470.480
^{215}Cm	62.340
^{216}Cm	59.130
^{217}Cm	57.800
^{218}Cm	54.870
^{219}Cm	53.770
^{220}Cm	51.050
^{221}Cm	50.100
^{222}Cm	47.880
^{223}Cm	48.810
^{224}Cm	47.420
^{225}Cm	49.220
^{226}Cm	46.910
^{227}Cm	47.760
^{228}Cm	46.630
^{229}Cm	47.200
^{230}Cm	46.130
^{231}Cm	46.930
^{232}Cm	46.180
^{233}Cm	47.250
^{234}Cm	46.820

Isotope	Mass Excess
^{235}Cm	48.120
^{236}Cm	47.920
^{237}Cm	49.550
^{238}Cm	49.690
^{239}Cm	51.630
^{240}Cm	52.040
^{241}Cm	54.240
^{242}Cm	55.120
^{243}Cm	57.390
^{244}Cm	58.520
^{245}Cm	61.210
^{246}Cm	62.590
^{247}Cm	65.610
^{248}Cm	67.320
^{249}Cm	70.890
^{250}Cm	73.350
^{251}Cm	77.240
^{252}Cm	79.650
^{253}Cm	83.750
^{254}Cm	86.250
^{255}Cm	90.250
^{256}Cm	92.850
^{257}Cm	96.990
^{258}Cm	99.820
^{259}Cm	104.370
^{260}Cm	107.780
^{261}Cm	112.650
^{262}Cm	116.260
^{263}Cm	121.410
^{264}Cm	124.850
^{265}Cm	129.740
^{266}Cm	134.020
^{267}Cm	138.960
^{268}Cm	142.190
^{269}Cm	147.820
^{270}Cm	151.820
^{271}Cm	157.100
^{272}Cm	160.930
^{273}Cm	166.430
^{274}Cm	170.870
^{275}Cm	176.930
^{276}Cm	181.490
^{277}Cm	187.470
^{278}Cm	192.360
^{279}Cm	198.650
^{280}Cm	203.990
^{281}Cm	211.330
^{282}Cm	216.910
^{283}Cm	224.150
^{284}Cm	229.880
^{285}Cm	236.410
^{286}Cm	241.710
^{287}Cm	248.530
^{288}Cm	254.050
^{289}Cm	261.060
^{290}Cm	266.770
^{291}Cm	273.980
^{292}Cm	279.850
^{293}Cm	287.150
^{294}Cm	293.150
^{295}Cm	300.550
^{296}Cm	306.720
^{297}Cm	314.250
^{298}Cm	320.560
^{299}Cm	328.130
^{300}Cm	334.680
^{301}Cm	342.540
^{302}Cm	349.220
^{303}Cm	357.150
^{304}Cm	363.840
^{305}Cm	371.880
^{306}Cm	378.780
^{307}Cm	387.300
^{308}Cm	394.610
^{309}Cm	403.170

Isotope	Mass Excess
^{310}Cm	410.670
^{311}Cm	419.300
^{312}Cm	426.830
^{313}Cm	435.490
^{314}Cm	442.940
^{315}Cm	451.830
^{316}Cm	459.440
^{317}Cm	468.460
^{318}Cm	476.480
^{218}Bk	67.330
^{219}Bk	64.390
^{220}Bk	62.900
^{221}Bk	60.210
^{222}Bk	59.000
^{223}Bk	56.630
^{224}Bk	57.270
^{225}Bk	55.550
^{226}Bk	57.010
^{227}Bk	54.970
^{228}Bk	54.920
^{229}Bk	53.540
^{230}Bk	53.820
^{231}Bk	52.700
^{232}Bk	53.130
^{233}Bk	52.360
^{234}Bk	53.040
^{235}Bk	52.530
^{236}Bk	53.450
^{237}Bk	53.190
^{238}Bk	54.450
^{239}Bk	54.490
^{240}Bk	55.890
^{241}Bk	56.390
^{242}Bk	58.190
^{243}Bk	58.800
^{244}Bk	60.830
^{245}Bk	61.910
^{246}Bk	64.210
^{247}Bk	65.540
^{248}Bk	68.150
^{249}Bk	69.820
^{250}Bk	73.020
^{251}Bk	75.190
^{252}Bk	79.000
^{253}Bk	81.380
^{254}Bk	85.150
^{255}Bk	87.640
^{256}Bk	91.290
^{257}Bk	93.880
^{258}Bk	97.680
^{259}Bk	100.490
^{260}Bk	104.700
^{261}Bk	108.080
^{262}Bk	112.670
^{263}Bk	116.210
^{264}Bk	121.170
^{265}Bk	124.630
^{266}Bk	129.200
^{267}Bk	133.410
^{268}Bk	138.230
^{269}Bk	141.510
^{270}Bk	146.740
^{271}Bk	150.700
^{272}Bk	155.710
^{273}Bk	159.600
^{274}Bk	164.780
^{275}Bk	169.230
^{276}Bk	175.040
^{277}Bk	179.590
^{278}Bk	185.270
^{279}Bk	190.200
^{280}Bk	196.210
^{281}Bk	201.560
^{282}Bk	208.400
^{283}Bk	213.930

Isotope	Mass Excess
^{284}Bk	220.760
^{285}Bk	226.050
^{286}Bk	232.400
^{287}Bk	237.690
^{288}Bk	244.190
^{289}Bk	249.700
^{290}Bk	256.400
^{291}Bk	262.090
^{292}Bk	268.960
^{293}Bk	274.810
^{294}Bk	281.740
^{295}Bk	287.790
^{296}Bk	294.790
^{297}Bk	300.890
^{298}Bk	308.110
^{299}Bk	314.450
^{300}Bk	321.690
^{301}Bk	328.220
^{302}Bk	335.750
^{303}Bk	342.670
^{304}Bk	350.360
^{305}Bk	357.020
^{306}Bk	364.750
^{307}Bk	371.650
^{308}Bk	379.690
^{309}Bk	386.970
^{310}Bk	395.380
^{311}Bk	402.820
^{312}Bk	411.210
^{313}Bk	418.720
^{314}Bk	427.020
^{315}Bk	434.470
^{316}Bk	443.110
^{317}Bk	450.730
^{318}Bk	459.460
^{319}Bk	467.460
^{320}Bk	476.410
^{321}Bk	484.610
^{221}Cf	70.470
^{222}Cf	67.360
^{223}Cf	66.110
^{224}Cf	63.380
^{225}Cf	63.870
^{226}Cf	61.920
^{227}Cf	63.260
^{228}Cf	60.910
^{229}Cf	60.870
^{230}Cf	59.170
^{231}Cf	59.380
^{232}Cf	57.920
^{233}Cf	58.390
^{234}Cf	57.210
^{235}Cf	57.850
^{236}Cf	56.970
^{237}Cf	57.840
^{238}Cf	57.200
^{239}Cf	58.420
^{240}Cf	58.050
^{241}Cf	59.390
^{242}Cf	59.440
^{243}Cf	61.010
^{244}Cf	61.370
^{245}Cf	63.370
^{246}Cf	64.040
^{247}Cf	66.260
^{248}Cf	67.210
^{249}Cf	69.740
^{250}Cf	70.890
^{251}Cf	74.180
^{252}Cf	76.000
^{253}Cf	79.760
^{254}Cf	81.770
^{255}Cf	85.300
^{256}Cf	87.590
^{257}Cf	91.210

Isotope	Mass Excess
^{258}Cf	93.420
^{259}Cf	97.190
^{260}Cf	99.610
^{261}Cf	103.760
^{262}Cf	106.840
^{263}Cf	111.440
^{264}Cf	114.690
^{265}Cf	119.660
^{266}Cf	122.720
^{267}Cf	127.370
^{268}Cf	131.250
^{269}Cf	136.030
^{270}Cf	139.160
^{271}Cf	144.200
^{272}Cf	147.820
^{273}Cf	152.840
^{274}Cf	156.510
^{275}Cf	161.680
^{276}Cf	165.790
^{277}Cf	171.530
^{278}Cf	175.780
^{279}Cf	181.460
^{280}Cf	186.070
^{281}Cf	192.090
^{282}Cf	197.130
^{283}Cf	204.000
^{284}Cf	209.200
^{285}Cf	215.920
^{286}Cf	221.020
^{287}Cf	227.350
^{288}Cf	232.320
^{289}Cf	238.810
^{290}Cf	244.010
^{291}Cf	250.670
^{292}Cf	256.040
^{293}Cf	262.880
^{294}Cf	268.420
^{295}Cf	275.400
^{296}Cf	281.010
^{297}Cf	288.050
^{298}Cf	293.800
^{299}Cf	300.960
^{300}Cf	306.980
^{301}Cf	314.310
^{302}Cf	320.570
^{303}Cf	328.030
^{304}Cf	334.510
^{305}Cf	342.260
^{306}Cf	348.900
^{307}Cf	356.530
^{308}Cf	363.220
^{309}Cf	371.240
^{310}Cf	378.230
^{311}Cf	386.600
^{312}Cf	393.730
^{313}Cf	402.070
^{314}Cf	409.300
^{315}Cf	417.510
^{316}Cf	424.930
^{317}Cf	433.280
^{318}Cf	440.550
^{319}Cf	449.260
^{320}Cf	457.040
^{321}Cf	465.910
^{322}Cf	473.830
^{323}Cf	482.940
^{324}Cf	494.220
^{325}Cf	502.690
^{224}Es	75.580
^{225}Es	72.850
^{226}Es	72.930
^{227}Es	70.750
^{228}Es	71.800
^{229}Es	69.020
^{230}Es	68.600

