5.2.3

TABLE OF ATOMIC AND

MOLECULAR LINES FOR

SPARK SOURCE MASS SPECTROMETRY

OF

COMPLEX SAMPLE-GRAPHITE MIXES

R. A. BURDO AND G. H. MORRISON

Department of Chemistry
Cornell University, Ithaca, N.Y.

ABSTRACT

A detailed table of atomic and molecular mass spectral lines has been prepared to aid in the interpretation of interferences and assignment of spectral lines in complex spectra arising from the spark source analysis of natural insulating powders blended with graphite to sustain the RF spark. The compilation consisting of 3000 listings is particularly useful for multielement trace analysis of geological and biological solids. Included are carbides, oxides, polymers, multiply-charged ions, and other molecular species of several or more major and minor elements as well as a large number of trace elements.

INTRODUCTION

Spark source mass spectrometry is a useful technique for multielemental trace analysis of geological and biological solids. Such insulating materials are usually powdered and mixed with graphite to produce strong and conducting electrodes. However, the sparking of complex graphite mixes yields complicated spectra containing the carbides, oxides, polymers, multiply-charged ions, and other molecular species of several or more major and minor elements as well as a large number of trace elements.

The primary purpose of the following table is to aid in the interpretation of interferences and assignment of spectral lines in complex spectra arising from the spark source analysis of natural insulating powders in a graphite matrix. In a secondary sense, the table may also be applied to other sample types or even to other fields of mass spectrometry such as ion probe analysis where molecular species become relatively more important.

There are indeed other excellent mass tables available for general use, but they are limited for application to the specific problem as stated. More explicitly, the table of Owens and Sherman (1) is arranged by individual element with comprehensive coverage for certain kinds of species excluding carbides, oxides, and many molecular species. The table of Guthrie and Heath (2), albeit arranged by mass, excludes carbides, most oxides, charge-exchange species, and other species of interest. The aim herein is to include those species omitted in preceding tables but of possible interest in complex graphite systems, to arrange the table in order of ascending mass values, to include the relative abundance of each species listed, to indicate the theoretical resolution required to separate a listed species from a line of analytical value, and finally to be concise in format but comprehensive in scope. The latter requirement has resulted in approximately 3000 listings each containing four data words and producing a text of approximately 12,000 words on a physical format of only thirteen pages.

The entire table was manually calculated, compiled, and typed and is therefore not meant as a manual of supercritical mass and abundance data, but merely as an interpretive and useful guide. The user must assume any liability of any kind incurred in the employment of this table. Further, no claim is made as to the existence or nonexistence of any species listed herein, nor to that of any species accidentally or purposely omitted.

EXPLANATION OF TABLE

Each listing consists of a row of four words starting with the name of the species and followed by the mass, abundance, and resolutional requirement of the named species respectively.

I. NOMENCLATURE OF SPECIES

The usual chemical notation is used to identify the elemental constuents of the species. A leading superscript refers to the nominal mass of the species and a trailing superscript refers to the positive charge of the species. The plus signs of the charge superscripts are omitted since all species are ions of positive charge. The charge superscript is omitted entirely for species having a single positive charge. A special two-digit charge superscript indicates a charge-exchange species where the first digit is the initial charge of the species before a charge-reducing collision and the second digit gives the resulting or final charge after collision. The general nomenclature and the special meaning of the nominal mass superscript are best illustrated by example.

I.A. Elementally Homogeneous Species

(a) ^{12}C : a singly-charged ion of carbon 12

(b) $^{12}C^3$: a triply-charged ion of carbon 12

(c) $^{12}C_2$: a homo-isotopic dimer of carbon and the only combination of carbon isotopes having a nominal mass of 24. (Absence of superscript = +1).

(d) $^{25}C_2^2$: a hetero-isotopic dimer of carbon having a +2 positive charge and containing all combinations of carbon isotopes having a nominal mass of 25. (Only one combination in this case).

(e) $^{86}Si_3$: a trimer of silicon containing all combinations of silicon isotopes giving a nominal mass of 86, ie, $^{86}Si_3 = (^{28}Si_2 + ^{30}Si) + (^{28}Si + ^{29}Si_2)$, where the parentheses indicate the combinations having the same nominal mass.

(f) $^{12}C^{32}$: a charge-exchange species of carbon 12 where the initial charge is +3 and the final charge is +2.

I.B. Elementally Heterogeneous Species

(a) ^{28}SiC : a monocarbide of silicon 28 and the only significant* combination of carbon and silicon isotopes having a nominal mass of 40.

(b) ^{41}SiC : all the combinations** of silicon and carbon isotopes having a nominal mass of 41, ie, $(^{29}Si + ^{12}C)$ and $(^{28}Si + ^{13}C)$.

(c) $^{28}Si_3C_2$: the only significant* combination of silicon and carbon isotopes having a nominal mass of 108, ie, there is only one silicon trimer of nominal mass 84 and only one carbon dimer of nominal mass 24.

(d) $^{109}Si_3C_2$: all the combinations** of silicon trimer and carbon dimer having a nominal mass of 109, ie, $(^{85}Si_3 + ^{12}C_2)$ and $(^{28}Si_3 + ^{25}C_2)$.

* The word 'significant' means that if a single combination of isotopes is cited, then it is either the only possible combination or a combination which accounts for 99.0% or more of of the abundance of all possible combinations.

** The phrase 'all the combinations' means that the combinations included are either the only possible ones or that they cumulatively account for 99.0% or more of the abundance of all combinations.

The starred definitions have meaning in relation to the mass and abundance data following a cited species (see parts II and III).

II. MASS (second word)

The masses of singly-charged species are taken from the table of Guthrie and Heath (2) and are rounded to five decimal places. Some elements are known to less than five places while others are only approximated as indicated by a (/) following the last digit in the mass value. Polymeric and heterogeneous species have masses equal to the sum of

the individual contributing masses. Charge-exchange masses are obtained by multiplying the singly-charged mass by a factor (m/n^2) where (m) is the initial and (n) the final charge of the ion. Multiply-charged ions have masses equal to the singly-charged mass divided by the integral number of positive charges.

For species containing more than one combination of isotopes (eg., I.A.e,I.B.b, and I.B.d), the mass is that of the combination of isotopes which is the most abundant, as opposed to masses of single combinations which are unequivocal. The grouping of combinations of isotopes of the same elements to produce a species of the same chemical formula was performed to reduce the number of listings and is based on the fact that the combinations in a group are not resolvable with present commercial apparatus which have resolutions of 10,000 maximum and 5,000 or less practical.

III. ABUNDANCE (third word)

Isotopic abundances are based on Guthrie and Heath (2). Abundances apply only to species of the same kind (same chemical formula, same charge, but possibly different exact masses). For example, ^{28}SiC at mass 39.97693 comprises 91.19% of the total amount of silicon carbide formed from all combinations of silicon and carbon isotopes, ^{41}SiC at mass 40.97649 accounts for 5.67%, etc. The abundance of ^{28}SiC is that of a single combination while that of ^{41}SiC is the sum of the abundances of more than one combination.

The abundances of molecular species which are elementally homogeneous are calculated using the binomial expansion according to Hill (3) or the equivalent probability formula given by Owens and Sherman (1) for polyatomic clusters:

$$RA = (A^a B^b C^c ... N^n)(M!)/(a!b!c!...n!) \qquad 1.$$

where RA is the relative abundance of a given polyatomic cluster (a specified combination of isotopes) containing M total atoms of an element which has isotopes A', B', C',....N' with isotopic abundances A, B, C, ...N respectively and where the number of atoms of each isotope contained in the cluster is a, b, c, ...n respectively. The summation (a+b+c+...n) is equal to M. This formula is applied to each specific combination of isotopes until all possible combinations are exhausted.

For clusters containing different elements, the above formula is applied to each element individually and the abundance of the heterogeneous cluster is taken as the product of the indivual RA's for each element in the cluster.

The tabled abundances are given in percent. The appearance of an (E) in the tabled abundance indicates a negative exponential form so that 1.2E3, for example, means 00.0012%.

For species containing more than one combination (seeI), the abundance is the sum of all combinations considered, whereas the mass is that of the most abundant combination.

IV. RESOLUTIONAL REQUIREMENT (fourth word)

Resolution is defined as $R = M_0/\Delta M$. M_0 is indicated in the table by a series of five dashes for a line of interest at each nominal mass unit and at some half-mass units where appropriate. A negative value for R indicates that the listed species occurs at a lower mass than M_0, the latter being indicated by the next dashed line. A positive value of R indicates a higher mass than M_0 which is defined as the first previous dashed line.

The appearance of an (E) in the resolution value indicates a positive exponential form so that 15E3, for example, means a resolution of 15,000. There are no exponential forms for resolutions less than 10,000 (= 10E3).

V. SCOPE

The number and kinds of species included for each element depends on its definition as a major, minor, or trace constituent in geological and biological samples. Carbon, being the matrix considered, is defined as a major element. Other defined majors are oxygen, sodium, silicon, phosphorous, sulfur, potassium, calcium, titanium, and iron. Minors are given as chromium, nickel, zinc, strontium, zirconium, and barium. Most other elements are defined as trace.

For trace elements the species considered are: singly-and-multiply charged ions up to +3, polymerization up to the dimer only, mono-and-dicarbides, and mono-and-di-oxides.

For minor elements the species are: singly-and-multiply charged ions up to +4, polymerization up to the trimer, formation of oxide up to the trioxide and carbide to the tricarbide, and charge-exchange species with initial charges of +4 or less.

Major elements have more extensive coverage: singly-and-multiply charged ion up to +6, polymerization up to four atoms, formation of tetra-oxide and tetra-carbide, charge-exchange species with initial charge of 7 or less, and some complex species having two atoms of the major species and one to three atoms or carbon or oxygen. Polymer formers such as carbon, aluminum, and silicon are considered to form even more complex species and some combinations of these elements with other major elements are included. Appropriate higher degrees of polymerization and carbide and oxide formation are listed for these three elements.

Only the lower-charged species of rare gases are considered.

Hydrocarbons up to mass 100 are included.

The first hydrides(MH) of all elements from lithium to molybdenum plus barium, lanthanum, and cerium are also listed.

The mass range covered is from 1 to 270 with reductions in the number of entries from mass 210 to 270 where only two elements, thorium and uranium, are of interest.

REFERENCES

1. E.B. Owens and A.M. Sherman, Mass Spectrographic Lines of the Elements, MIT Tech. Rep. No. 265, 1962
2. J.W. Guthrie and R.L. Heath, Table of Atomic Masses, Sandia Corporation Monograph SCR-245, 16th Ed., 1961
3. H.C. Hill, Introduction to Mass Spectrometry, Heydon and Son, London, 1966