Isotope	Mass Excess
^{231}Es	66.880
^{232}Es	66.720
^{233}Es	65.290
^{234}Es	65.340
^{235}Es	64.130
^{236}Es	64.420
^{237}Es	63.440
^{238}Es	63.960
^{239}Es	63.220
^{240}Es	64.050
^{241}Es	63.580
^{242}Es	64.670
^{243}Es	64.690
^{244}Es	65.820
^{245}Es	66.130
^{246}Es	67.730
^{247}Es	68.340
^{248}Es	70.180
^{249}Es	71.030
^{250}Es	73.010
^{251}Es	74.280
^{252}Es	77.230
^{253}Es	79.000
^{254}Es	82.390
^{255}Es	84.390
^{256}Es	87.540
^{257}Es	89.680
^{258}Es	93.090
^{259}Es	95.280
^{260}Es	98.660
^{261}Es	101.060
^{262}Es	104.910
^{263}Es	107.910
^{264}Es	112.210
^{265}Es	115.420
^{266}Es	120.200
^{267}Es	123.250
^{268}Es	127.590
^{269}Es	131.330
^{270}Es	135.810
^{271}Es	139.390
^{272}Es	143.860
^{273}Es	147.480
^{274}Es	152.150
^{275}Es	156.150
^{276}Es	160.790
^{277}Es	164.890
^{278}Es	170.290
^{279}Es	174.610
^{280}Es	179.980
^{281}Es	184.650
^{282}Es	190.310
^{283}Es	195.330
^{284}Es	201.660
^{285}Es	206.900
^{286}Es	213.500
^{287}Es	218.220
^{288}Es	224.240
^{289}Es	229.200
^{290}Es	235.380
^{291}Es	240.540
^{292}Es	246.880
^{293}Es	252.240
^{294}Es	258.760
^{295}Es	264.270
^{296}Es	270.850
^{297}Es	276.510
^{298}Es	283.170
^{299}Es	288.950
^{300}Es	295.760
^{301}Es	301.760
^{302}Es	308.790
^{303}Es	315.040
^{304}Es	322.340
^{305}Es	328.800

Isotope	Mass Excess
^{306}Es	336.310
^{307}Es	342.880
^{308}Es	350.300
^{309}Es	357.020
^{310}Es	364.700
^{311}Es	371.680
^{312}Es	379.620
^{313}Es	386.590
^{314}Es	394.770
^{315}Es	401.950
^{316}Es	409.890
^{317}Es	417.330
^{318}Es	425.410
^{319}Es	432.670
^{320}Es	441.070
^{321}Es	448.810
^{322}Es	457.440
^{323}Es	465.340
^{324}Es	474.140
^{325}Es	482.190
^{326}Es	493.920
^{327}Es	500.950
^{328}Es	509.650
^{226}Fm	80.200
^{227}Fm	80.220
^{228}Fm	77.890
^{229}Fm	78.710
^{230}Fm	75.750
^{231}Fm	75.280
^{232}Fm	73.200
^{233}Fm	72.970
^{234}Fm	71.180
^{235}Fm	71.310
^{236}Fm	69.720
^{237}Fm	70.010
^{238}Fm	68.640
^{239}Fm	69.140
^{240}Fm	68.100
^{241}Fm	68.880
^{242}Fm	68.050
^{243}Fm	69.080
^{244}Fm	68.690
^{245}Fm	69.770
^{246}Fm	69.690
^{247}Fm	71.230
^{248}Fm	71.430
^{249}Fm	73.220
^{250}Fm	73.660
^{251}Fm	75.560
^{252}Fm	76.430
^{253}Fm	79.340
^{254}Fm	80.710
^{255}Fm	83.790
^{256}Fm	85.660
^{257}Fm	88.770
^{258}Fm	90.510
^{259}Fm	93.690
^{260}Fm	95.610
^{261}Fm	98.980
^{262}Fm	101.000
^{263}Fm	104.790
^{264}Fm	107.450
^{265}Fm	111.780
^{266}Fm	114.640
^{267}Fm	119.420
^{268}Fm	122.180
^{269}Fm	126.490
^{270}Fm	129.890
^{271}Fm	134.380
^{272}Fm	137.620
^{273}Fm	142.040
^{274}Fm	145.330
^{275}Fm	150.000
^{276}Fm	153.690
^{277}Fm	158.420

Isotope	Mass Excess
^{278}Fm	162.190
^{279}Fm	167.520
^{280}Fm	171.520
^{281}Fm	176.880
^{282}Fm	181.290
^{283}Fm	186.940
^{284}Fm	191.630
^{285}Fm	198.010
^{286}Fm	203.510
^{287}Fm	209.320
^{288}Fm	214.130
^{289}Fm	220.140
^{290}Fm	224.760
^{291}Fm	230.910
^{292}Fm	235.780
^{293}Fm	242.100
^{294}Fm	247.140
^{295}Fm	253.630
^{296}Fm	258.840
^{297}Fm	265.380
^{298}Fm	270.740
^{299}Fm	277.360
^{300}Fm	282.740
^{301}Fm	289.570
^{302}Fm	295.290
^{303}Fm	302.230
^{304}Fm	308.190
^{305}Fm	315.760
^{306}Fm	321.720
^{307}Fm	329.400
^{308}Fm	335.710
^{309}Fm	343.130
^{310}Fm	349.570
^{311}Fm	357.230
^{312}Fm	363.860
^{313}Fm	371.980
^{314}Fm	378.430
^{315}Fm	386.570
^{316}Fm	393.380
^{317}Fm	401.600
^{318}Fm	408.410
^{319}Fm	416.440
^{320}Fm	423.400
^{321}Fm	431.780
^{322}Fm	439.240
^{323}Fm	447.820
^{324}Fm	455.430
^{325}Fm	464.220
^{326}Fm	471.960
^{327}Fm	483.600
^{328}Fm	490.350
^{329}Fm	499.070
^{330}Fm	506.730
^{331}Fm	515.870
^{229}Md	87.430
^{230}Md	87.920
^{231}Md	84.910
^{232}Md	84.010
^{233}Md	81.870
^{234}Md	81.260
^{235}Md	79.380
^{236}Md	79.160
^{237}Md	77.600
^{238}Md	77.550
^{239}Md	76.260
^{240}Md	76.380
^{241}Md	75.220
^{242}Md	75.620
^{243}Md	74.770
^{244}Md	75.430
^{245}Md	75.000
^{246}Md	75.960
^{247}Md	75.560
^{248}Md	76.710
^{249}Md	76.830

Isotope	Mass Excess
^{250}Md	78.240
^{251}Md	78.580
^{252}Md	80.120
^{253}Md	80.910
^{254}Md	83.400
^{255}Md	84.720
^{256}Md	87.360
^{257}Md	89.200
^{258}Md	91.870
^{259}Md	93.540
^{260}Md	96.340
^{261}Md	98.230
^{262}Md	101.230
^{263}Md	103.210
^{264}Md	106.650
^{265}Md	109.300
^{266}Md	113.300
^{267}Md	116.150
^{268}Md	120.350
^{269}Md	123.510
^{270}Md	127.510
^{271}Md	130.570
^{272}Md	135.120
^{273}Md	138.150
^{274}Md	142.440
^{275}Md	145.710
^{276}Md	150.070
^{277}Md	153.740
^{278}Md	158.260
^{279}Md	162.010
^{280}Md	167.060
^{281}Md	171.050
^{282}Md	176.130
^{283}Md	180.530
^{284}Md	185.860
^{285}Md	190.500
^{286}Md	197.200
^{287}Md	201.380
^{288}Md	207.420
^{289}Md	212.220
^{290}Md	217.920
^{291}Md	222.510
^{292}Md	228.350
^{293}Md	233.190
^{294}Md	239.210
^{295}Md	244.230
^{296}Md	250.410
^{297}Md	255.610
^{298}Md	261.850
^{299}Md	267.120
^{300}Md	273.450
^{301}Md	278.830
^{302}Md	285.330
^{303}Md	291.000
^{304}Md	297.750
^{305}Md	303.720
^{306}Md	310.980
^{307}Md	317.030
^{308}Md	324.220
^{309}Md	330.560
^{310}Md	337.890
^{311}Md	344.310
^{312}Md	351.660
^{313}Md	358.430
^{314}Md	365.890
^{315}Md	372.470
^{316}Md	380.200
^{317}Md	387.000
^{318}Md	394.600
^{319}Md	401.710
^{320}Md	409.420
^{321}Md	416.430
^{322}Md	424.470
^{323}Md	431.850
^{324}Md	440.170