Nuclide	Mass	Abundance	Value
^{1}H	1.00782	99.985	
$^{3}He^{2}$	1.50801	01.4E4	
$^{12}C^{6}$	2.00000	98.893	- 143
$^{4}He^{2}$	2.00130	99.999	- 157
$^{6}Li^{3}$	2.00500	07.42	- 221
^{2}D	2.01410	00.015	-----
$^{1}H_2$	2.01565	99.970	+1300
$^{13}C^{6}$	2.16723	01.107	
$^{12}C^{76}$	2.33328	99.893	
$^{7}Li^{3}$	2.33870	92.58	
$^{13}C^{76}$	2.52837	01.107	
$^{13}C^{5}$	2.60067	01.107	
$^{16}O^{6}$	2.66582	99.759	
$^{14}N^{5}$	2.80061	99.634	
$^{17}O^{6}$	2.83319	00.037	
$^{12}C^{65}$	2.88000	98.893	
$^{18}O^{6}$	2.99986	00.204	- 186
$^{12}C^{4}$	3.00000	98.893	- 187
$^{9}Be^{3}$	3.00407	100.000	- 252
$^{6}Li^{2}$	3.00756	07.42	- 356
^{3}He	3.01603	01.4E4	-----
^{3}H	3.01605	......	+15E4
$^{3}H_2$	3.02193	00.030	+ 512
$^{16}O^{76}$	3.11051	99.759	
$^{13}C^{65}$	3.12080	01.107	
$^{16}O^{5}$	3.19898	99.759	
$^{13}C^{4}$	3.25084	01.107	
$^{17}O^{76}$	3.30531	00.037	
$^{10}Be^{3}$	3.33765	19.61	
$^{17}O^{5}$	3.39982	00.037	
$^{18}O^{76}$	3.49976	00.204	- 437
$^{14}N^{4}$	3.50077	99.634	- 485
$^{7}Li^{2}$	3.50800	92.58	-----
$^{16}O^{5}$	3.59983	00.204	
$^{11}B^{3}$	3.66977	80.39	
$^{12}C^{54}$	3.75000	98.893	
$^{15}N^{4}$	3.75003	00.366	
$^{23}Na^{6}$	3.83163	100.000	
$^{16}O^{65}$	3.83878	99.759	
$^{24}Mg^{6}$	3.99751	78.70	- 786
$^{16}O^{4}$	3.99873	99.759	-1034
$^{12}C^{3}$	4.00000	98.893	-1540
^{4}He	4.00260	99.999	-----
$^{2}H_2$	4.02820	02.0E4	+ 156
$^{13}C^{54}$	4.06355	01.107	
$^{17}O^{65}$	4.07979	00.037	
$^{25}Mg^{6}$	4.16431	10.13	
$^{17}O^{4}$	4.24978	00.037	
$^{18}O^{65}$	4.31980	00.204	
$^{26}Mg^{6}$	4.33043	11.17	- 829
$^{13}C^{3}$	4.33445	01.107	-----
$^{14}N^{54}$	4.37596	99.634	
$^{27}Al^{6}$	4.49692	100.000	-1570
$^{18}O^{4}$	4.49979	00.204	-----
$^{9}Be^{2}$	4.50610	100.000	+ 713
$^{23}Na^{3}$	4.59796	100.000	
$^{28}Si^{6}$	4.66282	92.21	- 960
$^{14}N^{3}$	4.66769	99.634	-----
$^{19}F^{4}$	4.74960	100.000	
$^{24}Mg^{5}$	4.79717	78.70	
$^{29}Si^{6}$	4.82941	04.70	
$^{30}Si^{6}$	4.99563	03.09	-----
$^{25}Mg^{5}$	4.99717	10.13	+3240
$^{16}O^{34}$	4.99841	99.759	+1797
$^{15}N^{3}$	5.00004	00.366	+1130
$^{10}B^{2}$	5.00647	19.61	+ 461
$^{31}P^{6}$	5.16229	100.000	
$^{26}Mg^{5}$	5.19652	11.17	
$^{17}O^{34}$	5.31223	00.037	- 275
$^{32}S^{6}$	5.32868	95.0	-1801
$^{16}O^{3}$	5.33164	99.759	-----
$^{12}C^{43}$	5.33333	98.893	+3149
$^{33}S^{6}$	5.49524	00.76	- 585
$^{11}B^{2}$	5.50465	80.39	-----
$^{28}Si^{5}$	5.59539	92.21	
$^{18}O^{34}$	5.62474	00.204	
$^{34}S^{6}$	5.66131	04.22	-1120
$^{17}O^{3}$	5.66638	00.037	-----
$^{23}Na^{4}$	5.74745	100.000	
$^{24}Mg^{65}$	5.75641	78.70	+ 642
$^{13}C^{33}$	5.77926	01.107	+ 181
$^{29}Si^{5}$	5.79530	04.70	
$^{36}S^{6}$	5.93451	00.014	- 292
$^{36}A^{6}$	5.93459	00.337	- 293
$^{30}Si^{15}$	5.93475	03.09	- 295
$^{24}Mg^{4}$	5.99626	78.70	- 319
$^{25}Mg^{65}$	5.99660	10.13	- 327
$^{18}O^{3}$	5.99972	00.204	- 391
$^{12}C^{2}$	6.00000	98.893	- 398
^{6}Li	6.01512	07.42	-----
$^{31}P^{5}$	6.19476	100.000	
$^{14}N^{43}$	6.22358	99.634	- 273
$^{26}Mg^{65}$	6.23582	11.17	- 587
$^{25}Mg^{4}$	6.24646	10.13	-----
$^{19}F^{3}$	6.33280	100.000	
$^{32}S^{5}$	6.39441	95.0	
$^{27}Al^{65}$	6.47557	100.000	- 323
$^{39}K^{6}$	6.49395	93.10	-3820
$^{26}Mg^{4}$	6.49565	11.17	-----
$^{13}C^{2}$	6.50168	01.107	+1077
$^{33}S^{5}$	6.59424	00.76	
$^{40}A^{6}$	6.66040	99.6	-22E4
$^{40}Ca^{6}$	6.66043	96.97	-----
$^{40}K^{6}$	6.66067	00.012	+27E3
$^{20}Ne^{6}$	6.66415	90.92	+1790
$^{12}C^{53}$	6.66666	98.893	+1064
$^{28}Si^{65}$	6.71446	92.21	
$^{27}Al^{4}$	6.74538	100.000	
$^{34}S^{5}$	6.79358	100.000	
$^{41}K^{6}$	6.82697	06.88	
$^{29}Si^{65}$	6.95436	04.70	
$^{42}Ca^{6}$	6.99310	00.64	- 306
$^{35}Cl^{5}$	6.99377	75.529	- 316
$^{28}Si^{4}$	6.99423	92.21	- 322
$^{21}Ne^{3}$	6.99795	00.257	- 389
$^{14}N^{2}$	7.00154	99.638	- 485
^{7}Li	7.01600	92.58	-----
^{6}LiH	7.02232	07.42	+1029
$^{16}O^{43}$	7.10885	99.759	
$^{43}Ca^{6}$	7.15980	00.146	
$^{23}Na^{54}$	7.18431	100.000	-----
$^{30}Si^{65}$	7.19370	03.09	+ 765
$^{36}S^{5}$	7.19342	00.014	+ 789
$^{36}A^{5}$	7.19351	00.337	+ 781
$^{13}C^{53}$	7.22409	01.107	
$^{29}Si^{4}$	7.24412	04.70	
$^{44}Ca^{6}$	7.32592	02.06	-----
$^{22}Ne^{3}$	7.33046	08.82	+1614
$^{37}Cl^{5}$	7.39318	24.471	-----
$^{31}P^{65}$	7.43370	100.000	
$^{45}Sc^{6}$	7.49265	100.000	-9490
$^{30}Si^{4}$	7.49344	03.09	-----
$^{24}Mg^{54}$	7.49533	78.70	+3965
$^{15}N^{2}$	7.50005	00.366	+1134
$^{17}O^{43}$	7.55170	00.037	
$^{32}S^{65}$	7.67330	95.0	
$^{31}P^{4}$	7.74344	100.000	
$^{39}K^{5}$	7.79274	93.10	-----
$^{25}Mg^{54}$	7.80807	10.13	+ 508
$^{47}Ti^{6}$	7.82529	07.29	+ 240
$^{48}Ti^{6}$	7.99132	73.98	-1303
$^{48}Ca^{6}$	7.99209	00.185	-1489
$^{40}A^{5}$	7.99252	99.6	-1606
$^{40}Ca^{5}$	7.99252	96.97	-1619
$^{40}K^{5}$	7.99280	00.012	-1717
$^{32}S^{4}$	7.99302	95.0	-1801
$^{24}Mg^{3}$	7.99501	78.70	-3264
$^{16}O^{2}$	7.99746	99.759	-----
$^{18}O^{43}$	7.99963	00.204	+3685
^{7}LiH	8.02382	92.57	+ 303
$^{26}Mg^{54}$	8.11956	11.17	
$^{34}S^{85}$	8.15229	04.22	-1434
$^{49}Ti^{6}$	8.15798	05.51	-----
$^{41}K^{5}$	8.19237	06.88	
$^{33}S^{4}$	8.24287	00.76	
$^{50}Ti^{6}$	8.24287	05.34	-1847
$^{50}Cr^{6}$	8.32434	04.31	-1950
$^{50}V^{6}$	8.32453	00.24	-2040
$^{25}Mg^{3}$	8.32861	10.13	-----
$^{42}Ca^{5}$	8.39173	00.64	+ 132
$^{27}Al^{6}$	8.43173	100.00	-----
$^{19}F^{43}$	8.44373	100.00	+ 703
$^{51}V^{6}$	8.49066	99.76	- 954
$^{34}S^{4}$	8.49197	04.22	-1118
$^{17}O^{2}$	8.49957	00.037	-----
$^{43}Ca^{5}$	8.59176	00.146	
$^{52}Cr^{6}$	8.65675	83.76	-2107
$^{26}Mg^{3}$	8.66086	11.17	-----
$^{35}Cl^{4}$	8.74221	75.529	-----
$^{28}Si^{154}$	8.75279	92.21	+ 826
$^{44}Ca^{5}$	8.79110	02.06	
$^{53}Cr^{6}$	8.82344	09.55	
$^{16}O^{53}$	8.88606	99.759	
$^{54}Cr^{6}$	8.98981	02.38	- 403
$^{54}Fe^{6}$	8.98993	05.82	- 405
$^{45}Sc^{5}$	8.99118	100.000	- 429
$^{36}S^{4}$	8.99177	00.014	- 441
$^{36}A^{4}$	8.99189	00.337	- 444
$^{27}Al^{5}$	8.99384	100.000	- 491
$^{18}O^{2}$	8.99958	00.204	- 714
$^{12}C^{32}$	9.00000	98.893	- 739
^{9}Be	9.01219	100.000	-----
$^{29}Si^{54}$	9.05515	04.70	+ 210
$^{55}Mn^{6}$	9.15634	100.000	
$^{48}Ti^{5}$	9.19053	08.00	-----
$^{48}Ca^{5}$	9.19074	00.003	+44E3
$^{37}Cl^{4}$	9.24148	24.471	
$^{56}Fe^{6}$	9.32249	91.66	-2961
$^{28}Si^{3}$	9.32564	92.21	-----
$^{39}K^{53}$	9.35129	93.10	- 604
$^{30}Si^{54}$	9.36680	03.09	-----
$^{47}Ti^{5}$	9.39075	07.29	
$^{17}O^{53}$	9.44396	00.037	
$^{57}Fe^{6}$	9.48923	02.19	- 953
$^{38}A^{4}$	9.49068	00.063	-1115
$^{19}F^{2}$	9.49920	100.000	-----
$^{48}Ti^{5}$	9.58959	73.98	
$^{48}Ca^{5}$	9.59051	00.185	+10E3
$^{44}Ca^{65}$	9.59102	02.06	+6706
$^{58}Fe^{6}$	9.65555	00.33	-2945
$^{58}Ni^{6}$	9.65589	69.18	-3285
$^{28}Si^{3}$	9.65883	04.70	-----
$^{31}P^{54}$	9.67930	100.00	+ 472
$^{39}K^{4}$	9.74093	93.10	-----
$^{13}C^{32}$	9.75252	01.107	+ 840
$^{49}Ti^{5}$	9.78957	05.51	
$^{59}Co^{6}$	9.82221	100.000	-----
$^{41}K^{65}$	9.83084	93.10	+1138
$^{60}Ni^{6}$	9.98846	26.23	- 409
$^{50}Ti^{5}$	9.98896	05.34	- 418
$^{50}Cr^{5}$	9.98921	04.31	- 422
$^{50}V^{5}$	9.98943	00.24	- 426
$^{32}S^{54}$	9.99127	95.0	- 462
$^{20}Ne^{2}$	9.99622	90.92	- 599
$^{18}O^{53}$	9.99953	00.204	- 747
^{10}B	10.01294	19.61	-----
^{10}Be	10.01354	-----	+17E3
^{9}BeH	10.02001	99.985	+1416
$^{61}Ni^{6}$	10.15518	01.19	
$^{51}V^{5}$	10.18880	99.76	
$^{23}Na^{43}$	10.21767	100.000	
$^{41}K^{4}$	10.24046	06.88	
$^{62}Ni^{6}$	10.32139	03.66	-3226
$^{31}P^{5}$	10.32459	100.00	-----
$^{52}Cr^{5}$	10.38810	83.76	
$^{63}Cu^{6}$	10.48827	60.09	-7547
$^{42}Ca^{4}$	10.48966	00.64	-----
$^{21}Ne^{2}$	10.49692	00.257	+1445
$^{14}N^{32}$	10.50231	99.634	+ 829
$^{44}Ca^{65}$	10.54932	02.06	
$^{53}Cr^{5}$	10.58813	09.55	
$^{34}S^{54}$	10.61496	04.22	
$^{64}Ni^{6}$	10.65466	01.08	-3947
$^{64}Zn^{6}$	10.65486	48.89	-4263
$^{32}S^{3}$	10.65736	95.0	
$^{24}Mg^{43}$	10.66002	78.70	+1702
$^{43}Ca^{5}$	10.73970	00.146	- 224
$^{54}Cr^{5}$	10.78777	02.38	-72E3
$^{54}Fe^{5}$	10.78792	05.82	-----
$^{65}Cu^{6}$	10.82130	30.91	+ 323
$^{55}Mn^{5}$	10.98761	100.00	- 507
$^{66}Zn^{6}$	10.98768	27.81	- 509
$^{44}Ca^{4}$	10.98887	02.06	- 539
$^{33}S^{3}$	10.99049	00.76	- 585
$^{22}Ne^{2}$	10.99569	08.82	- 808
^{11}B	11.00931	80.39	-----
^{10}BH	11.02076	19.61	+ 962
$^{46}Ti^{65}$	11.02863	08.00	+ 570

Ion	Mass	Abund.	Δ
$^{25}Mg^{43}$	11.10482	10.13	
$^{67}Zn^{6}$	11.15452	04.11	- 344
$^{56}Fe^{5}$	11.18699	91.66	-----
$^{45}Sc^{4}$	11.23898	100.00	
$^{47}Ti^{65}$	11.26842	07.29	
$^{68}Zn^{6}$	11.32081	18.57	-6256
$^{34}S^{5}$	11.32262	04.22	-----
$^{57}Fe^{5}$	11.38708	02.19	
$^{69}Ga^{6}$	11.48762	60.4	-1581
$^{46}Ti^{4}$	11.48816	08.00	-1708
$^{46}Ca^{4}$	11.48842	00.003	-1777
$^{23}Na^{2}$	11.49489	100.00	-----
$^{48}Ti^{65}$	11.50751	73.98	+ 911
$^{26}Mg^{43}$	11.54782	11.17	
$^{58}Fe^{5}$	11.58666	00.33	-28E3
$^{58}Ni^{5}$	11.58707	69.18	-----
$^{70}Ge^{6}$	11.65400	20.52	-5112
$^{70}Zn^{6}$	11.65422	00.62	-5658
$^{35}Cl^{3}$	11.65628	75.529	-----
$^{47}Ti^{4}$	11.73794	07.29	
$^{59}Co^{5}$	11.78664	100.00	
$^{71}Ga^{6}$	11.82080	39.6	
$^{60}Ni^{5}$	11.98615	26.23	- 866
$^{50}Ti^{65}$	11.98675	05.45	- 906
$^{72}Ge^{6}$	11.98693	27.43	- 918
$^{48}Ti^{4}$	11.98699	73.98	- 922
$^{50}Cr^{5}$	11.98705	04.31	- 927
$^{48}Ca^{4}$	11.98813	00.185	-1011
$^{36}S^{3}$	11.98903	00.014	-1094
$^{36}A^{3}$	11.98918	00.337	-1110
$^{27}Al^{43}$	11.99180	100.00	-1463
$^{24}Mg^{2}$	11.99252	78.70	-1604
$^{16}O^{32}$	11.99619	99.759	-3150
^{12}C	12.00000	98.893	-----
^{11}BH	12.01713	80.38	+ 701
$^{6}Li_{2}$	12.03000	00.551	+ 400
$^{75}Ge^{6}$	12.15389	07.76	- 547
$^{39}K^{54}$	12.17616	93.10	-----
$^{61}Ni^{5}$	12.18622	01.19	+1210
$^{49}Ti^{4}$	12.23697	05.51	
$^{74}Ge^{6}$	12.32017	36.54	-6845
$^{74}Se^{6}$	12.32042	00.87	-7950
$^{37}Cl^{3}$	12.32197	24.471	-----
$^{62}Ni^{5}$	12.38567	03.66	
$^{28}Si^{43}$	12.43418	92.21	
$^{52}Cr^{65}$	12.46752	83.76	- 459
$^{50}Ti^{4}$	12.48620	05.45	-1859
$^{50}Cr^{4}$	12.48651	04.31	-1949
$^{50}V^{4}$	12.48679	00.24	-2038
$^{75}As^{6}$	12.48695	100.00	-2093
$^{40}Ca^{54}$	12.48831	96.97	-2710
$^{25}Mg^{2}$	12.49292	10.13	-----
$^{63}Cu^{5}$	12.58592	69.09	
$^{38}A^{5}$	12.65424	00.063	
$^{53}Cr^{65}$	12.70576	09.55	- 448
$^{51}V^{4}$	12.73599	99.76	
$^{17}O^{32}$	12.74935	00.037	+ 953
$^{23}Na^{53}$	12.77209	100.00	- 931
$^{64}Ni^{5}$	12.78559	01.08	-53E3
$^{64}Zn^{5}$	12.78583	48.89	-----
$^{41}K^{54}$	12.80057	06.88	+ 867
$^{29}Si^{43}$	12.87843	04.70	
$^{54}Cr^{65}$	12.94533	02.38	- 224
$^{54}Fe^{65}$	12.94551	05.82	- 225
$^{52}Cr^{4}$	12.98513	83.76	- 713
$^{65}Cu^{5}$	12.98556	30.91	- 731
$^{39}K^{3}$	12.98790	93.10	- 841
$^{26}Mg^{2}$	12.99130	11.17	-1078
^{13}C	13.00336	01.107	-----
^{12}CH	13.00782	98.878	+2916
$^{13}Li_{2}$	13.03112	13.74	+ 468
$^{55}Mn^{65}$	13.18513	100.00	- 265
$^{56}Zn^{5}$	13.18521	27.81	- 265
$^{53}Cr^{4}$	13.23516	09.55	-----
$^{40}A^{3}$	13.32080	99.60	-22E4
$^{40}Ca^{3}$	13.32086	96.97	-----
$^{40}K^{3}$	13.32133	00.012	+28E3
$^{30}Si^{43}$	13.32166	03.09	+17E3
$^{24}Mg^{3}$	13.32502	78.70	+3202
$^{67}Zn^{5}$	13.38543	04.11	
$^{56}Fe^{5}$	13.42439	91.66	
$^{54}Cr^{4}$	13.48472	02.38	-2230
$^{54}Fe^{4}$	13.48490	05.82	-2298
$^{27}Al^{2}$	13.49077	100.00	-----
$^{16}O^{32}$	13.49937	00.204	+1569
$^{68}Zn^{5}$	13.58497	18.57	
$^{41}K^{3}$	13.65394	06.88	
$^{57}Fe^{65}$	13.66450	02.19	+1293
$^{55}Mn^{4}$	13.73451	100.00	
$^{44}Ca^{54}$	13.73609	02.06	+8693
$^{31}P^{43}$	13.76612	100.00	+ 434
$^{68}Ga^{5}$	13.78514	60.4	+ 271
$^{56}Fe^{65}$	13.90400	00.33	
$^{56}Fe^{4}$	13.98374	91.66	- 724
$^{70}Ge^{5}$	13.98480	20.52	- 766
$^{70}Zn^{5}$	13.98508	00.62	- 778
$^{43}Ca^{3}$	13.98621	00.64	- 831
$^{28}Si^{2}$	13.98847	92.21	- 959
^{14}N	14.00307	99.634	-----
^{14}C	14.00324	LT.01	+82E3
^{13}CH	14.01118	01.107	+1726
$^{12}CH_{2}$	14.01565	98.863	+1113
$^{7}Li_{2}$	14.03200	85.71	+ 484
$^{32}S^{43}$	14.20981	95.0	- 593
$^{57}Fe^{4}$	14.23385	02.19	-----
$^{19}P^{32}$	14.24880	100.00	+ 952
$^{46}Ti^{54}$	14.36020	08.00	
$^{43}Ca^{3}$	14.31959	00.146	
$^{26}Mg^{53}$	14.43477	11.17	
$^{58}Fe^{4}$	14.48333	00.33	-2945
$^{58}Ni^{4}$	14.48384	69.18	-3256
$^{29}Si^{2}$	14.48825	04.70	-----
$^{44}Ca^{3}$	14.65183	02.06	-----
$^{47}Ti^{54}$	14.67242	07.29	+ 713
$^{59}Co^{4}$	14.73330	100.00	
$^{60}Ni^{4}$	14.98269	26.23	- 861
$^{48}Ti^{54}$	14.98373	73.98	- 916
$^{45}Sc^{3}$	14.98531	100.00	-1014
$^{30}Si^{2}$	14.98688	03.09	-1134
$^{27}Al^{53}$	14.98974	100.00	-1446
^{15}N	15.00011	00.366	-----
$^{12}CH_{3}$	15.02347	98.523	+ 642
^{14}NH	15.01090	99.509	+1390
$^{34}S^{43}$	15.09683	04.22	
$^{61}Ni^{4}$	15.23277	01.19	
$^{46}Ti^{3}$	15.31754	08.00	-43E3
$^{46}Ca^{3}$	15.31790	00.003	-----
$^{62}Ni^{4}$	15.48209	03.66	-3233
$^{31}P^{2}$	15.48688	100.00	-----
$^{35}Cl^{43}$	15.54171	75.529	-15E3
$^{28}Si^{53}$	15.54274	92.21	-----
$^{50}Ti^{54}$	15.60775	05.34	-----
$^{50}Cr^{54}$	15.60814	04.31	+40E3
$^{63}Cu^{4}$	15.73240	69.09	
$^{47}Ti^{3}$	15.65059	07.29	
$^{64}Ni^{4}$	15.98199	01.08	-1238
$^{64}Zn^{4}$	15.98229	48.89	-1267
$^{48}Ti^{3}$	15.98265	73.98	-1305
$^{48}Ca^{3}$	15.98418	00.185	-1491
$^{32}S^{2}$	15.98604	95.0	-1803
^{16}O	15.99949	99.759	-----
^{15}NH	16.00793	00.366	+1229
$^{14}NH_{2}$	16.01872	99.955	+ 671
$^{12}CH_{4}$	16.03130	98.844	+ 400
$^{29}Si^{53}$	16.09805	04.70	
$^{52}Cr^{4}$	16.23141	83.76	-30E3
$^{65}Cu^{4}$	16.23195	30.91	-----
$^{49}Ti^{3}$	16.31596	05.51	
$^{66}Zn^{4}$	16.48151	27.81	-3907
$^{33}S^{2}$	16.48573	00.76	-----
$^{53}Cr^{54}$	16.54395	09.55	
$^{50}Ti^{3}$	16.64826	05.34	-----
$^{50}Cr^{3}$	16.64868	04.31	+40E3
$^{50}V^{3}$	16.64905	00.24	+21E3
$^{30}Si^{53}$	16.65209	03.09	+4347
$^{67}Zn^{4}$	16.73178	04.11	
$^{54}Cr^{54}$	16.85590	02.38	-----
$^{54}Fe^{54}$	16.85613	05.82	+73E3
$^{68}Zn^{4}$	16.98122	18.57	- 949
$^{51}V^{3}$	16.98133	99.76	- 955
$^{34}S^{2}$	16.98393	04.22	-1118
^{17}O	16.99913	00.037	-----
^{16}OH	17.00274	99.747	+4709
$^{14}NH_{3}$	17.02655	99.593	+ 620
$^{55}Mn^{5}$	17.16814	100.000	
$^{31}P^{53}$	17.20765	100.000	
$^{23}Na^{32}$	17.24234	100.000	
$^{52}Cr^{3}$	17.31350	83.76	-----
$^{39}K^{43}$	17.31720	93.10	+4679
$^{56}Fe^{54}$	17.47967	91.66	-3680
$^{70}Zn^{4}$	17.48134	00.62	-5677
$^{35}Cl^{2}$	17.48442	75.529	-----
$^{53}Cr^{3}$	17.64688	09.55	
$^{40}Ca^{43}$	17.76115	96.97	-----
$^{32}S^{53}$	17.76226	95.0	+16E3
$^{57}Fe^{54}$	17.79231	02.19	+ 570
$^{54}Cr^{3}$	17.97962	02.38	- 921
$^{54}Fe^{3}$	17.97987	05.82	- 933
$^{36}S^{2}$	17.98354	00.014	-1152
$^{36}A^{2}$	17.98377	00.337	-1170
$^{24}Mg^{32}$	17.98879	78.70	-1734
^{18}O	17.99916	00.204	-----
$^{12}C_{3}$	18.00000	96.71	+21E3
$H_{2}O$	18.01056	99.747	+1579
^{6}LiC	18.01500	07.34	+1136
$^{9}Be_{2}$	18.02439	100.00	+ 713
$^{14}NH_{4}$	18.03437	99.584	+ 511
$^{56}Fe^{54}$	18.10416	00.33	
$^{41}K^{53}$	18.20526	06.88	
$^{55}Mn^{3}$	18.31269	100.00	
$^{37}Cl^{2}$	18.48295	24.471	-----
$^{37}C_{3}$	18.50168	3.25	+ 987
$^{56}Fe^{3}$	18.64498	91.66	
$^{25}Mg^{32}$	18.73938	10.13	
$^{34}S^{53}$	18.87103	04.22	
$^{57}Fe^{3}$	18.97847	02.19	- 953
$^{38}A^{2}$	18.98137	00.063	-1116
^{19}P	18.99840	100.00	-----
$^{38}C_{3}$	19.00336	00.036	+3830
^{18}OH	19.00698	00.204	+2214
$H_{2}O$	19.01477	00.037	+1161
^{19}LiC	19.01600	91.64	+1079
$H_{3}O$	19.01837	99.714	+ 951
$^{58}Fe^{3}$	19.31110	00.33	-28E3
$^{58}Ni^{3}$	19.31178	69.18	-----
$^{39}K^{2}$	19.48186	93.10	-----
$^{26}Mg^{32}$	19.48695	11.17	+3827
$^{44}Ca^{43}$	19.53577	02.06	+ 361
$^{60}Ni^{3}$	19.97692	26.23	-1288
$^{40}A^{2}$	19.98119	99.60	-1777
$^{40}Ca^{2}$	19.98129	96.97	-1793
$^{40}K^{2}$	19.98200	00.012	-1915
^{20}Ne	19.99244	90.92	-----
HF	20.00622	99.985	+1451
$H_{2}O$	20.01480	00.204	+ 894
$^{10}B_{2}$	20.02588	03.85	+ 598
$^{27}Al^{32}$	20.23616	100.00	
$^{61}Ni^{3}$	20.31036	01.19	
$^{46}Ti^{43}$	20.42339	08.00	
$^{41}K^{2}$	20.48092	06.88	
$^{62}Ni^{3}$	20.64278	03.66	
$^{47}Ti^{43}$	20.86745	07.29	
$^{63}Cu^{3}$	20.97653	69.09	-1212
$^{84}Sr^{4}$	20.97831	00.56	-1351
$^{42}Ca^{2}$	20.97931	00.64	-1444
$^{28}Si^{32}$	20.98270	92.21	-1883
^{21}Ne	20.99385	00.257	-----
^{9}BeC	21.01219	98.89	+1144
$^{21}B_{2}$	21.02225	31.52	+ 739
$^{85}Rb^{4}$	21.22801	72.15	
$^{64}Ni^{3}$	21.30932	01.08	-55E3
$^{64}Zn^{3}$	21.30971	48.89	-----
$^{48}Ti^{43}$	21.31020	73.98	+43E3
$^{86}Sr^{4}$	21.47734	09.86	-11E3
$^{43}Ca^{2}$	21.47939	00.146	-----
$^{65}Cu^{3}$	21.64259	30.91	-----
$^{39}K^{32}$	21.64650	93.10	+5535
$^{87}Sr^{4}$	21.72725	09.86	-27E4
$^{87}Rb^{4}$	21.72733	27.85	-----
$^{29}Si^{32}$	21.73237	04.70	+4311
$^{66}Zn^{3}$	21.97535	27.81	-9157
$^{88}Sr^{4}$	21.97650	82.56	-18E3
$^{44}Ca^{2}$	21.97775	02.06	-----
^{22}Ne	21.99138	08.82	+1612
^{6}LiO	22.00991	07.40	+ 683
^{10}BC	22.01294	19.39	+ 625
$^{11}B_{2}$	22.01861	64.63	+ 538
$^{50}Ti^{43}$	22.19768	05.34	- 773
$^{50}Cr^{43}$	22.19824	04.31	- 788
$^{40}Ca^{53}$	22.20143	96.97	- 889
$^{89}Y^{4}$	22.22643	100.00	-----
$^{67}Zn^{3}$	22.30905	04.11	