Isotope	Mass Excess
^{325}Md	447.750
^{326}Md	456.290
^{327}Md	464.030
^{328}Md	475.540
^{329}Md	482.300
^{330}Md	490.730
^{331}Md	498.430
^{332}Md	507.280
^{333}Md	515.090
^{334}Md	523.880
^{232}No	93.030
^{233}No	91.630
^{234}No	89.120
^{235}No	88.470
^{236}No	86.220
^{237}No	85.890
^{238}No	83.980
^{239}No	84.030
^{240}No	82.290
^{241}No	82.430
^{242}No	80.980
^{243}No	81.370
^{244}No	80.130
^{245}No	80.760
^{246}No	79.950
^{247}No	80.860
^{248}No	80.080
^{249}No	81.210
^{250}No	80.930
^{251}No	82.300
^{252}No	82.200
^{253}No	83.840
^{254}No	84.050
^{255}No	86.550
^{256}No	87.420
^{257}No	90.030
^{258}No	91.440
^{259}No	94.050
^{260}No	95.320
^{261}No	98.170
^{262}No	99.520
^{263}No	102.450
^{264}No	104.040
^{265}No	107.450
^{266}No	109.740
^{267}No	113.740
^{268}No	116.210
^{269}No	120.350
^{270}No	123.200
^{271}No	127.180
^{272}No	129.920
^{273}No	134.410
^{274}No	137.140
^{275}No	141.390
^{276}No	144.330
^{277}No	148.660
^{278}No	152.010
^{279}No	156.660
^{280}No	160.090
^{281}No	165.020
^{282}No	168.690
^{283}No	173.810
^{284}No	177.830
^{285}No	183.220
^{286}No	187.620
^{287}No	193.550
^{288}No	198.160
^{289}No	204.220
^{290}No	210.660
^{291}No	214.690
^{292}No	218.980
^{293}No	224.810
^{294}No	229.320
^{295}No	235.320
^{296}No	240.050

Isotope	Mass Excess
^{297}No	246.220
^{298}No	251.080
^{299}No	257.290
^{300}No	262.260
^{301}No	268.560
^{302}No	273.640
^{303}No	280.110
^{304}No	285.500
^{305}No	292.280
^{306}No	297.950
^{307}No	305.180
^{308}No	311.220
^{309}No	318.430
^{310}No	324.490
^{311}No	331.830
^{312}No	337.970
^{313}No	345.360
^{314}No	351.550
^{315}No	358.990
^{316}No	365.250
^{317}No	372.930
^{318}No	379.380
^{319}No	386.990
^{320}No	393.470
^{321}No	401.440
^{322}No	407.850
^{323}No	416.100
^{324}No	423.040
^{325}No	431.380
^{326}No	438.700
^{327}No	447.150
^{328}No	454.590
^{329}No	465.940
^{330}No	472.460
^{331}No	480.940
^{332}No	488.310
^{333}No	497.200
^{334}No	504.800
^{335}No	513.560
^{336}No	521.310
^{337}No	530.110
^{338}No	537.990
^{235}Lr	98.570
^{236}Lr	97.540
^{237}Lr	95.240
^{238}Lr	94.540
^{239}Lr	92.550
^{240}Lr	92.130
^{241}Lr	90.480
^{242}Lr	90.330
^{243}Lr	88.870
^{244}Lr	88.860
^{245}Lr	87.620
^{246}Lr	87.890
^{247}Lr	87.010
^{248}Lr	87.550
^{249}Lr	86.740
^{250}Lr	87.460
^{251}Lr	87.090
^{252}Lr	88.090
^{253}Lr	87.890
^{254}Lr	89.150
^{255}Lr	89.300
^{256}Lr	91.420
^{257}Lr	92.200
^{258}Lr	94.420
^{259}Lr	95.710
^{260}Lr	97.960
^{261}Lr	99.160
^{262}Lr	101.640
^{263}Lr	102.910
^{264}Lr	105.510
^{265}Lr	107.040
^{266}Lr	110.050
^{267}Lr	112.320

Isotope	Mass Excess
^{268}Lr	115.990
^{269}Lr	118.500
^{270}Lr	122.390
^{271}Lr	125.240
^{272}Lr	128.860
^{273}Lr	131.540
^{274}Lr	135.620
^{275}Lr	138.380
^{276}Lr	142.500
^{277}Lr	145.430
^{278}Lr	149.450
^{279}Lr	152.790
^{280}Lr	157.220
^{281}Lr	160.620
^{282}Lr	165.250
^{283}Lr	168.920
^{284}Lr	173.730
^{285}Lr	177.760
^{286}Lr	182.840
^{287}Lr	187.130
^{288}Lr	192.730
^{289}Lr	197.310
^{290}Lr	204.670
^{291}Lr	209.630
^{292}Lr	213.350
^{293}Lr	217.600
^{294}Lr	223.110
^{295}Lr	227.620
^{296}Lr	233.330
^{297}Lr	238.050
^{298}Lr	243.850
^{299}Lr	248.690
^{300}Lr	254.660
^{301}Lr	259.500
^{302}Lr	265.550
^{303}Lr	270.530
^{304}Lr	276.710
^{305}Lr	282.000
^{306}Lr	288.490
^{307}Lr	294.230
^{308}Lr	301.140
^{309}Lr	307.030
^{310}Lr	314.000
^{311}Lr	319.990
^{312}Lr	327.110
^{313}Lr	333.160
^{314}Lr	340.360
^{315}Lr	346.620
^{316}Lr	353.820
^{317}Lr	360.040
^{318}Lr	367.420
^{319}Lr	373.820
^{320}Lr	381.120
^{321}Lr	387.580
^{322}Lr	394.990
^{323}Lr	401.680
^{324}Lr	409.410
^{325}Lr	416.540
^{326}Lr	424.530
^{327}Lr	431.850
^{328}Lr	440.010
^{329}Lr	447.450
^{330}Lr	458.620
^{331}Lr	465.160
^{332}Lr	473.350
^{333}Lr	480.740
^{334}Lr	489.330
^{335}Lr	496.950
^{336}Lr	505.500
^{337}Lr	513.130
^{338}Lr	521.700
^{339}Lr	529.590
^{238}Rf	102.930
^{239}Rf	102.090
^{240}Rf	99.850

Isotope	Mass Excess
^{241}Rf	99.410
^{242}Rf	97.470
^{243}Rf	97.320
^{244}Rf	95.460
^{245}Rf	95.450
^{246}Rf	93.830
^{247}Rf	94.090
^{248}Rf	92.810
^{249}Rf	93.310
^{250}Rf	92.120
^{251}Rf	92.810
^{252}Rf	92.050
^{253}Rf	92.960
^{254}Rf	92.390
^{255}Rf	93.460
^{256}Rf	93.380
^{257}Rf	95.370
^{258}Rf	95.800
^{259}Rf	97.950
^{260}Rf	98.810
^{261}Rf	100.980
^{262}Rf	101.790
^{263}Rf	104.070
^{264}Rf	105.070
^{265}Rf	107.590
^{266}Rf	108.680
^{267}Rf	111.710
^{268}Rf	113.620
^{269}Rf	117.260
^{270}Rf	119.450
^{271}Rf	123.330
^{272}Rf	125.860
^{273}Rf	129.440
^{274}Rf	131.810
^{275}Rf	135.980
^{276}Rf	138.330
^{277}Rf	142.210
^{278}Rf	144.780
^{279}Rf	148.810
^{280}Rf	151.810
^{281}Rf	156.350
^{282}Rf	159.410
^{283}Rf	163.960
^{284}Rf	167.400
^{285}Rf	172.140
^{286}Rf	175.800
^{287}Rf	180.880
^{288}Rf	184.930
^{289}Rf	190.590
^{290}Rf	195.490
^{291}Rf	202.050
^{292}Rf	205.130
^{293}Rf	211.010
^{294}Rf	214.920
^{295}Rf	220.410
^{296}Rf	224.610
^{297}Rf	230.300
^{298}Rf	234.650
^{299}Rf	240.490
^{300}Rf	245.010
^{301}Rf	250.860
^{302}Rf	255.490
^{303}Rf	261.480
^{304}Rf	266.140
^{305}Rf	272.340
^{306}Rf	277.330
^{307}Rf	283.850
^{308}Rf	289.290
^{309}Rf	296.060
^{310}Rf	301.660
^{311}Rf	308.620
^{312}Rf	314.350
^{313}Rf	321.370
^{314}Rf	327.180
^{315}Rf	334.300