Species	Mass	Abundance	Value
$^{90}\text{Zr}^{4}$	22.47608	51.48	-12E3
$^{45}\text{Sc}^{2}$	22.47796	100.00	-----
$^{30}\text{Si}^{32}$	22.48032	03.09	+9524
$^{68}\text{Zn}^{3}$	22.64162	18.57	
$^{91}\text{Zr}^{4}$	22.72633	11.22	-----
$^{41}\text{K}^{53}$	22.75657	06.88	+ 753
$^{69}\text{Ga}^{3}$	22.97524	60.4	-1581
$^{92}\text{Zr}^{4}$	22.97617	17.11	-1689
$^{46}\text{Ti}^{2}$	22.97632	08.00	-1708
$^{46}\text{Ca}^{2}$	22.97684	00.003	-1776
^{23}Na	22.98978	100.00	-----
^{23}BC	23.00931	79.72	+1177
^{7}LiO	23.01091	92.36	+1089
$^{52}\text{Cr}^{43}$	23.08467	83.76	
$^{93}\text{Nb}^{4}$	23.22642	100.00	-----
$^{31}\text{P}^{32}$	23.23032	100.00	+5955
$^{70}\text{Ge}^{3}$	23.30800	20.52	-----
$^{70}\text{Zn}^{3}$	23.30845	00.62	+52E3
$^{47}\text{Ti}^{2}$	23.47587	07.29	-----
$^{94}\text{Zr}^{4}$	23.47691	17.40	+23E3
$^{53}\text{Cr}^{43}$	23.52918	09.55	
$^{71}\text{Ga}^{3}$	23.64033	39.6	
$^{54}\text{Cr}^{43}$	23.97283	02.38	-1964
$^{54}\text{Fe}^{43}$	23.97316	05.82	-2019
$^{72}\text{Ge}^{3}$	23.97386	27.43	-2145
$^{49}\text{Ti}^{2}$	23.97397	73.98	-2167
$^{48}\text{Ca}^{2}$	23.97626	00.185	-2731
$^{96}\text{Zr}^{4}$	23.97733	02.80	-3111
$^{32}\text{S}^{32}$	23.97906	95.0	-4011
^{24}Mg	23.98504	78.70	-----
^{23}NaH	23.99760	99.985	+1910
$^{12}\text{C}_2$	24.00000	97.798	+1603
$^{73}\text{Ge}^{3}$	24.30778	07.76	
$^{55}\text{Mn}^{43}$	24.41691	100.00	-8690
$^{44}\text{Ca}^{53}$	24.41972	02.06	-----
$^{49}\text{Ti}^{2}$	24.47393	05.51	
$^{74}\text{Ge}^{3}$	24.64033	36.54	-----
$^{74}\text{Se}^{3}$	24.64085	00.87	+47E3
$^{56}\text{Fe}^{43}$	24.85997	91.66	
$^{50}\text{Ti}^{2}$	24.97239	05.34	-1858
$^{50}\text{Cr}^{2}$	24.97302	04.31	-1949
$^{50}\text{V}^{2}$	24.97358	00.24	-2038
$^{75}\text{As}^{3}$	24.97390	100.00	-2093
^{25}Mg	24.98584	10.13	-----
^{24}MgH	24.99760	78.69	+3559
$^{25}\text{C}_2$	25.00336	02.189	+1426
^{9}BeO	25.00711	99.759	+1175
$^{12}\text{C}_2\text{H}$	25.00782	97.786	+1137
$^{57}\text{Fe}^{43}$	25.30462	02.19	-10E3
$^{76}\text{Se}^{3}$	25.30643	09.02	-38E3
$^{76}\text{Ge}^{3}$	25.30710	07.76	-----
$^{51}\text{V}^{2}$	25.47199	99.76	-----
$^{34}\text{S}^{32}$	25.47590	04.22	+6515
$^{51}\text{C}_4$	25.50502	5.4E4	+ 771
$^{48}\text{Ti}^{53}$	25.52924	08.00	+ 445
$^{77}\text{Se}^{3}$	25.64000	07.58	
$^{58}\text{Fe}^{43}$	25.74814	00.33	
$^{52}\text{Cr}^{2}$	25.97025	83.76	-2107
$^{78}\text{Se}^{3}$	25.97246	23.52	-2565
$^{78}\text{Kr}^{3}$	25.97340	00.354	-2827
^{26}Mg	25.98259	11.17	
^{25}MgH	25.99366	10.13	+2347
^{12}CN	26.00307	98.54	+1269
$^{13}\text{C}_2$	26.00671	00.013	+1077
^{10}BO	26.00785	19.56	+1029
$^{12}\text{C}_2\text{H}_2$	26.01565	97.77	+ 786
$^{47}\text{Ti}^{53}$	26.08431	07.29	
$^{59}\text{Co}^{43}$	26.19252	100.00	- 769
$^{35}\text{Cl}^{32}$	26.22664	75.529	-----
$^{79}\text{Br}^{3}$	26.30613	50.537	
$^{53}\text{Cr}^{2}$	26.47032	09.55	
$^{60}\text{Ni}^{43}$	26.63590	26.23	-9123
$^{80}\text{Se}^{3}$	26.63882	49.82	-----
$^{80}\text{Kr}^{3}$	26.63886	02.27	+67E4
$^{48}\text{Ti}^{53}$	26.63775	73.98	-25E3
$^{54}\text{Cr}^{2}$	26.96944	02.38	-2230
$^{54}\text{Fe}^{2}$	26.96980	05.82	-2298
$^{81}\text{Br}^{3}$	26.97214	49.463	-2870
^{27}Al	26.98154	100.00	-----
^{26}MgH	26.99041	11.17	+3042
$^{12}\text{C}^{15}\text{N}$	27.00011	00.362	+1453
^{11}BO	27.00422	80.20	+1190
$^{13}\text{C}^{14}\text{N}$	27.00643	01.107	+1084
$^{12}\text{C}_2\text{H}_3$	27.02347	97.762	+ 643
$^{82}\text{Kr}^{3}$	27.30448	11.56	-26E3
$^{82}\text{Se}^{3}$	27.30554	09.19	-----
$^{55}\text{Mn}^{2}$	27.46903	100.00	
$^{83}\text{Kr}^{3}$	27.63802	11.55	
$^{50}\text{Ti}^{53}$	27.74710	05.34	-39E3
$^{50}\text{Cr}^{53}$	27.74781	04.31	-----
$^{56}\text{Fe}^{2}$	27.96747	91.66	-2957
$^{63}\text{Cu}^{43}$	27.96871	69.09	-3404
$^{84}\text{Kr}^{3}$	27.97050	56.90	-4351
$^{84}\text{Sr}^{3}$	27.97108	00.56	-4782
^{28}Si	27.97693	92.21	-----
^{27}AlH	27.98936	99.985	+2251
^{12}CO	27.99491	98.66	+1556
$^{14}\text{N}_2$	28.00615	99.269	+ 957
$^{12}\text{C}_2\text{H}_4$	28.03130	97.75	+ 524
$^{85}\text{Rb}^{3}$	28.30401	72.15	
$^{64}\text{Zn}^{43}$	28.41295	48.89	
$^{57}\text{Fe}^{2}$	28.46770	02.19	
$^{86}\text{Sr}^{3}$	28.63645	09.86	-----
$^{86}\text{Kr}^{3}$	28.63693	17.37	+60E3
$^{52}\text{Cr}^{53}$	28.85584	83.76	-----
$^{65}\text{Cu}^{43}$	28.85679	30.91	+30E3
$^{58}\text{Fe}^{2}$	28.96666	00.33	-2948
$^{58}\text{Ni}^{2}$	28.96768	69.18	-3289
$^{87}\text{Sr}^{3}$	28.96966	07.02	-4242
$^{87}\text{Rb}^{3}$	28.96977	27.85	-4312
^{29}Si	28.97649	04.70	-----
^{28}SiH	28.98475	92.20	+3508
^{13}CO	28.99827	01.104	+1330
$^{12}\text{C}^{17}\text{O}$	28.99910	00.037	+1282
^{12}CHO	29.00274	98.64	+1104
$^{29}\text{N}_2$	29.00318	00.73	+1086
$^{12}\text{C}_2\text{H}_5$	29.03912	97.74	+ 463
$^{39}\text{K}^{32}$	29.22278	93.10	
$^{88}\text{Sr}^{3}$	29.30200	82.56	
$^{53}\text{Cr}^{53}$	29.41147	09.55	
$^{59}\text{Co}^{2}$	29.46659	100.00	
$^{89}\text{Y}^{3}$	29.63524	100.00	
$^{60}\text{Ni}^{2}$	29.96538	26.23	-3577
$^{54}\text{Cr}^{53}$	29.96604	02.38	-3883
$^{54}\text{Fe}^{53}$	29.96645	05.82	-4100
$^{80}\text{Zr}^{3}$	29.96881	51.48	-5305
$^{40}\text{Ca}^{32}$	29.97194	96.97	-16E3
^{30}Si	29.97376	03.09	-----
^{29}SiH	29.98431	04.70	+2841
^{14}NO	29.99799	99.39	+1237
$^{12}\text{C}^{18}\text{O}$	29.99916	00.202	+1180
$^{60}\text{C}_5$	30.00000	94.57	+1142
$^{15}\text{N}_2$	30.00022	00.001	+1133
$^{12}\text{CH}_2\text{O}$	30.01056	99.63	+ 815
$^{6}\text{LiC}_2$	30.01500	07.26	+ 727
$^{12}\text{C}_2\text{H}_6$	30.04695	97.73	+ 410
$^{91}\text{Zr}^{3}$	30.30177	11.22	
$^{61}\text{Ni}^{2}$	30.46554	01.19	
$^{55}\text{Mn}^{53}$	30.52114	100.00	
$^{69}\text{Ga}^{43}$	30.63365	60.4	-25E3
$^{92}\text{Zr}^{3}$	30.63489	17.11	-----
$^{92}\text{Mo}^{3}$	30.63618	15.84	+24E3
$^{41}\text{K}^{32}$	30.72137	06.88	
$^{62}\text{Ni}^{2}$	30.96417	03.66	-3230
$^{93}\text{Nb}^{3}$	30.96855	100.00	-5945
^{31}P	30.97376	100.00	-----
^{30}SiH	30.98158	03.09	+3961
^{15}NO	30.99502	00.362	+1457
^{12}CF	30.99840	98.893	+1257
^{13}CO	31.00251	00.002	+1077
$^{62}\text{C}_5$	31.00336	00.119	+1046
$^{31}\text{LiC}_2$	31.01600	90.70	+ 733
$^{12}\text{CH}_3\text{O}$	31.01839	98.62	+ 694
$^{56}\text{Fe}^{3}$	31.07497	91.66	
$^{94}\text{Mo}^{3}$	31.30198	09.04	-55E3
$^{94}\text{Zr}^{3}$	31.30255	17.40	-----
$^{63}\text{Cu}^{2}$	31.46480	69.09	
$^{63}\text{C}_5$	31.50502	00.0013	
$^{57}\text{Fe}^{3}$	31.63078	02.19	-7849
$^{95}\text{Mo}^{3}$	31.63481	15.72	-----
$^{64}\text{Ni}^{2}$	31.96398	01.08	-3952
$^{64}\text{Zn}^{2}$	31.96457	48.89	-4263
$^{96}\text{Mo}^{3}$	31.96832	16.53	-8526
$^{96}\text{Ru}^{3}$	31.9696	05.51	-13E3
$^{96}\text{Zr}^{3}$	31.96977	02.80	-14E3
^{32}S	31.97207	95.0	-----
^{31}PH	31.98158	99.985	+3362
$^{16}\text{O}_2$	31.98983	99.52	+1800
$^{12}\text{C}^{19}\text{F}$	32.00176	01.11	+1077
$^{12}\text{CH}_4\text{O}$	32.02613	99.60	+ 591
$^{58}\text{Fe}^{53}$	32.18517	00.33	
$^{97}\text{Mo}^{3}$	32.30207	09.46	
$^{65}\text{Cu}^{2}$	32.46389	30.91	-----
$^{130}\text{Ba}^{4}$	32.47656	00.101	+2562
$^{98}\text{Mo}^{3}$	32.63533	23.78	-----
$^{98}\text{Ru}^{3}$	32.651/	01.87	+2083
$^{74}\text{Ge}^{43}$	32.85378	36.54	
$^{66}\text{Zn}^{2}$	32.96302	27.81	-3907
$^{44}\text{Ca}^{32}$	32.96662	02.06	-6812
$^{99}\text{Ru}^{3}$	32.96868	12.72	-12E3
^{33}S	32.97146	00.76	-----
$^{132}\text{Ba}^{4}$	32.97628	00.097	+6841
^{23}SH	32.97989	95.0	+3911
$^{33}\text{O}_2$	32.99405	00.075	+1460
$^{100}\text{Ru}^{3}$	33.302/	12.62	-20E4
$^{100}\text{Mo}^{3}$	33.30217	09.63	-----
$^{67}\text{Zn}^{2}$	33.46357	04.11	-----
$^{134}\text{Ba}^{4}$	33.47606	02.42	+2679
$^{101}\text{Ru}^{3}$	33.635/	17.07	
$^{135}\text{Ba}^{4}$	33.72639	06.59	
$^{68}\text{Zn}^{2}$	33.96243	18.57	-6256
^{34}S	33.96786	04.22	-----
$^{102}\text{Ru}^{3}$	33.96791	31.61	+68E4
$^{102}\text{Pd}^{3}$	33.96829	00.96	+79E3
$^{136}\text{Ba}^{4}$	33.97609	07.81	+4127
^{33}SH	33.97928	00.76	+2974
$^{34}\text{O}_2$	33.99408	00.407	+1295
$^{10}\text{BC}_2$	34.01294	19.18	+ 754
$^{137}\text{Ba}^{4}$	34.22639	11.32	
$^{103}\text{Rh}^{3}$	34.30152	100.00	
$^{69}\text{Ga}^{2}$	34.46286	60.4	-----
$^{48}\text{Ti}^{32}$	34.46447	08.00	+21E3
$^{138}\text{Ba}^{4}$	34.47622	71.66	+2580
$^{104}\text{Pd}^{3}$	34.63443	10.97	
$^{104}\text{Ru}^{3}$	34.63474	18.58	+11E4
$^{139}\text{La}^{3}$	34.72651	99.911	
$^{70}\text{Ge}^{2}$	34.96200	20.52	-5105
$^{70}\text{Zn}^{2}$	34.96267	00.62	-5658
$^{105}\text{Pd}^{3}$	34.96827	22.23	-60E3
^{35}Cl	34.96885	75.529	-----
^{34}SH	34.97568	04.22	+5120
$^{140}\text{Ce}^{4}$	34.97632	88.48	+4681
^{23}NaC	34.98978	98.89	+1669
^{19}FO	34.99331	99.76	+1430
$^{35}\text{O}_2$	34.99829	1.4E4	+1188
$^{35}\text{BC}_2$	35.00931	79.05	+ 864
$^{47}\text{Ti}^{32}$	35.21382	07.29	
$^{106}\text{Pd}^{3}$	35.30097	27.33	-----
$^{106}\text{Cd}^{3}$	35.30198	01.215	+35E3
$^{71}\text{Ga}^{3}$	35.46241	39.6	-----
$^{142}\text{Ce}^{4}$	35.47733	11.07	+2377
$^{107}\text{Ag}^{3}$	35.63495	51.35	
$^{72}\text{Ge}^{3}$	35.96080	27.43	-5718
$^{48}\text{Ti}^{32}$	35.96096	73.98	-5867
^{36}S	35.96709	00.014	-----
^{36}A	35.96755	00.337	+79E3
$^{108}\text{Pd}^{3}$	35.96782	26.71	+49E3
$^{1}\text{H}^{35}\text{Cl}$	35.97668	75.52	+3750
^{24}MgC	35.98504	77.83	+2008
$^{23}\text{Na}^{13}\text{C}$	35.99314	01.107	+1378
$^{36}\text{C}_3$	36.00000	96.71	+1093
$(\text{NH}_4)_2$	36.06874	-----	+ 354
$^{109}\text{Ag}^{3}$	36.30154	48.65	
$^{73}\text{Ge}^{2}$	36.46167	07.76	
$^{110}\text{Cd}^{3}$	36.63443	12.39	-----
$^{110}\text{Pd}^{3}$	36.63482	11.81	+94E3
$^{74}\text{Ge}^{2}$	36.96050	36.54	-6846
$^{74}\text{Se}^{2}$	36.96127	00.87	-7984
^{37}Cl	36.96590	24.471	-----
$^{111}\text{Cd}^{3}$	36.96809	12.75	+17E3
^{36}SH	36.97491	00.014	+5120
^{37}MgC	36.98584	11.00	+1858
$^{37}\text{C}_3$	37.00336	03.25	+ 987
$^{12}\text{C}_3\text{H}$	37.00782	96.70	+ 882
$^{112}\text{Cd}^{3}$	37.30102	24.07	-----
$^{112}\text{Sn}^{3}$	37.3017	00.96	+55E3
$^{50}\text{Ti}^{32}$	37.45859	05.34	-17E3
$^{50}\text{Cr}^{32}$	37.45954	04.31	-28E3
$^{75}\text{As}^{3}$	37.46086	100.00	-----
$^{113}\text{In}^{3}$	37.63477	04.28	-----
$^{113}\text{Cd}^{3}$	37.63482	12.26	+75E4
$^{85}\text{Rb}^{43}$	37.73868	72.15	
$^{76}\text{Se}^{2}$	37.95964	09.02	-12E3
$^{76}\text{Ge}^{2}$	37.96065	07.76	-18E3
^{38}A	37.96273	00.063	-----
$^{114}\text{Cd}^{3}$	37.96785	28.86	+7415
$^{114}\text{Sn}^{3}$	37.9680	00.66	+7204
$^{1}\text{H}^{37}\text{Cl}$	37.97373	24.467	+3450
^{38}MgC	37.98269	11.16	+1910
$^{25}\text{Mg}^{13}\text{C}$	37.98920	00.112	+1434
$^{19}\text{F}_2$	37.99680	100.00	+1114
$^{38}\text{C}_3$	38.00670	00.036	+ 863
$^{12}\text{C}_2{}^{14}\text{N}$	38.00307	97.43	+ 941
$^{12}\text{C}_3\text{H}_2$	38.01565	96.69	+ 717