Isotope	Mass Excess
^{316}Rf	340.260
^{317}Rf	347.390
^{318}Rf	353.530
^{319}Rf	360.740
^{320}Rf	366.960
^{321}Rf	374.250
^{322}Rf	380.420
^{323}Rf	387.810
^{324}Rf	394.190
^{325}Rf	401.910
^{326}Rf	408.720
^{327}Rf	416.740
^{328}Rf	423.760
^{329}Rf	431.920
^{330}Rf	438.980
^{331}Rf	449.820
^{332}Rf	456.050
^{333}Rf	464.270
^{334}Rf	471.410
^{335}Rf	480.010
^{336}Rf	487.400
^{337}Rf	495.910
^{338}Rf	503.400
^{339}Rf	511.990
^{241}Ha	109.270
^{242}Ha	108.410
^{243}Ha	106.450
^{244}Ha	105.950
^{245}Ha	104.080
^{246}Ha	103.700
^{247}Ha	102.060
^{248}Ha	101.910
^{249}Ha	100.600
^{250}Ha	100.720
^{251}Ha	99.500
^{252}Ha	99.800
^{253}Ha	98.940
^{254}Ha	99.540
^{255}Ha	98.830
^{256}Ha	99.550
^{257}Ha	99.400
^{258}Ha	100.970
^{259}Ha	101.340
^{260}Ha	103.070
^{261}Ha	103.850
^{262}Ha	105.660
^{263}Ha	106.410
^{264}Ha	108.330
^{265}Ha	109.160
^{266}Ha	111.420
^{267}Ha	112.420
^{268}Ha	115.120
^{269}Ha	117.040
^{270}Ha	120.320
^{271}Ha	122.530
^{272}Ha	126.050
^{273}Ha	128.680
^{274}Ha	131.940
^{275}Ha	134.260
^{276}Ha	137.950
^{277}Ha	140.460
^{278}Ha	144.030
^{279}Ha	146.570
^{280}Ha	150.270
^{281}Ha	153.260
^{282}Ha	157.620
^{283}Ha	160.680
^{284}Ha	164.880
^{285}Ha	168.170
^{286}Ha	172.800
^{287}Ha	176.460
^{288}Ha	181.210
^{289}Ha	185.230
^{290}Ha	191.280
^{291}Ha	195.510

Isotope	Mass Excess
^{292}Ha	200.210
^{293}Ha	204.690
^{294}Ha	210.480
^{295}Ha	214.370
^{296}Ha	219.550
^{297}Ha	223.720
^{298}Ha	229.080
^{299}Ha	233.430
^{300}Ha	238.940
^{301}Ha	243.410
^{302}Ha	248.970
^{303}Ha	253.530
^{304}Ha	259.250
^{305}Ha	263.910
^{306}Ha	269.770
^{307}Ha	274.820
^{308}Ha	281.070
^{309}Ha	286.380
^{310}Ha	292.850
^{311}Ha	298.470
^{312}Ha	305.100
^{313}Ha	310.760
^{314}Ha	317.450
^{315}Ha	323.200
^{316}Ha	329.930
^{317}Ha	335.910
^{318}Ha	342.770
^{319}Ha	348.710
^{320}Ha	355.710
^{321}Ha	361.770
^{322}Ha	368.890
^{323}Ha	375.300
^{324}Ha	382.420
^{325}Ha	388.770
^{326}Ha	396.200
^{327}Ha	402.980
^{328}Ha	410.770
^{329}Ha	417.670
^{330}Ha	425.540
^{331}Ha	432.660
^{332}Ha	443.150
^{333}Ha	449.460
^{334}Ha	457.400
^{335}Ha	464.560
^{336}Ha	472.890
^{337}Ha	480.300
^{338}Ha	488.520
^{339}Ha	496.020
^{244}Sg	113.980
^{245}Sg	113.660
^{246}Sg	111.440
^{247}Sg	111.010
^{248}Sg	109.020
^{249}Sg	108.870
^{250}Sg	107.160
^{251}Sg	107.260
^{252}Sg	105.640
^{253}Sg	105.890
^{254}Sg	104.660
^{255}Sg	105.120
^{256}Sg	104.000
^{257}Sg	104.790
^{258}Sg	104.270
^{259}Sg	105.670
^{260}Sg	105.730
^{261}Sg	107.430
^{262}Sg	107.830
^{263}Sg	109.570
^{264}Sg	109.940
^{265}Sg	111.780
^{266}Sg	112.240
^{267}Sg	114.350
^{268}Sg	115.090
^{269}Sg	117.740
^{270}Sg	119.260

Isotope	Mass Excess
^{271}Sg	122.540
^{272}Sg	124.430
^{273}Sg	127.950
^{274}Sg	130.190
^{275}Sg	133.430
^{276}Sg	135.480
^{277}Sg	139.300
^{278}Sg	141.240
^{279}Sg	144.620
^{280}Sg	146.790
^{281}Sg	150.420
^{282}Sg	153.100
^{283}Sg	157.460
^{284}Sg	160.100
^{285}Sg	164.270
^{286}Sg	167.380
^{287}Sg	171.800
^{288}Sg	175.160
^{289}Sg	179.890
^{290}Sg	183.680
^{291}Sg	189.660
^{292}Sg	193.130
^{293}Sg	198.590
^{294}Sg	202.810
^{295}Sg	208.300
^{296}Sg	212.560
^{297}Sg	217.780
^{298}Sg	221.590
^{299}Sg	226.940
^{300}Sg	230.980
^{301}Sg	236.450
^{302}Sg	240.590
^{303}Sg	246.150
^{304}Sg	250.390
^{305}Sg	256.050
^{306}Sg	260.400
^{307}Sg	266.300
^{308}Sg	270.960
^{309}Sg	277.220
^{310}Sg	282.210
^{311}Sg	288.700
^{312}Sg	293.960
^{313}Sg	300.550
^{314}Sg	305.910
^{315}Sg	312.520
^{316}Sg	317.940
^{317}Sg	324.670
^{318}Sg	330.170
^{319}Sg	337.080
^{320}Sg	342.900
^{321}Sg	350.050
^{322}Sg	355.940
^{323}Sg	363.310
^{324}Sg	368.970
^{325}Sg	376.010
^{326}Sg	382.210
^{327}Sg	389.640
^{328}Sg	396.260
^{329}Sg	403.860
^{330}Sg	410.530
^{331}Sg	418.390
^{332}Sg	427.960
^{333}Sg	435.120
^{334}Sg	441.050
^{335}Sg	449.060
^{336}Sg	455.950
^{337}Sg	464.210
^{338}Sg	471.510
^{339}Sg	479.820
^{247}Ns	120.610
^{248}Ns	120.060
^{249}Ns	118.010
^{250}Ns	117.500
^{251}Ns	115.610
^{252}Ns	115.320

Isotope	Mass Excess
^{253}Ns	113.790
^{254}Ns	113.690
^{255}Ns	112.340
^{256}Ns	112.510
^{257}Ns	111.380
^{258}Ns	111.770
^{259}Ns	111.130
^{260}Ns	112.240
^{261}Ns	112.150
^{262}Ns	113.450
^{263}Ns	113.680
^{264}Ns	115.140
^{265}Ns	115.430
^{266}Ns	116.900
^{267}Ns	117.300
^{268}Ns	119.040
^{269}Ns	119.710
^{270}Ns	122.030
^{271}Ns	123.500
^{272}Ns	126.430
^{273}Ns	128.300
^{274}Ns	131.450
^{275}Ns	133.760
^{276}Ns	136.680
^{277}Ns	138.630
^{278}Ns	142.200
^{279}Ns	144.120
^{280}Ns	147.170
^{281}Ns	149.340
^{282}Ns	152.630
^{283}Ns	155.310
^{284}Ns	159.150
^{285}Ns	162.040
^{286}Ns	165.850
^{287}Ns	168.970
^{288}Ns	173.060
^{289}Ns	176.390
^{290}Ns	180.820
^{291}Ns	184.590
^{292}Ns	189.790
^{293}Ns	193.760
^{294}Ns	198.930
^{295}Ns	203.150
^{296}Ns	208.350
^{297}Ns	212.920
^{298}Ns	217.760
^{299}Ns	221.580
^{300}Ns	226.610
^{301}Ns	230.660
^{302}Ns	235.800
^{303}Ns	239.940
^{304}Ns	245.180
^{305}Ns	249.380
^{306}Ns	254.750
^{307}Ns	259.110
^{308}Ns	264.670
^{309}Ns	269.340
^{310}Ns	275.310
^{311}Ns	280.290
^{312}Ns	286.450
^{313}Ns	291.700
^{314}Ns	297.950
^{315}Ns	303.270
^{316}Ns	309.560
^{317}Ns	314.950
^{318}Ns	321.300
^{319}Ns	326.840
^{320}Ns	333.450
^{321}Ns	339.300
^{322}Ns	346.240
^{323}Ns	352.130
^{324}Ns	359.210
^{325}Ns	365.160
^{326}Ns	371.710
^{327}Ns	377.880

Isotope	Mass Excess
^{328}Ns	384.990
^{329}Ns	391.530
^{330}Ns	398.870
^{331}Ns	405.460
^{332}Ns	412.990
^{333}Ns	422.260
^{334}Ns	429.140
^{335}Ns	435.050
^{336}Ns	442.800
^{337}Ns	449.710
^{338}Ns	457.710
^{339}Ns	465.090
^{250}Hs	125.820
^{251}Hs	125.310
^{252}Hs	123.160
^{253}Hs	122.850
^{254}Hs	120.830
^{255}Hs	120.710
^{256}Hs	119.030
^{257}Hs	119.170
^{258}Hs	117.670
^{259}Hs	118.050
^{260}Hs	117.070
^{261}Hs	118.050
^{262}Hs	117.570
^{263}Hs	118.800
^{264}Hs	118.730
^{265}Hs	120.020
^{266}Hs	119.940
^{267}Hs	121.340
^{268}Hs	121.360
^{269}Hs	123.050
^{270}Hs	123.360
^{271}Hs	125.600
^{272}Hs	126.720
^{273}Hs	129.590
^{274}Hs	131.150
^{275}Hs	134.360
^{276}Hs	136.180
^{277}Hs	139.120
^{278}Hs	141.140
^{279}Hs	143.950
^{280}Hs	145.470
^{281}Hs	148.470
^{282}Hs	150.340
^{283}Hs	153.610
^{284}Hs	155.900
^{285}Hs	159.680
^{286}Hs	162.270
^{287}Hs	165.990
^{288}Hs	168.740
^{289}Hs	172.790
^{290}Hs	175.890
^{291}Hs	180.320
^{292}Hs	183.790
^{293}Hs	189.200
^{294}Hs	192.910
^{295}Hs	198.180
^{296}Hs	202.130
^{297}Hs	207.410
^{298}Hs	212.970
^{299}Hs	216.760
^{300}Hs	220.320
^{301}Hs	225.360
^{302}Hs	229.040
^{303}Hs	234.180
^{304}Hs	238.010
^{305}Hs	243.250
^{306}Hs	247.170
^{307}Hs	252.530
^{308}Hs	256.610
^{309}Hs	262.170
^{310}Hs	266.550
^{311}Hs	272.510
^{312}Hs	277.200

Isotope	Mass Excess
^{313}Hs	283.350
^{314}Hs	288.300
^{315}Hs	294.540
^{316}Hs	299.560
^{317}Hs	305.830
^{318}Hs	310.900
^{319}Hs	317.260
^{320}Hs	322.510
^{321}Hs	329.090
^{322}Hs	334.680
^{323}Hs	341.610
^{324}Hs	347.460
^{325}Hs	354.320
^{326}Hs	360.050
^{327}Hs	366.550
^{328}Hs	375.460
^{329}Hs	382.710
^{330}Hs	388.520
^{331}Hs	395.620
^{332}Hs	399.430
^{333}Hs	409.430
^{334}Hs	414.970
^{335}Hs	421.830
^{336}Hs	427.460
^{337}Hs	435.210
^{338}Hs	441.880
^{339}Hs	449.890
^{253}Mt	132.660
^{254}Mt	131.990
^{255}Mt	130.050
^{256}Mt	129.610
^{257}Mt	127.750
^{258}Mt	127.550
^{259}Mt	126.010
^{260}Mt	126.040
^{261}Mt	125.020
^{262}Mt	125.820
^{263}Mt	125.230
^{264}Mt	126.030
^{265}Mt	125.720
^{266}Mt	126.650
^{267}Mt	126.590
^{268}Mt	127.600
^{269}Mt	127.480
^{270}Mt	128.850
^{271}Mt	129.030
^{272}Mt	130.890
^{273}Mt	131.960
^{274}Mt	134.510
^{275}Mt	135.990
^{276}Mt	138.780
^{277}Mt	140.570
^{278}Mt	143.250
^{279}Mt	145.120
^{280}Mt	147.550
^{281}Mt	149.140
^{282}Mt	151.850
^{283}Mt	153.630
^{284}Mt	156.600
^{285}Mt	158.940
^{286}Mt	162.420
^{287}Mt	164.850
^{288}Mt	168.180
^{289}Mt	170.950
^{290}Mt	174.680
^{291}Mt	177.760
^{292}Mt	181.880
^{293}Mt	185.340
^{294}Mt	190.490
^{295}Mt	194.190
^{296}Mt	199.240
^{297}Mt	203.210
^{298}Mt	209.470
^{299}Mt	212.270
^{300}Mt	217.330

Isotope	Mass Excess
^{301}Mt	221.100
^{302}Mt	225.840
^{303}Mt	229.520
^{304}Mt	234.360
^{305}Mt	238.200
^{306}Mt	243.170
^{307}Mt	247.080
^{308}Mt	252.150
^{309}Mt	256.280
^{310}Mt	261.450
^{311}Mt	265.950
^{312}Mt	271.610
^{313}Mt	276.300
^{314}Mt	282.130
^{315}Mt	287.050
^{316}Mt	292.970
^{317}Mt	297.970
^{318}Mt	303.910
^{319}Mt	308.970
^{320}Mt	315.030
^{321}Mt	320.270
^{322}Mt	326.590
^{323}Mt	332.190
^{324}Mt	338.820
^{325}Mt	344.470
^{326}Mt	351.040
^{327}Mt	356.800
^{328}Mt	365.920
^{329}Mt	371.830
^{330}Mt	378.820
^{331}Mt	384.620
^{332}Mt	391.480
^{333}Mt	397.420
^{334}Mt	404.440
^{335}Mt	409.920
^{336}Mt	416.500
^{337}Mt	422.110
^{338}Mt	429.600
^{339}Mt	436.290
^{256}110	137.920
^{257}110	137.460
^{258}110	135.360
^{259}110	135.080
^{260}110	133.300
^{261}110	133.340
^{262}110	131.990
^{263}110	132.570
^{264}110	131.590
^{265}110	132.370
^{266}110	131.780
^{267}110	132.640
^{268}110	132.100
^{269}110	133.080
^{270}110	132.680
^{271}110	133.940
^{272}110	133.820
^{273}110	135.570
^{274}110	136.290
^{275}110	138.760
^{276}110	139.870
^{277}110	142.710
^{278}110	143.980
^{279}110	146.470
^{280}110	147.650
^{281}110	150.090
^{282}110	151.320
^{283}110	153.990
^{284}110	155.460
^{285}110	158.400
^{286}110	160.370
^{287}110	163.870
^{288}110	165.680
^{289}110	169.050
^{290}110	171.490
^{291}110	175.210

Isotope	Mass Excess
^{292}110	177.990
^{293}110	182.110
^{294}110	185.260
^{295}110	190.540
^{296}110	193.850
^{297}110	199.170
^{298}110	203.070
^{299}110	208.040
^{300}110	212.490
^{301}110	216.970
^{302}110	220.780
^{303}110	225.280
^{304}110	228.730
^{305}110	233.580
^{306}110	237.130
^{307}110	242.070
^{308}110	245.720
^{309}110	250.750
^{310}110	254.550
^{311}110	259.810
^{312}110	264.000
^{313}110	269.650
^{314}110	274.050
^{315}110	279.890
^{316}110	284.520
^{317}110	290.460
^{318}110	295.140
^{319}110	301.110
^{320}110	305.890
^{321}110	311.950
^{322}110	316.930
^{323}110	323.240
^{324}110	328.550
^{325}110	335.180
^{326}110	340.470
^{327}110	347.140
^{328}110	354.300
^{329}110	361.180
^{330}110	366.730
^{331}110	373.400
^{332}110	378.910
^{333}110	385.790
^{334}110	391.610
^{335}110	398.290
^{336}110	403.390
^{337}110	409.960
^{338}110	415.280
^{339}110	422.790
^{259}111	144.950
^{260}111	144.390
^{261}111	142.550
^{262}111	142.230
^{263}111	140.870
^{264}111	141.110
^{265}111	140.110
^{266}111	140.510
^{267}111	139.800
^{268}111	140.340
^{269}111	139.770
^{270}111	140.420
^{271}111	140.020
^{272}111	140.930
^{273}111	140.790
^{274}111	142.140
^{275}111	142.770
^{276}111	144.840
^{277}111	145.890
^{278}111	148.320
^{279}111	149.340
^{280}111	151.340
^{281}111	152.360
^{282}111	154.460
^{283}111	155.640
^{284}111	158.000
^{285}111	159.440

Isotope	Mass Excess
^{286}111	162.050
^{287}111	163.940
^{288}111	167.060
^{289}111	168.780
^{290}111	171.870
^{291}111	174.300
^{292}111	177.730
^{293}111	180.490
^{294}111	184.340
^{295}111	187.460
^{296}111	192.390
^{297}111	195.710
^{298}111	201.000
^{299}111	204.520
^{300}111	209.950
^{301}111	213.300
^{302}111	218.240
^{303}111	222.080
^{304}111	227.070
^{305}111	229.970
^{306}111	234.550
^{307}111	238.090
^{308}111	242.720
^{309}111	246.370
^{310}111	251.160
^{311}111	254.950
^{312}111	259.950
^{313}111	264.150
^{314}111	269.520
^{315}111	273.910
^{316}111	279.460
^{317}111	284.120
^{318}111	289.770
^{319}111	294.500
^{320}111	300.230
^{321}111	305.010
^{322}111	310.830
^{323}111	315.770
^{324}111	321.850
^{325}111	327.300
^{326}111	333.510
^{327}111	338.760
^{328}111	345.420
^{329}111	351.190
^{330}111	357.800
^{331}111	363.330
^{332}111	369.900
^{333}111	375.390
^{334}111	382.110
^{335}111	387.610
^{336}111	394.090
^{337}111	399.020
^{338}111	405.300
^{339}111	410.600
^{262}112	150.530
^{263}112	150.230
^{264}112	148.550
^{265}112	148.720
^{266}112	147.390
^{267}112	147.760
^{268}112	146.700
^{269}112	147.220
^{270}112	146.300
^{271}112	146.900
^{272}112	146.130
^{273}112	147.010
^{274}112	146.500
^{275}112	147.860
^{276}112	148.090
^{277}112	150.080
^{278}112	151.010
^{279}112	153.000
^{280}112	153.420
^{281}112	155.270
^{282}112	155.820