Species	Mass	Abund.	Value
$^{115}Sn^3$	39.30112	00.35	-48E4
$^{115}In^3$	38.30120	95.72	-----
$^{77}Se^2$	38.45999	07.58	
$^{116}Sn^3$	38.63406	14.30	-----
$^{116}Cd^3$	38.63500	07.58	+41E3
$^{52}Cr^{32}$	38.95538	83.76	-4678
$^{78}Se^2$	39.95870	23.52	-7777
$^{78}Kr^2$	38.96010	00.354	-11E3
^{39}K	38.96371	93.10	
$^{117}Sn^3$	38.96770	07.61	+9765
^{27}AlC	38.98154	98.89	+2190
^{23}NaO	38.98469	99.76	+1856
$^{26}Mg^{13}C$	38.98605	00.124	+1748
$^{12}C_2{}^{15}N$	39.00011	00.362	+1070
$^7LiO_2$	39.00581	92.13	+ 926
$^{13}C_3$	39.01005	01.4E4	+ 841
$^{12}C_3H_3$	39.02347	96.70	+ 652
$^{88}Sr^3$	39.06934	82.56	
$^{118}Sn^3$	39.30068	24.03	
$^{79}Br^2$	39.45920	50.537	
$^{89}Y^{+3}$	39.51365	100.00	
$^{119}Sn^3$	39.63438	08.58	
$^{53}Cr^{32}$	39.70549	09.55	
$^{90}Zr^{43}$	39.95748	51.46	-7820
$^{80}Se^2$	39.95824	49.82	-9187
$^{80}Kr^2$	39.95830	02.27	-9315
^{40}A	39.96239	99.60	-20E4
^{40}Ca	39.96259	96.97	-----
^{40}K	39.96400	00.012	+28E3
$^{120}Sn^3$	39.96740	32.85	+8308
$^{120}Te^3$	39.96816	00.089	+7175
^{39}KH	39.97153	93.09	+4470
^{28}SiC	39.97693	91.19	+2993
^{24}MgO	39.97996	78.60	+2301
$^{27}Al^{13}C$	39.98489	98.89	+1791
$^{12}C_2O$	39.99491	97.56	+1236
$^{12}C_3H_4$	40.03130	95.60	+ 582
$^{121}Sb^3$	40.30124	57.25	
$^{54}Cr^{32}$	40.45415	02.38	-9965
$^{54}Fe^{32}$	40.45471	05.82	-12E3
$^{81}Br^2$	40.45821	49.463	-----
$^{122}Te^3$	40.63430	02.46	-21E4
$^{122}Sn^3$	40.63449	04.72	-----
$^{92}Zr^{43}$	40.84652	17.11	
$^{82}Kr^2$	40.95673	11.56	-8032
$^{82}Se^2$	40.95832	09.19	-12E3
^{41}K	40.96183	06.88	-----
$^{123}Sb^3$	40.96806	42.75	+6575
$^{123}Te^3$	40.9681	00.87	+6533
^{40}CaH	40.97041	96.96	+4774
^{40}KH	40.97182	00.012	+4100
^{41}SiC	40.97649	05.67	+2792
$^{23}Na^{18}O$	40.98894	00.204	+1508
$^{12}C_2{}^{17}O$	40.99910	00.037	+1099
$^{12}C_2HO$	41.00274	97.55	+1001
$^9BeO_2$	41.0020	99.52	+1020
$^{12}C_3H_5$	41.0391	96.66	+ 530
$^{55}Mn^{32}$	41.20354	100.00	
$^{124}Te^3$	41.30104	04.61	-58E3
$^{124}Sn^3$	41.30175	05.94	-----
$^{124}Xe^3$	41.30204	00.096	+14E4
$^{83}Kr^2$	41.45703	11.55	
$^{125}Te^3$	41.63487	06.99	
$^{94}Zr^{43}$	41.73673	17.40	
$^{56}Fe^{32}$	41.95120	91.66	-5647
$^{84}Kr^2$	41.95576	56.90	-15E3
$^{84}Sr^2$	41.95663	00.56	-20E3
^{42}Ca	41.95863	00.64	-----
$^{126}Te^3$	41.96796	18.71	+4497
$^{126}Xe^3$	41.96815	00.90	+4407
^{41}KH	41.96965	06.88	+3807
^{42}SiC	41.97649	03.11	+2766
^{26}MgO	41.97751	11.11	+2222
$^{24}Mg^{18}O$	41.98420	00.16	+1641
$^{12}C_2{}^{18}O$	41.99916	97.56	+1035
$^{84}C_7$	42.00000	92.48	+1014
$^{10}BO_2$	42.00274	19.52	+ 951
$^{12}C_2H_2O$	42.01056	97.54	+ 808
$^{12}C_3H_6$	42.04695	96.64	+ 475
$^{127}I^3$	42.30155	100.00	
$^{85}Rb^2$	42.45601	72.15	-----
$^{85}C_7$	42.50168	07.25	+ 930
$^{128}Xe^3$	42.63450	01.919	-63E3
$^{128}Te^3$	42.63518	31.79	-----
$^{57}Fe^{32}$	42.70155	02.19	
$^{86}Sr^2$	42.95468	09.86	-10E3
$^{86}Kr^2$	42.95540	17.37	-13E3
^{43}Ca	42.95878	00.146	-----
^{43}Ca	42.95878	00.146	-----
^{42}CaH	42.96645	00.64	+5601
$^{129}Xe^3$	42.96825	26.44	+4536
^{31}PC	42.97376	98.89	+2860
^{27}AlO	42.97645	99.76	+2431
$^{30}Si^{13}C$	42.97711	00.034	+2332
$^{29}Mg^{18}O$	42.98530	00.021	+1620
$^{12}C_2{}^{19}F$	42.9984	97.80	+1450
$^{11}BO_2$	42.99911	80.00	+1065
C_2H_3O	43.01839	97.53	+ 721
$^{12}C_3H_7$	43.05477	96.63	+ 448
$^{130}Xe^3$	43.30117	04.08	-48E3
$^{130}Ba^3$	43.30208	00.101	-----
$^{130}Te^3$	43.30232	34.48	+18E4
$^{58}Fe^{32}$	43.44999	00.33	-9635
$^{87}Sr^2$	43.45450	07.02	-----
$^{87}Rb^2$	43.45465	27.85	+29E4
$^{131}Xe^3$	43.63503	21.18	
$^{88}Sr^2$	43.95301	82.56	-18E3
^{44}Ca	43.95550	02.06	-----
^{43}CaH	43.96660	00.146	+3960
$^{132}Ba^3$	43.96837	00.097	+3415
$^{132}Xe^3$	43.96805	26.89	+3502
^{28}SiO	43.97184	91.99	+2690
^{32}SC	43.97207	94.0	+2653
$^{31}P^{13}C$	43.97711	01.107	+2026
$^{26}Mg^{18}O$	43.98175	00.023	+1674
CO_2	43.98983	97.8	+1280
C_2H_4O	44.02621	97.51	+ 622
C_3H_8	44.06260	96.62	+ 410
$^{59}Co^{32}$	44.19989	100.00	
$^{133}Cs^3$	44.30171	100.00	
$^{89}Y^2$	44.45286	100.00	
$^{134}Ba^3$	44.63475	02.42	-----
$^{134}Xe^3$	44.63514	10.44	+11E4
$^{60}Ni^{32}$	44.94808	26.23	-5734
$^{90}Zr^2$	44.95217	51.46	-12E3
^{45}Sc	44.95592	100.00	-----
^{44}CaH	44.96332	02.06	+6075
$^{135}Ba_3$	44.96852	06.59	+3568
^{29}SiO	44.97141	04.69	+2902
^{45}SC	44.97542	01.80	+2305
^{27}AlO	44.98070	00.204	+1814
$^{85}CO_2$	44.99318	01.176	+1207
$^{12}C_2H_5O$	45.03404	97.50	+ 575
$^{136}Ba^3$	45.30146	07.81	-----
$^{136}Ce^3$	45.30236	00.193	+50E3
$^{136}Xe^3$	45.30240	08.87	+48E3
$^{91}Zr^2$	45.45266	11.22	
$^{137}Ba^2$	45.63519	11.32	
$^{92}Zr^2$	45.95234	17.11	-16E4
^{46}Ti	45.95263	08.00	-----
^{46}Ca	45.95369	03.3E3	+43E3
$^{92}Mo^2$	45.95428	15.84	+28E3
^{45}ScH	45.96374	99.985	+4136
^{34}SC	45.96786	04.17	+3009
$^{138}Ba^3$	45.96829	71.66	+2934
^{30}SiO	45.96867	03.08	+2865
$^{138}Ce^3$	45.96868	00.25	+2863
$^{138}La^3$	45.96891	00.089	+2823
$^{28}Si^{18}O$	45.97609	00.188	+1958
$^{23}Na_2$	45.97956	100.00	+1706
$^{14}NO_2$	45.99290	99.15	+1141
C_2H_6O	46.04186	97.49	+ 515
$^{139}La^3$	46.30201	99.911	
$^{93}Nb^2$	46.45283	100.000	
$^{140}Ce^3$	46.63509	88.48	
^{47}Ti	46.95176	07.29	-----
$^{94}Zr^2$	46.95382	17.40	+23E3
$^{94}Mo^2$	46.95297	09.04	+39E3
^{46}TiH	46.96045	08.00	+5403
^{31}PO	46.96862	99.76	+2768
^{35}ClC	46.96885	74.69	+2747
$^{141}Pr^3$	46.96916	100.00	+2698
$^{29}Si^{18}O$	46.97565	00.01	+1961
$^{23}NaC_2$	46.98978	97.80	+1234
$^{15}NO_2$	46.98991	00.36	+1231
$^{63}Cu^{32}$	47.19720	69.09	
$^{142}Nd^3$	47.30249	27.11	-78E3
$^{142}Ce^3$	47.30310	11.07	-----
$^{95}Mo^2$	47.45222	15.72	
$^{143}Nd^3$	47.46653	12.17	
$^{64}Zn^{32}$	47.94686	48.89	-44E3
^{48}Ti	47.94795	73.98	-----
$^{96}Mo^2$	47.95248	16.53	+11E3
^{48}Ca	47.95253	00.185	+10E3
$^{96}Ru^2$	47.9544	05.51	+7434
$^{96}Zr^2$	47.95465	02.80	+7156
^{47}TiH	47.95958	07.29	+4123
^{32}SO	47.96699	94.8	+2518
^{36}SC	47.96709	00.013	+2505
$^{144}Nd^3$	47.96993	23.85	+2181
$^{24}Mg_2$	47.97008	61.94	+2167
$^{144}Sm^3$	47.97055	03.09	+2122
$^{35}Cl^{13}C$	47.97220	00.34	+1977
$^{30}Si^{18}O$	47.97292	00.006	+1914
$^{16}O_3$	47.98473	99.28	+1304
$^{24}MgC_2$	47.98504	76.97	+1294
$^{12}C_4$	48.00000	95.63	+ 921
$^{145}Nd^3$	48.30402	08.30	
$^{97}Mo^2$	48.45311	09.46	
$^{97}C_8$	48.50168	07.25	
$^{146}Nd^3$	48.63756	17.22	-----
$^{65}Cu^{32}$	48.69584	30.91	+ 834
^{49}Ti	48.94787	05.51	-----
$^{98}Mo^2$	48.95299	23.78	+9560
^{48}TiH	48.95577	73.97	+6196
^{37}ClC	48.96590	24.20	+2715
^{49}SO	48.96640	00.80	+2641
$^{49}Mg_2$	48.97088	15.95	+2127
$^{147}Sm^3$	48.97150	14.97	+2071
$^{98}Ru^2$	48.977	01.87	+1680
$^{49}MgC_2$	48.98584	11.63	+1290
$^{49}O_3$	48.98892	00.11	+1192
$^{49}C_4$	49.00336	04.29	+ 882
$^{12}C_4H$	49.00782	95.62	+ 816
$^{148}Sm^3$	49.30481	11.24	-----
$^{148}Nd^3$	49.30549	05.73	+73E3
$^{99}Ru^2$	49.45303	12.72	
$^{149}Sm^3$	49.63893	13.83	
^{50}Ti	49.94479	05.34	-----
^{50}Cr	49.94605	04.31	+40E3
^{50}V	49.94716	00.24	+21E3
$^{100}Ru^2$	49.953	12.62	+6083
$^{100}Mo^2$	49.95325	09.63	+5897
^{49}TiH	49.95569	05.51	+4582
^{34}SO	49.96278	04.21	+2776
$^{50}Mg_2$	49.96763	18.61	+2187
^{37}ClC	49.96926	00.27	+2041
$^{23}NaAl$	49.97132	100.00	+1863
$^{150}Sm^3$	49.97230	07.44	+1815
$^{150}Nd^3$	49.97361	05.62	+1733
$^{50}MgC_2$	49.98259	11.16	+1321
$^{50}O_3$	49.98898	00.61	+1130
$^{12}CF_2$	49.99680	98.89	+ 960
$^{50}C_4$	50.00670	00.072	+ 806
$^{12}C_4H_2$	50.01564	95.61	+ 705
$^{151}Eu^3$	50.30651	47.82	
$^{101}Ru^2$	50.453	17.07	
$^{152}Sm^3$	50.63979	26.72	
$^{152}Gd^3$	50.63981	00.20	
^{51}V	50.94398	99.76	
$^{102}Ru^2$	50.95187	31.61	+6457
$^{102}Pd^2$	50.95243	00.96	+6029
^{50}TiH	50.95261	05.34	+5903
^{50}CrH	50.95367	04.31	+5151
^{39}KC	50.96371	92.07	+2552
^{35}ClO	50.96376	75.35	+2576
$^{24}MgAl$	50.96658	78.70	+2254
$^{28}SiNa$	50.96671	92.21	+2241
$^{51}Mg_2$	50.96843	02.26	+2084
$^{153}Eu^3$	50.9735	52.18	+1726
$^{27}AlC_2$	50.98154	97.80	+1358
$^{19}FO_2$	50.98822	99.52	+1152
$^{13}CF_2$	51.00016	01.11	+ 907
$^{51}C_4$	51.01005	05.4E4	+ 771
C_4H_3	51.02346	95.61	+ 641
$^{154}Gd^3$	51.30698	02.15	-16E4
$^{154}Sm^3$	51.30731	22.71	-----
$^{103}Rh^2$	51.45228	100.00	-----
$^{206}Pb^4$	51.49361	23.6	+1245
$^{155}Gd^3$	51.6409	14.73	-----
$^{69}Ga^{32}$	51.69428	60.4	+ 967
$^{207}Pb^4$	51.74397	22.6	
^{52}Cr	51.94051	83.76	-----
$^{104}Pd^2$	51.95164	10.97	+4667
^{51}VH	51.95180	99.985	+4601
$^{104}Ru^2$	51.95211	18.58	+4478
$^{28}SiMg$	51.96197	72.57	+2420
^{36}SO	51.96200	00.014	+2417
^{40}CaC	51.96259	95.90	+2352
$^{26}Mg_2$	51.96518	01.25	+2105
$^{25}MgAl$	51.96738	10.13	+1933
^{52}KC	51.96706	01.04	+1956
$^{156}Dy^3$	51.971/	00.052	+1704
$^{156}Gd^3$	51.97409	20.47	+1717
$^{28}SiC_2$	51.97693	90.18	+1427
$^{208}Pb^4$	51.99416	52.3	+ 968
$^{12}C_2O$	51.99492	96.48	+ 955
$^{12}C_4H_4$	52.03128	95.60	+ 572

Species	Mass	Abundance	Value
$^{157}Gd^3$	52.3080	15.68	
$^{105}Pd^2$	52.45241	22.23	
$^{158}Dy^3$	52.64134	00.09	
$^{158}Gd^3$	52.6415	24.87	
^{53}Cr	52.94065	09.55	-----
^{52}CrH	52.94833	83.75	+6893
$^{106}Pd^2$	52.95146	27.33	+4897
$^{106}Cd^2$	52.95297	01.215	+4297
^{37}ClO	52.96081	24.41	+2626
^{41}KC	52.96183	06.80	+2500
$^{26}MgAl$	52.96413	11.17	+2255
$^{40}Ca^{13}C$	52.96594	01.07	+2093
$^{159}Tb^3$	52.97496	100.00	+1543
$^{53}SiC_2$	52.97649	06.61	+1477
C_4H_5	53.03910	95.05	+ 538
$^{160}Dy^3$	53.3080	02.294	-50E3
$^{160}Gd^3$	53.30907	21.90	-----
$^{107}Ag^2$	53.45242	51.35	
$^{161}Dy^3$	53.6419	18.88	
^{54}Cr	53.93887	02.38	-73E3
^{54}Fe	53.93961	05.82	
^{53}CrH	53.94847	09.55	+6088
$^{108}Pd^2$	53.95174	26.71	+4445
$^{108}Cd^2$	53.95204	00.875	+4338
^{42}CaC	53.95863	00.63	+2835
$^{27}Al_2$	53.96306	100.00	+2300
$^{41}K^{13}C$	53.96518	00.076	+2109
$^{54}SiC_2$	53.97376	03.12	+1577
$^{162}Dy^3$	53.9752	25.53	+1515
$^{162}Er^3$	53.97624	00.136	+1472
$^{12}C_5$	54.00000	90.44	+ 893
C_4H_6	54.04692	95.57	+ 499
$^{109}Ag^2$	54.45231	48.65	-----
$^{109}Cs^2$	54.50168	09.12	+1103
$^{164}Dy^3$	54.64283	28.18	-----
$^{164}Er^3$	54.64327	01.56	+12E4
$^{74}Ge^{3^2}$	54.69251	36.54	+1100
^{55}Mn	54.93805	100.00	-----
^{54}CrH	54.94699	02.38	+6359
^{54}FeH	54.94743	05.82	+5857
$^{110}Cd^2$	54.95165	12.39	+4040
$^{28}SiAl$	54.95847	92.88	+2990
$^{110}Pd^2$	54.95224	11.81	+3872
^{39}KO	54.95862	92.88	+2671
$^{165}Ho^3$	54.95862	100.00	+2671
^{55}CaC	54.95878	00.151	+2650
$^{31}PC_2$	54.97376	97.80	+1537
$^{23}NaO_2$	54.97960	99.52	+1322
$^{110}Cs^2$	55.00335	00.41	+ 841
$^{12}C_4H_7$	55.05474	95.56	+ 471
$^{166}Er^3$	55.3096	33.41	
$^{111}Cd^2$	55.45214	12.75	
$^{167}Er^3$	55.6435	22.94	
^{56}Fe	55.93494	91.66	-----
^{55}MnH	55.94587	99.985	+5118
$^{112}Cd^2$	55.95153	24.07	+3372
$^{112}Sn^2$	55.9526	00.96	+3167
$^{28}Si_2$	55.95386	85.03	+2956
^{44}CaC	55.95550	02.04	+2788
^{40}CaO	55.95750	96.51	+2479
$^{28}SiAl$	55.95803	04.70	+2422
^{40}KO	55.95891	00.018	+2334
$^{32}SC_2$	55.97207	92.91	+1506
$^{24}MgO_2$	55.97485	78.32	+1400
$^{168}Er^3$	55.9769	27.07	+1333
$^{168}Yb^3$	55.97797	00.135	+1300
C_4H_8	56.06256	95.55	+ 438
$^{169}Tm^3$	56.31145	100.00	
$^{113}In^2$	56.45215	04.28	-71E4
$^{113}Cd^2$	56.45223	12.26	-----
$^{170}Yb^3$	56.645/	03.03	-28E4
$^{170}Er^3$	56.6452	14.88	-----
^{57}Fe	56.93541	02.19	
^{56}FeH	56.94276	91.65	+7746
$^{114}Cd^2$	56.95178	28.86	+3478
$^{114}Sn^2$	56.9520	00.66	+3432
$^{57}Si_2$	56.95342	08.66	+3161
$^{30}SiAl$	56.95530	03.09	+2863
^{45}ScC	56.95592	98.89	+2776
^{41}KO	56.95674	06.86	+2669
$^{44}Ca^{13}C$	56.95835	00.023	+2482
$^{38}K^{18}O$	56.96287	00.19	+2071
$^{57}SC_2$	56.97542	02.82	+1423
$^{25}MgO_2$	56.97566	10.08	+1415
$^{171}Yb^3$	56.979/	14.31	+1306
C_4H_9	57.07038	95.54	+ 422
$^{172}Yb^3$	57.3084/	21.82	
$^{115}Sn^2$	57.45168	00.35	-44E4
$^{115}In^2$	57.45181	95.72	-----
$^{173}Yb^3$	57.646/	16.13	
^{58}Fe	57.93331	00.33	-28E3
^{58}Ni	57.93535	69.18	-----
^{57}FeH	57.94323	02.19	+7352
$^{58}Si_2$	57.95069	05.92	+3777
$^{116}Sn^2$	57.95110	14.30	+3678
$^{116}Cd^2$	57.95250	07.58	+3378
^{46}CaC	57.95369	03.3E3	+3159
^{46}TiC	57.95263	07.91	+3353
^{42}CaO	57.95340	00.64	+3208
$^{40}Ca^{18}O$	57.96202	03.20	+2172
$^{34}SC_2$	57.96786	04.13	+1782
$^{20}MgO_2$	57.97241	11.12	+1564
$^{174}Yb^3$	57.9752/	31.84	+1454
$^{23}Na_2C$	57.97976	98.89	+1305
$^{174}Hf^3$	57.980/	00.18	+1298
$^{175}Lu^3$	58.314/	97.41	
$^{117}Sn^2$	58.45155	07.61	
$^{176}Hf^3$	58.6469	05.20	+88E2
$^{176}Lu^3$	58.6473	02.59	-22E4
$^{176}Yb^3$	58.64757	12.73	-----
^{59}Co	58.93318	100.00	-----
^{58}FeH	58.94113	00.33	+7413
^{58}NiH	58.94317	69.17	+5899
$^{59}Si_2$	58.95025	00.30	+3452
^{28}SiP	58.95069	92.21	+3366
$^{118}Sn^2$	58.95103	24.03	+3302
^{59}TiC	58.95176	07.29	+3172
^{43}CaO	58.95369	00.146	+2873
$^{41}K^{18}O$	58.96099	00.014	+2118
$^{35}ClC_2$	58.96985	73.87	+1652
$^{27}AlO_2$	58.97136	99.52	+1544
$^{177}Hf^3$	59.9809	18.50	+1238
$^{23}NaC_3$	59.98978	96.72	+1041
$^{178}Hf^3$	59.3143	27.14	
$^{119}Sn^2$	59.45158	08.58	
$^{179}Hf^3$	59.6484	13.75	
^{60}Ni	59.93077	26.23	-----
^{59}CoH	59.94100	99.985	+5858
$^{30}Si_2$	59.94752	00.10	+3578
^{60}TiC	59.94795	73.24	+3488
$^{28}S1S$	59.94900	87.60	+3287
^{44}CaO	59.95041	02.06	+3051
$^{135}Ba^{43}$	59.95082	06.59	+2889
$^{120}Sn^2$	59.95110	32.58	+2948
^{120}Te	59.95225	00.089	+2790
^{48}CaC	59.95253	00.183	+2754
$^{28}SiO_2$	59.96676	91.77	+1665
$^{36}SC_2$	59.96709	00.013	+1650
$^{24}Mg_2C$	59.97008	60.57	+1525
$^{180}W^3$	59.9815	00.135	+1181
$^{180}Ta^3$	59.982/	00.012	+1170
$^{180}Hf^3$	59.9820	35.24	+1170
$^{12}CO_3$	59.98473	98.18	+1111
$^{24}Mg_2C_3$	59.98504	76.12	+1105
$^{60}C_5$	60.00000	94.57	+ 866
$^{181}Ta^3$	60.3153	99.988	
$^{136}Ba^{43}$	60.40194	07.81	
$^{121}Sb^2$	60.45186	57.25	
$^{182}W^3$	60.6487	26.41	
$^{137}Ba^{43}$	60.84692	11.32	
^{61}Ni	60.93109	01.19	-----
^{60}NiH	60.93109	26.23	+8124
^{61}TiC	60.94787	06.27	+3631
^{45}ScO	60.95083	99.76	+3087
$^{122}Te^2$	60.95145	04.72	+2993
$^{122}Sn^2$	60.95201	04.72	+2952
$^{37}ClC_2$	60.96590	23.93	+1750
$^{28}SiO_2$	60.96632	04.68	+1730
$^{61}Mg_2C$	60.97088	16.29	+1531
$^{184}W^3$	60.9827	14.40	+1180
$^{13}CO_3$	60.98809	01.10	+1069
$^{61}MgC_3$	60.98584	12.48	+1114
$^{61}C_5$	61.00336	05.30	+ 843
$^{12}C_5H$	61.00782	94.56	+ 794
$^{138}Ba^{43}$	61.29106	71.66	-2429
$^{184}Os^3$	61.315/	00.018	-47E3
$^{184}W^3$	61.3163	30.64	-----
$^{123}Sb^2$	61.45209	42.75	
$^{123}Te^2$	61.4522	00.87	+56E4
$^{185}Re^3$	61.649/	37.07	+ 312
$^{139}La^{43}$	61.73601	99.911	
^{62}Ni	61.92834	03.66	
^{61}NiH	61.93891	01.19	+5859
^{50}CrC	61.94065	04.26	+5031
^{62}TiC	61.94479	05.34	+3765
^{50}VC	61.94716	00.24	+3291
$^{31}P_2$	61.94753	100.00	+3227
^{46}CaO	61.94754	3.3E3	+3225
^{46}TiO	61.94854	07.27	+3066
$^{124}Te^2$	61.95156	04.61	+2667
$^{124}Sn^2$	61.95262	05.94	+2551
$^{124}Xe^2$	61.95306	00.096	+2505
$^{30}ClO_2$	61.96359	03.07	+1757
$^{62}Mg_2C$	61.96763	18.19	+1576
$^{23}Na_2O$	61.97447	99.76	+1343
$^{62}MgC_3$	61.98259	11.25	+1141
$^{180}W^3$	61.9836	28.41	+1121
$^{180}Os^3$	61.984	01.59	+1113
$^{14}NO_3$	61.98780	98.91	+1042
$^{62}C_5$	62.00670	00.119	+ 790
$^{12}C_5H_2$	62.01564	94.55	+ 709
$^{140}Ce^{43}$	62.18012	88.48	
$^{187}Re^3$	62.318/	62.93	-----
$^{187}Os^3$	62.319/	01.64	+62E3
$^{125}Te^2$	62.45231	06.99	
$^{188}Os^3$	62.6523	13.3	
^{63}Cu	62.92959	69.09	-----
^{62}NiH	62.93616	03.66	+9578
^{51}VC	62.94398	98.66	+4373
^{47}TiO	62.94667	07.26	+3684
$^{50}Ti^{13}C$	62.94814	00.059	+3392
$^{50}Cr^{13}C$	62.94940	00.048	+3177
$^{126}Te^2$	62.95194	18.71	+2816
$^{126}Xe^2$	62.95223	00.09	+2780
$^{31}PO_2$	62.96358	99.52	+1850
$^{39}KC_2$	62.96371	91.05	+1844
$^{27}AlC_3$	62.98154	96.72	+1212
$^{189}Os^3$	62.9862/	16.1	+1112
$^{63}C_5$	63.01008	01.3E3	+ 782
C_5H_3	63.02346	94.55	+ 670
$^{190}Os^3$	63.3183	26.4	-----
$^{190}Pt^3$	63.321/	00.013	+24E3
$^{127}I^2$	63.45233	100.00	
$^{191}Ir^3$	63.6545	37.3	-2157
$^{85}Rb^{3^2}$	63.68402	72.15	-----
^{64}Ni	63.92796	01.08	-54E3
^{64}Zn	63.92914	48.89	-----
^{63}CuH	63.93741	69.08	+7730
^{52}CrC	63.94051	82.83	+5623
^{48}TiO	63.94286	73.76	+4660
$^{32}S_2$	63.94414	90.25	+4262
^{48}CaO	63.94744	00.185	+3493
$^{24}Mg^{40}Ca$	63.94790	76.32	+3408
$^{128}Xe^2$	63.95176	01.919	+2826
$^{46}Ti^{18}O$	63.95179	00.016	+2821
$^{128}Te^2$	63.95278	31.79	+2704
$^{32}SO_2$	63.96190	94.54	+1951
$^{40}CaC_2$	63.96259	94.83	+1911
$^{64}KC_2$	63.96706	02.05	+1686
$^{24}Mg_2O$	63.96499	61.79	+1783
$^{28}SiC_3$	63.97693	89.18	+1339
$^{192}Os^3$	63.9974	41.0	+1097
$^{192}Pt^3$	63.9883	00.78	+1081
$^{12}C_4O$	63.99491	95.41	+ 972
C_5H_4	64.03128	94.52	+ 626
$^{193}Ir^3$	64.3222	62.7	
$^{129}Xe^2$	64.45237	26.44	
$^{194}Pt^3$	64.6544/	32.9	
^{65}Cu	64.92778	30.91	-----
^{64}NiH	64.93578	01.08	+8116
^{64}ZnH	64.93696	48.88	+7072
^{53}CrC	64.94065	09.44	+5045
^{49}TiO	64.94278	05.50	+4329
$^{65}S_2$	64.94354	01.44	+4120
$^{52}Cr^{13}C$	64.94386	00.927	+4038
$^{47}Ti^{18}O$	64.95092	00.015	+2808
$^{130}Xe^2$	64.95175	04.08	+2709
$^{130}Ba^2$	64.95312	00.101	+2562
$^{130}Te^2$	64.95348	34.48	+2526
$^{41}KC_2$	64.96183	06.73	+1907
$^{49}Mg_2O$	64.96597	15.91	+1700
$^{65}SiC_3$	64.97649	07.55	+1333
$^{195}Pt^3$	64.9887	33.8	+1066
C_5H_5	65.03910	94.51	+ 583
$^{196}Hg^3$	65.32194	00.146	-13E4
$^{196}Pt^3$	65.3224	25.3	-----
$^{131}Xe^2$	65.45354	21.18	
$^{197}Au^3$	65.6557	100.00	
^{66}Zn	65.92605	27.81	-----
$^{66}Sr^{3^2}$	65.92951	82.56	+19E3
^{65}CuH	65.93560	30.91	+6903
^{54}CrC	65.93887	02.35	+5142
^{54}FeC	65.93961	05.76	+4862
^{50}TiO	65.93970	05.32	+4829
$^{66}S_2$	65.93993	08.02	+4750
^{50}CrO	65.94096	04.30	+4422

Species	Mass	Abundance	Value
^{50}VO	65.94207	00.24	+4115
$^{33}S_2$	65.94293	00.006	+3906
$^{53}Cr^{13}C$	65.94401	00.106	+3673
^{39}KAl	65.94525	93.10	+3434
$^{48}Ti^{18}O$	65.94711	00.151	+3132
$^{132}Xe^2$	65.95208	26.89	+2533
$^{132}Ba^2$	65.95256	00.097	+2487
$^{34}SO_2$	65.95769	04.20	+2024
$^{50}Mg_2O$	65.96254	18.53	+1809
$^{25}Mg_2O$	65.96659	01.03	+1626
$^{27}Al_2C$	65.96308	98.90	+1780
$^{66}SiC_3$	65.97376	03.14	+1381
$^{198}Pt^3$	65.9738	07.21	+1381
$^{198}Hg^3$	65.98892	10.02	+1049
$^{12}C_{11}$	66.00000	88.45	+ 891
C_5H_6	66.04692	94.50	+ 545
$^{199}Hg^3$	66.32274	16.84	
$^{133}Cs^2$	66.45257	100.00	-----
$^{133}C_{11}$	66.50168	10.90	+1353
$^{200}Hg^3$	66.65611	23.13	-----
$^{89}Y^{32}$	66.67929	100.00	+2876
^{67}Zn	66.92714	04.11	
^{66}ZnH	66.93387	27.81	+9945
^{55}MnC	66.93805	98.89	+6134
^{51}VO	66.93839	99.52	+5696
$^{67}S_2$	66.93933	00.064	+5490
$^{28}Si^{29}K$	66.94064	85.85	+4958
$^{54}Cr^{13}C$	66.94222	00.026	+4438
$^{54}Fe^{13}C$	66.94296	00.064	+4231
$^{40}Ca^{27}Al$	66.94440	96.97	+3878
$^{48}Ti^{18}O$	66.94711	00.011	+3570
$^{134}Ba^2$	66.95213	02.42	+2678
$^{134}Xe^2$	66.95271	10.44	+2617
$^{35}ClO_2$	66.95865	75.17	+2124
^{67}CaC	66.95978	00.157	+2115
$^{31}PC_3$	66.97376	96.72	+1434
$^{201}Hg^3$	65.99010	13.22	+1063
$^{134}C_{11}$	67.00336	00.611	+ 878
C_5H_7	67.05474	94.49	+ 525
$^{202}Hg^3$	67.32354	29.80	
$^{135}Ba^2$	67.45278	06.59	
$^{80}Zr^{32}$	67.42825	51.46	
$^{203}Tl^3$	67.6573	29.50	
^{68}Zn	67.92486	18.57	-----
^{56}FeC	67.93194	90.64	+9594
^{67}ZnH	67.93496	04.11	+6725
^{52}CrO	67.93543	83.56	+6426
$^{68}S_2$	67.93573	00.204	+6249
$^{28}SiCa$	67.93979	89.42	+4550
$^{55}Mn^{13}C$	67.94140	01.107	+4107
^{41}KAl	67.94337	06.88	+3670
$^{50}Ti^{18}O$	67.94395	00.011	+3558
$^{50}Cr^{18}O$	67.94521	00.009	+3339
$^{136}Ba^2$	67.95219	07.81	+2485
$^{136}Ce^2$	67.95354	00.193	+2365
$^{136}Xe^2$	67.95360	08.87	+2363
$^{28}Si_2C$	67.95386	84.09	+2342
^{44}CaC	67.95500	02.015	+2254
$^{32}SC_3$	67.97207	91.88	+1439
$^{204}Pb^3$	67.99103	01.48	+1027
$^{204}Hg^3$	67.99116	06.85	+1025
C_5H_8	68.06256	94.48	+ 493
$^{205}Tl^3$	68.3246	70.50	
$^{137}Ba^2$	68.45279	11.32	
$^{206}Pb^3$	68.65815	23.6	
^{69}Ga	68.92571	60.4	-----
$^{92}Zr^{32}$	68.92850	17.11	+25E3
^{68}ZnH	68.93268	18.57	+9889
$^{56}Fe^{13}C$	68.93529	01.015	+7194
^{57}FeC	68.93541	02.166	+7106
^{53}CrO	68.93556	09.53	+6998
$^{69}S_2$	68.93855	02.E4	+5368
$^{138}Ba^2$	68.95244	71.66	+2579
$^{138}Ce^2$	68.95302	00.25	+2524
$^{138}La^2$	68.95337	00.089	+2487
$^{69}Si_2C$	68.95342	09.50	+2487
$^{37}ClO_2$	68.95570	24.35	+2298
$^{45}ScC_2$	68.95592	97.80	+2282
$^{69}SC_3$	68.97542	03.83	+1387
$^{207}Pb^3$	68.99196	22.6	+1040
C_5H_9	69.0704	94.46	+ 476
$^{208}Pb^3$	69.32555	52.3	
$^{139}La^2$	69.45302	99.911	
$^{209}Bi^3$	69.65978	100.00	
^{70}Ge	69.92399	20.52	-----
^{70}Ge	69.92399	20.52	-----
^{70}Zn	69.92534	00.62	+52E3
^{70}FeC	69.93331	00.35	+7503
^{69}GaH	69.93353	60.4	+7330
^{54}CrO	69.93379	02.38	+7135
^{54}FeO	69.93452	05.81	+6540
$^{70}S_2$	69.93495	00.001	+6380
^{56}NiC	69.93535	69.41	+6155
$^{35}Cl_2$	69.93771	56.05	+5037
$^{57}Fe^{13}C$	69.93876	00.024	+4734
$^{52}Cr^{18}O$	69.93967	00.171	+4451
$^{70}Si_2C$	69.95069	05.95	+2619
^{46}CaC	69.95369	00.003	+2354
$^{46}Ti^1C_2$	69.95263	07.82	+2442
$^{27}Al_2O$	69.95799	99.76	+2058
$^{70}SC_3$	69.96786	04.10	+1592
C_5H_{10}	70.0782	94.45	+ 453
Na_2C_2	69.97976	97.80	+1254
$^{94}Zr^{32}$	70.43073	17.40	-----
$^{141}Pr^2$	70.45374	100.00	+3062
^{71}Ga	70.92482	39.6	-----
^{70}GeH	70.93181	20.52	+10E3
^{55}MnO	70.93297	99.76	+8702
^{59}CoC	70.93318	98.89	+8484
$^{44}CaAl$	70.93654	02.06	+6052
$^{58}Fe^{13}C$	70.93666	03.7E3	+5990
$^{58}Ni^{13}C$	70.93870	00.766	+5110
$^{53}Cr^{18}O$	70.93981	00.019	+4735
$^{54}FeOH$	70.94231	05.81	+4055
$^{71}Ti^1C_2$	70.95176	07.31	+2633
$^{39}KO_2$	70.95351	92.65	+2472
$^{142}Nd^2$	70.95374	27.11	+2452
$^{142}Ce^2$	70.95465	11.07	+2378
$^{23}NaO_3$	70.97451	96.72	+1427
$^{23}NaC_4$	70.98978	95.65	+1091
C_5H_{11}	71.08602	94.44	+ 440
$^{143}Nd^2$	71.45479	12.17	
^{72}Ge	71.92159	27.43	-----
^{56}FeO	71.92685	91.44	+14E3
^{60}NiC	71.93077	25.94	+7835
$^{72}SiCa$	71.93193	01.93	+6956
^{71}GaH	71.93264	39.6	+6509
$^{36}S_2$	71.93418	3.0E6	+5713
$^{72}Cl_2$	71.93476	36.97	+5461
$^{59}Co^{13}C$	71.93653	01.107	+4814
$^{54}Cr^{18}O$	71.93303	00.005	+4383
$^{54}Fe^{18}O$	71.93877	00.012	+4179
$^{72}Ti^1C_2$	71.94795	72.50	+2728
$^{28}Si_2O$	71.94877	84.83	+2646
$^{40}CaO_2$	71.95239	96.50	+2335
$^{48}CaC_2$	71.95253	00.181	+2325
$^{144}Nd^2$	71.95490	23.85	+2159
$^{24}Mg_3$	71.95513	48.74	+2144
$^{144}Sm^2$	71.95583	03.09	+2101
$^{24}MgO_3$	71.96977	78.13	+1493
$^{24}Mg_2C_2$	71.97008	60.58	+1493
$^{24}MgC_4$	71.98504	75.27	+1134
$^{72}C_6$	72.00000	93.52	+ 917
$^{145}Nd^2$	72.45603	08.30	-----
$^{145}C_{12}$	72.50168	11.76	+1587
^{73}Ge	72.92334	07.76	-----
^{72}GeH	72.92941	27.43	+12E3
^{57}FeO	72.93032	02.19	+10E3
^{73}NiC	72.93109	01.47	+9409
$^{56}FeOH$	72.93464	91.43	+6453
$^{55}Mn^{18}O$	72.93721	00.204	+5261
$^{73}Ti^1C_2$	72.94787	07.01	+2973
$^{73}Si_2O$	72.94833	08.64	+2918
$^{41}KO_2$	72.95163	06.85	+2578
$^{73}Mg_3$	72.95592	18.82	+2238
$^{146}Nd^2$	72.95653	17.22	+2209
$^{37}ClC_3$	72.96590	23.67	+1713
$^{25}MgO_3$	72.97057	10.06	+1544
$^{73}Mg_2C_2$	72.97088	16.96	+1534
$^{73}MgC_4$	72.98584	13.07	+1167
$^{73}C_6$	73.00336	06.29	+ 911
$^{12}C_6H$	73.00782	93.51	+ 863
$^{147}Sm^2$	73.45725	14.97	
^{74}Ge	73.92100	36.54	-----
^{74}Se	73.92254	00.87	+48E3
^{58}FeO	73.92822	00.33	+10E3
^{74}NiC	73.92834	03.63	+10E3
^{58}NiO	73.93026	69.01	+7983
$^{56}Fe^{18}O$	73.93110	00.187	+7319
^{73}GeH	73.93116	07.76	+7276
$^{37}Cl_2$	73.93181	05.99	+6838
^{39}KCl	73.93256	70.32	+6395
$^{57}FeOH$	73.93814	02.18	+4323
$^{50}CrC_2$	73.94065	04.22	+3762
$^{74}Ti^1C_2$	73.94479	05.34	+3107
$^{58}Si_2O$	73.94560	05.91	+3005
$^{42}CaO_2$	73.94843	00.64	+2695
$^{74}Mg_3$	73.95268	23.18	+2333
$^{148}Sm^2$	73.95721	11.24	+2041
$^{148}Nd^2$	73.95823	05.73	+1986
$^{26}MgO_3$	73.96732	11.09	+1597
$^{74}Mg_2C_2$	73.96763	18.54	+1585
$^{74}MgC_4$	73.98259	11.11	+1200
$^{74}C_6$	74.00670	00.176	+ 863
$^{12}C_6H_2$	74.01564	93.50	+ 781
$^{149}Sm^2$	74.45840	13.83	
^{75}As	74.92171	100.00	-----
^{59}CoO	74.92809	99.76	+12E3
^{74}GeH	74.92882	36.53	+11E3
$^{48}TiAl$	74.92949	73.98	+9630
^{63}CuC	74.92959	68.33	+9506
^{74}SeH	74.93036	00.87	+8661
$^{57}Fe^{18}O$	74.93457	00.004	+5812
$^{51}VC_2$	74.94398	97.56	+3364
$^{75}Mg_3$	74.95347	05.34	+2359
$^{25}Mg_3$	74.95752	00.01	+2092
$^{150}Sm^2$	74.95845	07.44	+2039
$^{43}CaO_2$	74.95858	00.145	+2032
$^{150}Nd^2$	74.96041	05.63	+1936
$^{39}KC_3$	74.96371	90.04	+1784
$^{27}AlO_3$	74.96627	99.28	+1681
$^{27}AlC_4$	74.98154	95.65	+1253
C_6H_3	75.02346	93.48	+ 736
$^{151}Eu^2$	75.45977	47.82	
^{76}Se	75.91928	09.02	-----
^{76}Ge	75.92019	07.76	+38E3
^{60}NiO	75.92568	26.17	+12E3
^{64}NiC	75.92796	01.07	+8746
^{64}ZnC	75.92914	48.35	+7700
^{75}AsH	75.92953	99.985	+7407
^{76}KCl	75.92961	27.98	+7349
$^{63}Cu^{13}C$	75.93292	00.765	+5566
$^{52}CrC_2$	75.94051	81.92	+3576
$^{32}S_2C$	75.94414	89.25	+3054
$^{44}CaO_2$	75.94529	02.05	+2919
$^{76}Mg_3$	75.95023	03.29	+2453
$^{152}Sm^2$	75.95968	26.72	+1879
$^{152}Gd^2$	75.95971	00.20	+1878
$^{28}SiO_3$	75.96166	91.54	+1791
$^{40}CaC_3$	75.96259	93.79	+1753
$^{28}SiC_4$	75.97693	88.19	+1318
$^{12}CO_4$	75.97964	97.94	+1259
$^{12}C_6H_4$	76.03128	93.47	+ 678
$^{153}Eu^2$	76.4603	52.18	
^{77}Se	76.91998	07.58	-----
^{61}NiO	76.92600	01.19	+13E3
^{76}SeH	76.92710	09.02	+11E3
^{65}CuC	76.92778	30.57	+9862
^{76}GeH	76.92801	07.76	+9579
^{65}CuC	76.92778	30.57	+9862
$^{64}Zn^{13}C$	76.93131	00.54	+6789
$^{53}CrC_2$	76.94065	09.34	+3721
$^{52}Cr^{25}C_2$	76.94387	01.83	+3220
$^{45}ScO_2$	76.94752	99.52	+2793
$^{77}Mg_3$	76.95102	00.38	+2478
$^{154}Gd^2$	76.96047	02.15	+1900
$^{154}Sm^2$	76.96097	22.71	+1877
$^{29}SiO_3$	76.96122	04.67	+1865
$^{41}KC_3$	76.96183	06.65	+1838
$^{77}SiC_4$	76.97649	08.46	+1361
$^{13}CO_4$	76.98300	01.10	+1221
$^{12}C_6H_5$	77.03910	93.46	+ 646
$^{232}Th^3$	77.3460	100.00	
$^{155}Gd^2$	77.4614	14.73	
^{78}Se	77.91739	23.52	-----
^{78}Kr	77.92019	00.354	+29E3
^{62}NiO	77.92325	03.64	+13E3
^{66}ZnC	77.92605	27.50	+8997
$^{39}K_2$	77.92742	86.68	+7763
$^{41}K^{37}Cl$	77.92773	01.68	+7536
^{77}SeH	77.92780	07.58	+7485
$^{65}Cu^{13}C$	77.93113	00.34	+5671
$^{78}CrC_2$	77.93887	02.54	+3627
$^{54}FeC_2$	77.93961	05.69	+3507
$^{78}S_2C$	77.93993	07.95	+3457
$^{46}TiO_2$	77.94243	07.96	+3112
$^{78}Mg_3$	77.94777	00.14	+2566
$^{156}Dy^2$	77.957/	00.052	+1967