Isotope	Mass Excess
^{283}112	157.910
^{284}112	158.770
^{285}112	161.110
^{286}112	162.230
^{287}112	164.820
^{288}112	166.230
^{289}112	169.030
^{290}112	170.440
^{291}112	173.530
^{292}112	175.610
^{293}112	178.990
^{294}112	181.440
^{295}112	185.290
^{296}112	188.110
^{297}112	192.960
^{298}112	196.030
^{299}112	201.260
^{300}112	204.600
^{301}112	209.840
^{302}112	213.370
^{303}112	218.490
^{304}112	222.070
^{305}112	227.190
^{306}112	231.380
^{307}112	234.530
^{308}112	237.730
^{309}112	242.400
^{310}112	245.790
^{311}112	250.520
^{312}112	254.020
^{313}112	258.980
^{314}112	262.830
^{315}112	268.230
^{316}112	272.500
^{317}112	278.050
^{318}112	282.410
^{319}112	288.050
^{320}112	292.490
^{321}112	298.190
^{322}112	302.710
^{323}112	308.450
^{324}112	313.740
^{325}112	319.700
^{326}112	324.390
^{327}112	330.530
^{328}112	335.520
^{329}112	341.870
^{330}112	347.100
^{331}112	353.800
^{332}112	358.970
^{333}112	365.510
^{334}112	370.700
^{335}112	377.340
^{336}112	382.320
^{337}112	388.680
^{338}112	393.270
^{339}112	399.540
^{266}113	158.260
^{267}113	156.830
^{268}113	156.800
^{269}113	155.670
^{270}113	155.830
^{271}113	154.840
^{272}113	155.110
^{273}113	154.300
^{274}113	154.820
^{275}113	154.340
^{276}113	155.250
^{277}113	155.370
^{278}113	157.120
^{279}113	157.820
^{280}113	158.730
^{281}113	159.010
^{282}113	160.520
^{283}113	161.120

Isotope	Mass Excess
^{284}113	162.910
^{285}113	163.760
^{286}113	165.790
^{287}113	166.890
^{288}113	169.180
^{289}113	170.320
^{290}113	172.920
^{291}113	174.270
^{292}113	177.070
^{293}113	179.200
^{294}113	182.330
^{295}113	184.810
^{296}113	188.350
^{297}113	191.160
^{298}113	195.880
^{299}113	198.750
^{300}113	203.720
^{301}113	206.990
^{302}113	211.920
^{303}113	215.440
^{304}113	220.330
^{305}113	223.920
^{306}113	229.200
^{307}113	232.450
^{308}113	236.010
^{309}113	239.480
^{310}113	243.870
^{311}113	247.220
^{312}113	251.680
^{313}113	255.200
^{314}113	259.910
^{315}113	263.660
^{316}113	268.850
^{317}113	273.010
^{318}113	278.440
^{319}113	282.810
^{320}113	288.170
^{321}113	292.610
^{322}113	298.060
^{323}113	302.590
^{324}113	308.020
^{325}113	313.260
^{326}113	318.960
^{327}113	323.520
^{328}113	329.290
^{329}113	334.180
^{330}113	340.340
^{331}113	345.440
^{332}113	351.690
^{333}113	356.820
^{334}113	362.930
^{335}113	368.060
^{336}113	374.190
^{337}113	379.170
^{338}113	385.190
^{339}113	389.800
^{269}114	164.740
^{270}114	163.230
^{271}114	163.380
^{272}114	162.060
^{273}114	162.340
^{274}114	161.210
^{275}114	161.780
^{276}114	160.890
^{277}114	161.760
^{278}114	161.570
^{279}114	162.330
^{280}114	162.120
^{281}114	163.440
^{282}114	163.440
^{283}114	165.000
^{284}114	165.280
^{285}114	167.040
^{286}114	167.640
^{287}114	169.640
^{288}114	170.360
^{289}114	172.400
^{290}114	173.150
^{291}114	175.690
^{292}114	176.910
^{293}114	179.700
^{294}114	181.480
^{295}114	184.590
^{296}114	186.720
^{297}114	190.280
^{298}114	192.780
^{299}114	197.500
^{300}114	200.050
^{301}114	205.020
^{302}114	207.960
^{303}114	213.000
^{304}114	216.100
^{305}114	221.210
^{306}114	224.400
^{307}114	229.580
^{308}114	232.840
^{309}114	238.090
^{310}114	241.420
^{311}114	244.120
^{312}114	247.230
^{313}114	251.750
^{314}114	254.940
^{315}114	259.650
^{316}114	263.150
^{317}114	268.250
^{318}114	272.230
^{319}114	277.550
^{320}114	281.800
^{321}114	287.180
^{322}114	291.370
^{323}114	296.830
^{324}114	301.080
^{325}114	306.470
^{326}114	311.260
^{327}114	316.940
^{328}114	321.210
^{329}114	326.980
^{330}114	331.710
^{331}114	337.790
^{332}114	342.540
^{333}114	348.760
^{334}114	353.480
^{335}114	359.620
^{336}114	364.230
^{337}114	370.210
^{338}114	374.660
^{339}114	380.640
^{272}115	172.650
^{273}115	171.290
^{274}115	171.280
^{275}115	170.110
^{276}115	170.290
^{277}115	169.370
^{278}115	169.910
^{279}115	169.040
^{280}115	169.680
^{281}115	169.370
^{282}115	170.340
^{283}115	170.320
^{284}115	171.490
^{285}115	171.750
^{286}115	173.190
^{287}115	173.790
^{288}115	175.460
^{289}115	176.210
^{290}115	178.130
^{291}115	178.970
^{292}115	181.140
^{293}115	182.220
^{294}115	184.580
^{295}115	186.340
^{296}115	189.180
^{297}115	191.360
^{298}115	194.610
^{299}115	197.100
^{300}115	201.500
^{301}115	204.030
^{302}115	208.670
^{303}115	211.600
^{304}115	216.310
^{305}115	219.400
^{306}115	224.190
^{307}115	227.370
^{308}115	232.120
^{309}115	235.430
^{310}115	238.650
^{311}115	241.950
^{312}115	246.130
^{313}115	249.270
^{314}115	253.550
^{315}115	256.790
^{316}115	261.190
^{317}115	264.690
^{318}115	269.520
^{319}115	273.470
^{320}115	278.540
^{321}115	282.790
^{322}115	287.910
^{323}115	292.280
^{324}115	297.330
^{325}115	301.610
^{326}115	306.920
^{327}115	311.190
^{328}115	316.700
^{329}115	321.030
^{330}115	326.640
^{331}115	331.110
^{332}115	336.880
^{333}115	341.620
^{334}115	347.420
^{335}115	352.110
^{336}115	357.950
^{337}115	362.530
^{338}115	368.150
^{339}115	372.790
^{275}116	179.260
^{276}116	177.770
^{277}116	177.930
^{278}116	176.670
^{279}116	177.200
^{280}116	175.740
^{281}116	176.350
^{282}116	175.650
^{283}116	176.560
^{284}116	176.150
^{285}116	177.320
^{286}116	177.280
^{287}116	178.720
^{288}116	179.020
^{289}116	180.730
^{290}116	181.180
^{291}116	183.180
^{292}116	183.610
^{293}116	185.760
^{294}116	186.550
^{295}116	188.960
^{296}116	190.440
^{297}116	193.290
^{298}116	195.130
^{299}116	198.370
^{300}116	200.550
^{301}116	204.720
^{302}116	207.150
^{303}116	211.760
^{304}116	214.390
^{305}116	219.060
^{306}116	221.840
^{307}116	226.540
^{308}116	229.540
^{309}116	234.110
^{310}116	237.230
^{311}116	240.270
^{312}116	243.070
^{313}116	247.460
^{314}116	249.950
^{315}116	254.190
^{316}116	257.190
^{317}116	261.610
^{318}116	264.800
^{319}116	269.620
^{320}116	273.280
^{321}116	278.420
^{322}116	282.300
^{323}116	287.540
^{324}116	291.480
^{325}116	296.560
^{326}116	300.580
^{327}116	305.840
^{328}116	310.100
^{329}116	315.500
^{330}116	319.610
^{331}116	325.140
^{332}116	329.510
^{333}116	335.300
^{334}116	339.560
^{335}116	345.300
^{336}116	349.710
^{337}116	355.510
^{338}116	359.950
^{339}116	365.400
^{278}117	187.180
^{279}117	185.550
^{280}117	186.170
^{281}117	184.420
^{282}117	184.650
^{283}117	183.960
^{284}117	184.510
^{285}117	184.080
^{286}117	184.940
^{287}117	184.830
^{288}117	185.930
^{289}117	186.150
^{290}117	187.510
^{291}117	187.940
^{292}117	189.590
^{293}117	190.310
^{294}117	192.230
^{295}117	192.980
^{296}117	194.930
^{297}117	196.390
^{298}117	198.940
^{299}117	200.790
^{300}117	203.740
^{301}117	205.910
^{302}117	209.770
^{303}117	212.170
^{304}117	216.450
^{305}117	219.080
^{306}117	223.470
^{307}117	226.210
^{308}117	230.520
^{309}117	231.880
^{310}117	237.980
^{311}117	240.880
^{312}117	243.450
^{313}117	246.510
^{314}117	250.860
^{315}117	252.640
^{316}117	256.670
^{317}117	259.640
^{318}117	263.830
^{319}117	266.950
^{320}117	271.550
^{321}117	275.220
^{322}117	280.070
^{323}117	283.960
^{324}117	288.920
^{325}117	292.890
^{326}117	297.740
^{327}117	301.800
^{328}117	306.800
^{329}117	310.940
^{330}117	316.090
^{331}117	320.230
^{332}117	325.460
^{333}117	329.770
^{334}117	335.090
^{335}117	339.350
^{336}117	344.800
^{337}117	349.210
^{338}117	354.690
^{339}117	359.120
^{281}118	194.150
^{282}118	192.010
^{283}118	192.330
^{284}118	191.260
^{285}118	191.840
^{286}118	191.120
^{287}118	191.860
^{288}118	191.450
^{289}118	192.500
^{290}118	192.510
^{291}118	193.700
^{292}118	193.810
^{293}118	195.430
^{294}118	195.880
^{295}118	197.790
^{296}118	198.320
^{297}118	200.290
^{298}118	201.480
^{299}118	204.020
^{300}118	205.580
^{301}118	208.540
^{302}118	210.400
^{303}118	214.430
^{304}118	216.310
^{305}118	220.590
^{306}118	222.880
^{307}118	227.140
^{308}118	229.660
^{309}118	233.860
^{310}118	236.660
^{311}118	240.600
^{312}118	243.150
^{313}118	241.270
^{314}118	243.770
^{315}118	247.650
^{316}118	253.910
^{317}118	258.050
^{318}118	260.740
^{319}118	264.900
^{320}118	267.870
^{321}118	272.330
^{322}118	275.710
^{323}118	280.560
^{324}118	284.180
^{325}118	289.120
^{326}118	292.810
^{327}118	297.790
^{328}118	301.590
^{329}118	305.240
^{330}118	309.000
^{331}118	314.230
^{332}118	319.580
^{333}118	324.840
^{334}118	328.920
^{335}118	334.200
^{336}118	338.170
^{337}118	343.600
^{338}118	347.690
^{339}118	353.150
^{284}119	201.620
^{285}119	200.640
^{286}119	200.810
^{287}119	199.830
^{288}119	200.320
^{289}119	200.050
^{290}119	200.730
^{291}119	200.460
^{292}119	201.520
^{293}119	201.460
^{294}119	202.740
^{295}119	203.250
^{296}119	205.090
^{297}119	205.480
^{298}119	207.160
^{299}119	208.200
^{300}119	210.500
^{301}119	212.080
^{302}119	214.740
^{303}119	216.590
^{304}119	220.310
^{305}119	222.180
^{306}119	226.160
^{307}119	228.410
^{308}119	232.310
^{309}119	234.820
^{310}119	238.650
^{311}119	241.120
^{312}119	245.060
^{313}119	247.560
^{314}119	245.070
^{315}119	247.430
^{316}119	251.020
^{317}119	257.080
^{318}119	261.120
^{319}119	263.810
^{320}119	267.770
^{321}119	270.770
^{322}119	274.970
^{323}119	278.360
^{324}119	282.970
^{325}119	286.580
^{326}119	291.220
^{327}119	294.940
^{328}119	299.610
^{329}119	303.390
^{330}119	306.400
^{331}119	310.250
^{332}119	315.210
^{333}119	321.180
^{334}119	326.090
^{335}119	330.080
^{336}119	335.040
^{337}119	338.960
^{338}119	344.060
^{339}119	348.140
^{287}120	208.740
^{288}120	207.610
^{289}120	208.150
^{290}120	207.320
^{291}120	208.200
^{292}120	207.760
^{293}120	208.610
^{294}120	208.230
^{295}120	209.480
^{296}120	209.920
^{297}120	211.390
^{298}120	211.660