Species	Mass	%	Value
$^{30}SiO_3$	77.95849	03.07	+1895
$^{42}CaC_3$	77.95863	00.62	+1889
$^{156}Gd^2$	77.95113	20.47	+1781
$^{31}P_2O$	77.96244	99.76	+1730
$^{27}Al_2C_2$	77.96308	97.80	+1705
$^{23}Na_2O_2$	77.96938	97.52	+1499
$^{78}SiC_4$	77.97376	03.16	+1382
$^{14}NO_4$	77.98271	98.67	+1193
$^{12}C_{13}$	78.00000	86.49	+ 943
$^{12}C_6H_6$	78.04692	93.45	+ 602
$^{235}U^3$	78.3476	00.72	
$^{157}Gd^2$	78.4621	15.68	-----
$^{157}C_{13}$	78.50168	12.60	+1982
^{79}Br	78.91839	50.537	-----
$^{52}CrAl$	78.92205	83.76	+22E3
^{63}CuO	78.92451	68.92	+13E3
^{78}SeH	78.92521	23.52	+12E3
^{79}ZnC	78.92714	04.42	+9019
$^{79}K_2$	78.92771	00.022	+8468
$^{65}Zn^{13}C$	78.92941	00.31	+7168
$^{55}MnC_2$	78.93805	97.80	+4014
$^{47}TiO_2$	78.94156	07.25	+3406
$^{31}PO_3$	78.95849	99.28	+1968
$^{79}CaC_3$	78.95878	00.161	+1954
$^{158}Dy^2$	78.96200	00.09	+1810
$^{159}Gd^2$	78.9622	24.87	+1801
$^{31}PC_4$	78.97376	95.65	+1425
$^{158}C^2_{13}$	79.00335	00.847	+ 929
C_6H_7	79.05474	93.44	+ 579
$^{235}U^3$	79.3495	99.274	-----
$^{159}Tb^2$	79.46244	100.000	+ 703
^{80}Se	79.91647	49.82	-----
^{90}Kr	79.91659	02.27	+67E4
$^{28}Si^{52}Cr$	79.91744	77.24	+82E3
^{64}NiO	79.92287	01.08	+13E3
^{64}ZnO	79.92405	48.77	+11E3
^{80}ZnC	79.92486	18.41	+9525
$^{40}Ca_2$	79.92517	93.45	+9186
$^{80}K_2$	79.92554	12.81	+8811
$H^{79}Br$	79.92622	50.52	+8197
$^{5}FeC_2$	79.93194	89.64	+5166
$^{55}Mn^{23}C_2$	79.94141	02.19	+3204
$^{48}TiO_2$	79.93775	73.62	+3755
$^{32}S_2O$	79.93905	90.03	+3539
$^{48}CaO_2$	79.94233	00.184	+3090
$^{28}Si_2C_2$	79.95386	83.16	+2137
$^{44}CaC_3$	79.95500	01.99	+2074
$^{32}SO_3$	79.95602	94.32	+1981
$^{24}Mg_2O_2$	79.95990	61.64	+1840
$^{160}Dy^2$	79.9620	02.294	+1755
$^{160}Gd^2$	79.96361	21.90	+1695
$^{32}SC_4$	79.97207	92.77	+1437
$^{12}C_6H_8$	80.06256	93.43	+ 547
$^{161}Dy^2$	80.4629	18.88	
^{81}Br	80.91642	49.463	-----
$^{54}FeAl$	80.92115	05.82	+17E3
^{65}CuO	80.92269	30.84	+13E3
^{80}SeH	80.92429	49.81	+10E3
^{69}GaC	80.92571	59.73	+8710
$^{81}FeC_2$	80.93541	04.15	+4261
$^{49}TiO_2$	80.93767	05.48	+3808
$^{27}Al_3$	80.94462	100.00	+2869
$^{81}Si_2C_2$	80.95342	12.12	+2187
$^{49}Mg_2O_2$	80.96070	15.87	+1827
$^{162}Dy^2$	80.9628	25.53	+1745
$^{162}Er^2$	80.96436	00.136	+1689
$^{12}C_6H_9$	81.07038	93.41	+ 526
$^{163}Dy^2$	81.4639	24.97	
^{82}Kr	81.91345	11.56	-26E3
$^{28}Si^{54}Fe$	81.91654	05.37	-91E4
^{82}Se	81.91663	09.19	-----
$^{55}MnAl$	81.91959	100.00	+28E3
^{66}ZnO	81.92096	27.74	+19E3
$^{82}Ca_2$	81.92121	01.24	+18E3
$^{41}K_2$	81.92366	00.47	+12E3
^{70}GeC	81.92399	20.29	+11E3
$H^{81}Br$	81.92425	49.44	+11E3
^{70}ZnC	81.92534	00.63	+9405
$^{69}Ga^{13}C$	81.92906	00.669	+6590
$^{82}FeC_2$	81.93331	00.368	+4911
$^{50}TiO_2$	81.93459	05.31	+4561
$^{58}NiC_2$	81.93535	67.66	+4376
$^{66}S_2O$	81.93484	08.00	+4498
$^{50}CrO_2$	81.93585	04.29	+4262
$^{82}Si_2C_2$	81.95069	05.98	+2405
$^{34}SO_3$	81.95261	04.19	+2277
$^{46}TiC_3$	81.95263	07.74	+2275
$^{50}Mg_2O_2$	81.95745	18.53	+2007
$^{164}Dy^2$	81.9643	28.18	+1718
$^{164}Er^2$	81.9640	01.56	+1697
$^{34}SC_4$	81.96786	04.04	+1599
$^{165}Ho^2$	82.46455	100.00	
$^{56}FeAl$	82.91348	91.66	-15E4
^{83}Kr	82.91405	11.55	-----
$^{28}Si^{55}Mn$	82.91498	92.21	+89E3
^{67}ZnO	82.92205	04.10	+10E3
$^{83}Ca_2$	82.92278	00.28	+9498
^{82}SeH	82.92445	09.19	+7973
^{71}GaC	82.92482	39.16	+7699
$^{59}CoC_2$	82.93318	97.80	+4334
$^{51}VO_2$	82.93379	99.28	+4202
$^{83}TiC_3$	82.95176	07.31	+2199
$^{35}ClO_3$	82.95355	74.98	+2099
$^{166}Er^2$	82.9644	33.41	+1647
$^{35}ClC_4$	82.96885	72.24	+1513
$^{167}Er^2$	83.4653	22.94	
$^{28}Si^{56}Fe$	83.90887	84.52	-19E3
^{84}Kr	83.91325	56.90	-48E3
^{84}Sr	83.91325	00.56	-----
$^{57}FeAl$	83.91695	02.19	+23E3
$^{84}Ca_2$	83.91808	03.98	+17E3
^{68}ZnO	83.91977	18.53	+13E3
^{72}GeC	83.92159	27.13	+10E3
$^{52}CrO_2$	83.93031	83.36	+4919
$^{28}Si_3$	83.93079	78.40	+4784
$^{60}NiC_2$	83.93078	25.65	+4787
$^{84}TiC_3$	83.94795	71.79	+2418
$^{48}CaC_3$	83.95253	00.18	+2136
$^{168}Er^2$	83.9654	27.07	+1609
$^{168}Yb^2$	83.96595	00.135	+1563
$^{12}C_7$	84.00000	92.48	+ 967
$^{169}Tm^2$	84.46717	100.00	-----
$^{169}C^2_{14}$	84.50168	13.42	+2448
$^{85}SiFe$	84.90843	06.33	-24E3
^{85}Rb	84.91202	72.15	-----
$^{58}FeAl$	84.91485	00.33	+30E3
^{84}SrH	84.92107	00.56	+9383
^{85}GeC	84.92334	07.97	+7501
$^{85}Si_3$	84.93035	11.99	+4632
$^{53}CrO_2$	84.93045	09.50	+4607
$^{85}NiC_2$	84.93109	01.73	+4453
$^{85}TiC_3$	84.94787	07.73	+2369
$^{37}ClC_4$	84.96590	02.40	+1576
$^{170}Yb^2$	84.967/	03.03	+1544
$^{170}Er^2$	84.9678	14.88	+1522
$^{85}C_7$	85.00335	07.25	+ 930
$^{12}C_7H$	85.00782	92.49	+ 886
$^{171}Yb^2$	85.468/	14.31	
^{86}Sr	85.90935	09.86	-----
^{86}Kr	85.91079	17.37	+60E3
$^{54}Fe^{32}S$	85.91168	05.53	+37E3
^{70}GeO	85.91890	60.3	+8996
^{85}RbH	85.91984	72.14	+8190
^{70}ZnO	85.92025	00.62	+7882
^{86}GeC	85.92100	36.23	+7374
^{74}SeC	85.92254	00.87	+6513
$^{86}Si_3$	85.92762	08.49	+4702
$^{62}NiC_2$	85.92834	03.58	+4524
$^{54}CrO_2$	85.92867	02.37	+4446
$^{54}FeO_2$	85.92941	05.79	+4283
$^{86}TiC_3$	85.94479	05.34	+2424
$^{50}CrC_3$	85.94065	04.17	+2341
$^{27}Al_2O_2$	85.95289	99.52	+1973
$^{172}Yb^2$	85.9626	21.82	+1612
$^{31}P_2C_2$	85.96753	97.80	+1477
$^{86}C_7$	86.00670	00.244	+ 882
$^{12}C_7H_2$	86.01564	92.48	+ 808
$^{173}Yb^2$	86.469/	16.13	
^{87}Sr	86.90899	07.02	-----
^{87}Rb	86.90930	27.85	+28E4
^{86}SrH	86.91717	09.86	+11E3
^{71}GaO	86.91973	39.50	+8092
^{75}AsC	86.92171	98.89	+6832
$^{74}Ge^{13}C$	86.92436	00.40	+5654
$^{55}MnO_2$	86.92785	99.52	+4608
$^{87}Si_3$	86.92719	00.81	+4773
$^{39}KO_3$	86.94841	92.43	+2205
$^{174}Yb^2$	86.9628/	31.84	+1615
$^{39}KC_4$	86.96371	89.05	+1588
$^{174}Hf^2$	86.970/	00.18	+1425
$^{12}C_7H_3$	87.02346	92.47	+ 759
$^{175}Lu^2$	87.471/	97.41	
$^{56}Fe^{32}S$	87.90401	87.08	-44E3
^{88}Sr	87.90601	82.56	-----
$^{40}Ca^{48}Ti$	87.91081	71.74	+18E3
^{72}GeO	87.91650	27.37	+8372
$^{88}Ca_2$	87.91653	00.40	+8348
^{87}SrH	87.91681	07.02	+8139
^{87}RbH	87.91712	27.85	+7912
^{76}SeC	87.91928	08.92	+6624
^{76}GeC	87.92129	07.67	+5753
$^{56}FeO_2$	87.92174	91.22	+5585
$^{28}Si_3$	87.92445	00.28	+4767
$^{64}ZnC_2$	87.92914	47.81	+3801
$^{64}NiC_2$	87.92796	01.06	+4003
$^{52}CrC_3$	87.94051	81.01	+2547
$^{28}Si_2O_2$	87.94368	84.62	+2333
$^{32}S_2C_2$	87.94414	88.26	+2305
$^{40}CaO_3$	87.94759	96.27	+2114
$^{40}CaC_4$	87.96286	92.75	+1546
$^{24}MgO_4$	87.96468	77.94	+1498
$^{176}Hf^2$	87.9704	05.20	+1365
$^{176}Lu^2$	87.9710	02.59	+1352
$^{176}Yb^2$	87.97136	12.73	+1345
$^{12}C_7H_4$	88.03128	92.46	+ 702
$^{177}Hf^2$	88.4713	18.50	
^{89}Y	88.90572	100.00	-----
$^{57}Fe^{32}S$	88.90748	02.08	+51E3
^{88}SrH	88.91383	82.55	+11E3
^{73}GeO	88.91825	07.73	+7095
^{89}SeC	88.91998	07.60	+6235
$^{89}Si_3$	88.92401	00.013	+4861
$^{57}FeO_2$	88.92521	02.18	+4562
$^{65}CuC_2$	88.92778	30.23	+4030
$^{89}CrC_3$	88.94065	11.96	+2545
$^{89}Si_2O_2$	88.94324	08.62	+2370
$^{41}KO_3$	88.94563	06.83	+2228
$^{41}KC_4$	88.96183	06.58	+1584
$^{25}MgO_4$	88.96548	10.03	+1488
$^{178}Hf^2$	88.9715	27.14	+1352
$^{12}C_7H_5$	89.03910	92.45	+ 667
$^{179}Hf^2$	89.4726	13.75	
^{90}Zr	89.90433	51.46	-----
$^{45}Sc_2$	89.91184	100.00	+12E3
^{89}YH	89.91354	99.985	+9762
^{74}GeO	89.91591	36.38	+7764
^{90}SeC	89.91739	23.32	+6884
^{74}SeO	89.91745	00.87	+6852
$^{58}FeO_2$	89.92311	00.32	+4787
$^{58}NiO_2$	89.92515	68.85	+4318
$^{66}ZnC_2$	89.92605	27.20	+4139
$^{39}K_2C$	89.92742	85.72	+3894
$^{90}CrC_3$	89.93887	02.61	+2602
$^{54}FeC_3$	89.93961	05.63	+2548
$^{90}Si_2O_2$	89.94051	05.89	+2485
$^{26}MgO_4$	89.96223	11.06	+1553
$^{27}Al_2C_3$	89.96308	96.72	+1530
$^{180}W^2$	89.9723	00.135	+1323
$^{180}Ta^2$	89.973/	00.012	+1309
$^{180}Hf^2$	89.9731	35.24	+1307
$^{12}C_{15}$	90.00000	84.58	+ 940
$^{12}C_7H_6$	90.04692	92.43	+ 631
$^{181}Ta^2$	90.4729	99.988	-----
$^{181}C_{15}$	90.50168	14.22	+3144
^{91}Zr	90.90532	11.22	-----
^{90}ZrH	90.91215	51.45	+13E3
^{75}AsO	90.91662	99.76	+8045
^{79}BrC	90.91839	49.98	+6955
$^{59}CoC_2$	90.92298	97.80	+5148
$^{91}ZnC_2$	90.92714	04.63	+4166
$^{55}MnC_2$	90.93805	96.72	+2777
$^{54}Fe^{37}C_3$	90.94297	00.189	+2414
$^{27}AlO_4$	90.96114	99.04	+1629
$^{182}W^2$	90.9730	26.41	+1343
$^{182}C_{15}$	91.00335	01.115	+ 927
$^{183}W^2$	91.4741	14.40	
$^{40}Ca^{52}Cr$	91.90337	81.22	-71E3
^{92}Zr	91.90467	17.11	-----
$^{46}Ti_2$	91.90526	00.64	+16E4
^{92}Mo	91.90855	15.84	+24E3
^{91}ZrH	91.91314	11.22	+11E3
^{76}SeO	91.91419	09.01	+9654
^{76}GeO	91.91620	07.75	+7971
^{80}SeC	91.91647	49.27	+7789
$^{60}NiO_2$	91.92057	26.10	+5780
$^{92}ZnC_2$	91.92486	18.25	+4552