Isotope	Mass Excess
$^{299}120$	213.320
$^{300}120$	214.140
$^{301}120$	216.380
$^{302}120$	217.620
$^{303}120$	220.290
$^{304}120$	221.830
$^{305}120$	225.440
$^{306}120$	227.090
$^{307}120$	231.000
$^{308}120$	233.040
$^{309}120$	236.740
$^{310}120$	238.940
$^{311}120$	242.670
$^{312}120$	244.760
$^{313}120$	248.540
$^{314}120$	250.670
$^{315}120$	247.690
$^{316}120$	249.740
$^{317}120$	253.310
$^{318}120$	255.710
$^{319}120$	263.230
$^{320}120$	265.720
$^{321}120$	269.580
$^{322}120$	272.280
$^{323}120$	276.470
$^{324}120$	279.610
$^{325}120$	284.170
$^{326}120$	287.480
$^{327}120$	292.120
$^{328}120$	295.530
$^{329}120$	300.230
$^{330}120$	303.830
$^{331}120$	308.600
$^{332}120$	312.250
$^{333}120$	315.220
$^{334}120$	321.240
$^{335}120$	326.470
$^{336}120$	330.020
$^{337}120$	335.090
$^{338}120$	338.730
$^{339}120$	343.820
$^{290}121$	217.460
$^{291}121$	216.590
$^{292}121$	217.070
$^{293}121$	216.610
$^{294}121$	217.310
$^{295}121$	217.090
$^{296}121$	218.040
$^{297}121$	218.240
$^{298}121$	219.510
$^{299}121$	219.690
$^{300}121$	221.010
$^{301}121$	221.760
$^{302}121$	223.760
$^{303}121$	225.000
$^{304}121$	227.370
$^{305}121$	228.900
$^{306}121$	232.470
$^{307}121$	233.900
$^{308}121$	237.400
$^{309}121$	239.360
$^{310}121$	242.610
$^{311}121$	244.730
$^{312}121$	248.040
$^{313}121$	250.070
$^{314}121$	253.480
$^{315}121$	255.580
$^{316}121$	252.060
$^{317}121$	254.250
$^{318}121$	257.400
$^{319}121$	259.800
$^{320}121$	266.970
$^{321}121$	269.510
$^{322}121$	273.170
$^{323}121$	275.770

Isotope	Mass Excess
$^{324}121$	279.800
$^{325}121$	282.890
$^{326}121$	287.250
$^{327}121$	290.500
$^{328}121$	294.890
$^{329}121$	298.520
$^{330}121$	302.730
$^{331}121$	306.210
$^{332}121$	310.790
$^{333}121$	314.420
$^{334}121$	317.180
$^{335}121$	323.360
$^{336}121$	328.120
$^{337}121$	332.070
$^{338}121$	336.780
$^{339}121$	340.590
$^{294}122$	224.380
$^{295}122$	225.130
$^{296}122$	224.690
$^{297}122$	225.840
$^{298}122$	225.570
$^{299}122$	226.900
$^{300}122$	226.330
$^{301}122$	227.710
$^{302}122$	228.130
$^{303}122$	230.450
$^{304}122$	231.380
$^{305}122$	233.740
$^{306}122$	234.970
$^{307}122$	238.290
$^{308}122$	239.700
$^{309}122$	242.920
$^{310}122$	244.620
$^{311}122$	247.680
$^{312}122$	249.400
$^{313}122$	252.640
$^{314}122$	254.300
$^{315}122$	257.610
$^{316}122$	259.370
$^{317}122$	255.400
$^{318}122$	257.140
$^{319}122$	260.410
$^{320}122$	262.520
$^{321}122$	265.980
$^{322}122$	272.030
$^{323}122$	275.680
$^{324}122$	277.980
$^{325}122$	281.980
$^{326}122$	284.780
$^{327}122$	289.110
$^{328}122$	292.110
$^{329}122$	296.460
$^{330}122$	299.590
$^{331}122$	304.030
$^{332}122$	307.220
$^{333}122$	311.780
$^{334}122$	315.150
$^{335}122$	320.040
$^{336}122$	324.050
$^{337}122$	328.830
$^{338}122$	332.330
$^{339}122$	337.360
$^{297}123$	234.010
$^{298}123$	235.010
$^{299}123$	234.650
$^{300}123$	235.620
$^{301}123$	234.930
$^{302}123$	235.870
$^{303}123$	235.790
$^{304}123$	238.760
$^{305}123$	239.660
$^{306}123$	241.720
$^{307}123$	242.970
$^{308}123$	245.960

Isotope	Mass Excess
$^{309}123$	247.310
$^{310}123$	250.040
$^{311}123$	251.600
$^{312}123$	254.250
$^{313}123$	255.900
$^{314}123$	258.770
$^{315}123$	260.380
$^{316}123$	263.360
$^{317}123$	265.080
$^{318}123$	260.460
$^{319}123$	262.330
$^{320}123$	265.180
$^{321}123$	267.260
$^{322}123$	270.440
$^{323}123$	276.470
$^{324}123$	279.960
$^{325}123$	282.230
$^{326}123$	285.930
$^{327}123$	288.730
$^{328}123$	292.770
$^{329}123$	295.750
$^{330}123$	299.850
$^{331}123$	302.970
$^{332}123$	307.190
$^{333}123$	310.380
$^{334}123$	314.670
$^{335}123$	318.000
$^{336}123$	322.620
$^{337}123$	326.670
$^{338}123$	331.280
$^{339}123$	334.760
$^{300}124$	242.740
$^{301}124$	243.530
$^{302}124$	241.880
$^{303}124$	242.780
$^{304}124$	242.390
$^{305}124$	243.570
$^{306}124$	246.880
$^{307}124$	248.930
$^{308}124$	249.940
$^{309}124$	252.650
$^{310}124$	253.720
$^{311}124$	256.220
$^{312}124$	257.420
$^{313}124$	259.990
$^{314}124$	261.290
$^{315}124$	264.090
$^{316}124$	265.340
$^{317}124$	261.910
$^{318}124$	261.740
$^{319}124$	264.490
$^{320}124$	265.930
$^{321}124$	268.870
$^{322}124$	270.650
$^{323}124$	273.800
$^{324}124$	275.800
$^{325}124$	283.210
$^{326}124$	285.280
$^{327}124$	288.880
$^{328}124$	291.400
$^{329}124$	295.400
$^{330}124$	298.090
$^{331}124$	302.130
$^{332}124$	304.980
$^{333}124$	309.170
$^{334}124$	312.070
$^{335}124$	316.350
$^{336}124$	319.380
$^{337}124$	324.000
$^{338}124$	326.860
$^{339}124$	332.590
$^{303}125$	250.560
$^{304}125$	251.220
$^{305}125$	250.730

Isotope	Mass Excess
$^{306}125$	255.510
$^{307}125$	256.120
$^{308}125$	257.950
$^{309}125$	258.950
$^{310}125$	261.210
$^{311}125$	262.370
$^{312}125$	264.230
$^{313}125$	265.280
$^{314}125$	267.490
$^{315}125$	268.730
$^{316}125$	271.110
$^{317}125$	272.400
$^{318}125$	267.900
$^{319}125$	267.790
$^{320}125$	270.260
$^{321}125$	271.780
$^{322}125$	274.300
$^{323}125$	276.060
$^{324}125$	278.920
$^{325}125$	280.900
$^{326}125$	288.190
$^{327}125$	286.410
$^{328}125$	293.540
$^{329}125$	296.050
$^{330}125$	299.760
$^{331}125$	302.360
$^{332}125$	306.200
$^{333}125$	308.940
$^{334}125$	312.950
$^{335}125$	315.870
$^{336}125$	319.890
$^{337}125$	322.900
$^{338}125$	327.210
$^{339}125$	330.260
$^{306}126$	257.990
$^{307}126$	258.830
$^{308}126$	264.130
$^{309}126$	265.900
$^{310}126$	266.310
$^{311}126$	268.430
$^{312}126$	268.890
$^{313}126$	271.040
$^{314}126$	271.830
$^{315}126$	273.970
$^{316}126$	274.880
$^{317}126$	277.170
$^{318}126$	278.170
$^{319}126$	272.960
$^{320}126$	274.400
$^{321}126$	274.990
$^{322}126$	276.080
$^{323}126$	278.670
$^{324}126$	280.110
$^{325}126$	282.940
$^{326}126$	284.630
$^{327}126$	292.150
$^{328}126$	293.920
$^{329}126$	297.230
$^{330}126$	299.420
$^{331}126$	303.110
$^{332}126$	305.470
$^{333}126$	309.230
$^{334}126$	311.830
$^{335}126$	315.640
$^{336}126$	318.260
$^{337}126$	322.260
$^{338}126$	325.000
$^{339}126$	329.340
$^{310}127$	275.640
$^{311}127$	275.960
$^{312}127$	277.610
$^{313}127$	277.980
$^{314}127$	279.790
$^{315}127$	280.390

Isotope	Mass Excess
$^{316}127$	282.320
$^{317}127$	283.170
$^{318}127$	276.140
$^{319}127$	277.250
$^{320}127$	279.700
$^{321}127$	281.120
$^{322}127$	281.460
$^{323}127$	282.500
$^{324}127$	284.810
$^{325}127$	286.240
$^{326}127$	288.800
$^{327}127$	290.460
$^{328}127$	293.350
$^{329}127$	295.360
$^{330}127$	302.600
$^{331}127$	304.770
$^{332}127$	308.170
$^{333}127$	310.520
$^{334}127$	314.020
$^{335}127$	316.460
$^{336}127$	320.050
$^{337}127$	322.650
$^{338}127$	326.430
$^{339}127$	329.150
$^{313}128$	285.380
$^{314}128$	285.560
$^{315}128$	287.190
$^{316}128$	287.610
$^{317}128$	289.350
$^{318}128$	289.890
$^{319}128$	282.370
$^{320}128$	283.240
$^{321}128$	285.610
$^{322}128$	286.750
$^{323}128$	289.490
$^{324}128$	287.600
$^{325}128$	289.890
$^{326}128$	290.990
$^{327}128$	293.480
$^{328}128$	294.860
$^{329}128$	297.730
$^{330}128$	299.450
$^{331}128$	307.100
$^{332}128$	308.940
$^{333}128$	312.250
$^{334}128$	314.350
$^{335}128$	317.760
$^{336}128$	319.980
$^{337}128$	323.590
$^{338}128$	325.920
$^{339}128$	329.490
$^{316}129$	296.530
$^{317}129$	296.780
$^{318}129$	288.140
$^{319}129$	288.560
$^{320}129$	290.390
$^{321}129$	291.230
$^{322}129$	293.260
$^{323}129$	294.350
$^{324}129$	296.770
$^{325}129$	294.700
$^{326}129$	296.680
$^{327}129$	297.770
$^{328}129$	299.970
$^{329}129$	301.320
$^{330}129$	303.900
$^{331}129$	305.610
$^{332}129$	313.170
$^{333}129$	315.000
$^{334}129$	318.020
$^{335}129$	320.100
$^{336}129$	323.310
$^{337}129$	325.600
$^{338}129$	329.080

Isotope	Mass Excess
$^{339}129$	330.860
$^{319}130$	305.950
$^{320}130$	306.120
$^{321}130$	297.600
$^{322}130$	298.050
$^{323}130$	300.120
$^{324}130$	300.840
$^{325}130$	299.980
$^{326}130$	300.520
$^{327}130$	302.470
$^{328}130$	303.270
$^{329}130$	305.460
$^{330}130$	306.520
$^{331}130$	314.460
$^{332}130$	310.490
$^{333}130$	318.260
$^{334}130$	319.800
$^{335}130$	322.840
$^{336}130$	324.610
$^{337}130$	327.630
$^{338}130$	329.540
$^{339}130$	333.080
$^{323}131$	306.670
$^{324}131$	308.500
$^{325}131$	309.250
$^{326}131$	307.780
$^{327}131$	308.310
$^{328}131$	309.960
$^{329}131$	310.720
$^{330}131$	312.630
$^{331}131$	313.650
$^{332}131$	315.930
$^{333}131$	317.310
$^{334}131$	325.030
$^{335}131$	326.640
$^{336}131$	329.300
$^{337}131$	330.620
$^{338}131$	333.570
$^{339}131$	335.520
$^{326}132$	316.480
$^{327}132$	314.590
$^{328}132$	314.830
$^{329}132$	316.450
$^{330}132$	316.930
$^{331}132$	318.810
$^{332}132$	319.540
$^{333}132$	327.640
$^{334}132$	328.480
$^{335}132$	330.770
$^{336}132$	332.120
$^{337}132$	334.810
$^{338}132$	336.270
$^{339}132$	338.590
$^{329}133$	323.270
$^{330}133$	324.610
$^{331}133$	325.060
$^{332}133$	326.650
$^{333}133$	332.800
$^{334}133$	335.400
$^{335}133$	336.340
$^{336}133$	338.200
$^{337}133$	339.410
$^{338}133$	341.930
$^{339}133$	342.570
$^{332}134$	337.210
$^{333}134$	339.080
$^{334}134$	339.570
$^{335}134$	342.190
$^{336}134$	342.650
$^{337}134$	344.650
$^{338}134$	345.520
$^{339}134$	347.870

Isotope	Mass Excess
$^{336}135$	350.580
$^{337}135$	351.040
$^{338}135$	352.670
$^{339}135$	353.550
$^{339}136$	359.660