Species	Mass	Abund.	Value
$^{40}Ca_2C$	91.92517	92.42	+4483
$^{44}CaO_3$	91.94023	02.05	+2584
$^{28}Si_2C_3$	91.95386	82.24	+1968
$^{44}CaC_4$	91.95550	01.97	+1808
$^{28}SiO_4$	91.95657	91.32	+1771
$^{184}Os^2$	91.973	00.018	+1345
$^{184}W^2$	91.9745	30.64	+1316
$^{185}Re^2$	92.474	37.07	
^{93}Nb	92.90566	100.00	-----
^{92}ZrH	92.91249	17.11	+14E3
^{77}SeO	92.91489	07.57	+10E3
^{81}BrC	92.91642	48.92	+8634
$^{61}NiO_2$	92.92089	01.18	+6100
$^{69}GaC_2$	92.92571	59.07	+4634
$^{93}FeC_3$	92.93530	05.10	+3134
$^{27}Al_3C$	92.94462	98.89	+2385
$^{31}P_3$	92.95129	100.00	+2036
$^{93}Si_2C_3$	92.95342	11.14	+1945
$^{28}SiO_4$	92.95613	04.65	+1841
$^{186}W^2$	92.9754	28.41	+1332
$^{186}Os^2$	92.976/	01.59	+1321
$^{187}Re^2$	93.477/	62.93	-----
$^{187}Os^2$	93.478/	01.64	+94E3
$^{94}Ti_2$	93.90058	12.37	-13E3
$^{40}CaFe$	93.90247	05.64	-18E3
^{94}Mo	93.90594	09.04	-55E3
^{94}Zr	93.90764	17.40	-----
^{78}SeO	93.91230	23.47	+20E3
^{93}NbH	93.91348	99.985	+16E3
^{82}SeC	93.91663	09.09	+10E3
$^{62}NiO_2$	93.91814	03.64	+8944
$^{39}K_2O$	93.92233	86.47	+6393
$^{70}GeC_2$	93.92399	20.07	+5744
$^{94}FeC_3$	93.93331	00.39	+3658
$^{58}NiC_3$	93.93535	66.91	+3389
$^{46}TiO_3$	93.93735	07.94	+3160
$^{94}Si_2C_3$	93.95069	06.01	+2181
$^{46}TiC_4$	93.95263	07.65	+2087
$^{30}SiO_4$	93.95340	03.06	+2052
$^{31}P_2O_2$	93.95735	99.52	+1890
$^{188}Os^2$	93.9785/	13.3	+1325
$^{189}Os^2$	94.4793/	16.1	
$^{95}Ti_2$	94.89970	11.67	-20E3
$^{40}CaMn$	94.90091	95.97	-27E3
^{95}Mo	94.90444	15.72	-22E3
^{78}BrO	94.91330	50.42	+11E3
^{94}MoH	94.91376	09.04	+10E3
^{94}ZrH	94.91546	17.40	+8612
$^{40}CaFe$	95.89480	88.88	-6614
$^{96}Ti_2$	95.89589	56.38	-7152
^{96}Mo	95.90496	16.53	-22E3
^{96}Ru	95.9087	05.51	-16E4
^{96}Zr	95.90930	02.80	-----
^{80}SeO	95.91138	49.71	+46E3
^{95}MoH	95.91226	15.72	+32E3
^{84}SrC	95.91325	00.55	+24E3
$^{32}S_3$	95.91622	85.74	+14E3
$^{64}NiO_2$	95.91776	01.07	+11E3
$^{64}ZnO_2$	95.91896	48.65	+9928
$^{40}Ca_2O$	95.92008	93.22	+8897
$^{72}GeC_2$	95.92159	26.83	+7804
$^{60}NiC_3$	95.93077	25.40	+4467
$^{28}Si_3C$	95.93079	77.53	+4463
$^{48}TiO_3$	95.93265	73.45	+4107
$^{32}S_2O_2$	95.93396	89.82	+3889
$^{96}TiC_4$	95.94795	71.07	+2481
$^{32}SO_4$	95.95173	94.09	+2260
$^{192}Os^2$	95.9811/	41.0	+1336
$^{192}Pt^2$	95.9824/	00.78	+1312
$^{12}C_8$	96.00000	91.46	+1057
$^{193}Ir^2$	96.4834/	62.7	-----
$^{193}C_{16}^2$	96.50168	14.99	+5278
$^{97}Ti_2$	96.89581	08.93	-9318
$^{40}CaFe$	96.89827	02.12	-12E3
^{97}Mo	96.90621	09.46	-----
^{81}BrO	96.91133	49.34	+19E3
^{85}RbC	96.91202	71.35	+17E3
^{96}MoH	96.91278	16.53	+15E3
$^{97}S_3$	96.91561	02.06	+10E3
^{96}ZrH	96.91712	02.80	+8882
$^{65}CuO_2$	96.91758	30.76	+8523
$^{97}GeC_2$	96.92334	08.19	+5657
$^{97}Si_3C$	96.93035	12.73	+4014
$^{97}NiC_3$	96.93109	02.00	+3895
$^{49}TiO_3$	96.93257	05.47	+3676
$^{27}Al_3O$	96.93953	99.76	+2908
$^{97}TiC_4$	96.94787	08.44	+2326
$^{194}Pt^2$	96.9817/	32.9	+1284
$^{194}C_{16}^2$	97.00335	01.26	+ 998
$^{97}C_8$	97.00335	08.20	+ 998
$^{12}C_8H$	97.00782	91.45	+ 954
$^{195}Pt^2$	97.4831/	33.8	
$^{98}Ti_2$	97.89273	08.20	-7389
^{98}Mo	97.90598	23.78	-----
^{86}SrC	97.90935	09.75	+29E3
^{82}SeO	97.91154	09.18	+18E3
^{97}MoH	97.91403	09.46	+12E3
$^{98}S_3$	97.91201	11.43	+16E3
$^{85}Rb^{13}C$	97.91545	00.80	+10E3
$^{66}ZnO_2$	97.91585	27.68	+9920
$^{98}GeC_2$	97.92100	35.91	+6518
$^{74}SeC_2$	97.92254	00.85	+5912
$^{98}Si_3C$	97.92762	08.53	+4524
$^{98}NiC_3$	97.92834	03.58	+4379
$^{50}TiO_3$	97.92952	05.30	+4159
$^{50}CrO_3$	97.93078	04.28	+3948
$^{98}TiC_4$	97.94479	05.35	+2523
$^{50}CrC_4$	97.94605	04.12	+2443
$^{34}SO_4$	97.94752	04.18	+2357
^{98}Ru	97.954/	01.87	+2039
$^{31}P_2C_3$	97.96753	96.72	+1591
$^{196}Hg^2$	97.98291	00.146	+1273
$^{196}Pt^2$	97.9836	25.3	+1261
$^{98}C_8$	98.00670	00.321	+ 972
$^{12}C_8H_2$	98.01564	91.44	+ 893
$^{197}Au^2$	98.4836	100.00	
$^{99}Ti_2$	98.89266	00.59	-7387
^{99}Ru	98.90605	12.72	-----
^{99}SrC	98.90899	07.05	+34E3
^{87}RbC	98.90930	27.54	+30E3
^{99}MoH	98.91380	23.78	+13E3
$^{67}ZnO_2$	98.91694	04.09	+9082
$^{75}AsC_2$	98.92171	97.80	+6316
$^{63}CuC_3$	98.92959	66.82	+4202
$^{35}ClO_4$	98.94849	74.80	+2330
$^{198}Pt^2$	98.9823	07.21	+1297
$^{198}Hg^2$	98.98337	10.02	+1279
C_8H_3	99.02346	91.43	+ 842
$^{199}Hg^2$	99.48411	16.84	
$^{50}Ti_2$	99.88958	00.29	-5905
$^{50}Cr_2$	99.89210	00.19	-6938
^{100}Ru	99.905/	12.62	-67E3
^{100}SrC	99.90610	81.73	-25E4
^{100}Mo	99.90651	09.63	-----
^{84}SrO	99.90816	00.56	+60E3
$^{87}Rb^{13}C$	99.91265	27.54	+16E3
$^{68}ZnO_2$	99.91456	18.48	+12E3
$^{76}SeC_2$	99.91928	08.82	+7824
$^{76}GeC_2$	99.92129	07.59	+6760
$^{52}CrO_3$	99.92521	83.16	+5340
$^{28}Si_3O$	99.92570	78.21	+5203
$^{39}K_2O$	99.92742	84.77	+4778
$^{64}NiC_3$	99.92796	01.04	+4655
$^{64}ZnC_3$	99.92914	47.28	+4415
$^{52}CrC_4$	99.94051	80.11	+2938
$^{32}S_2C_3$	99.94414	87.29	+2654
$^{200}Hg^2$	99.98416	23.13	+1286
C_8H_4	100.03128	91.42	+ 801
$^{201}Hg^2$	100.48515	13.22	
^{101}Ru	100.905/	17.07	-----
^{89}YC	100.90572	98.89	+14E4
^{85}RbO	100.90693	71.98	+52E3
$^{86}Sr^{13}C$	100.90945	00.914	+23E3
^{100}MoH	100.91433	09.63	+11E3
$^{69}GaO_2$	100.91551	60.11	+9601
$^{101}SeC_2$	100.91998	07.61	+6736
$^{101}Si_3O$	100.92526	11.96	+4981
$^{53}CrO_3$	100.92538	09.48	+4951
$^{65}CuC_3$	100.92773	29.89	+4430
$^{101}CrC_4$	100.94065	12.72	+2830
$^{202}Hg^2$	100.98531	29.80	+1256
C_8H_5	101.03910	91.42	+ 752
$^{135}Ba^{32}$	101.17916	06.59	
$^{203}Tl^2$	101.4860	29.50	
$^{102}Cr_2$	101.88656	07.22	-5935
$^{51}V_2$	101.88795	99.52	-6458
^{102}Ru	101.90373	31.61	-----
^{86}SrO	101.90426	09.84	+19E4
^{90}ZrC	101.90433	50.89	+17E4
^{102}Pd	101.90486	00.96	+90E3
$^{89}Y^{13}C$	101.90907	01.107	+19E3
$^{70}GeO_2$	101.91379	20.42	+10E3
$^{102}SeC_2$	101.91739	23.15	+7460
$^{102}Si_3O$	101.92253	08.47	+5420
$^{54}CrO_3$	101.92360	02.36	+5129
$^{54}FeO_3$	101.92434	05.78	+4944
$^{66}ZnC_3$	101.92605	26.90	+4566
$^{136}Ba^{32}$	101.92828	07.81	+4151
$^{102}CrC_4$	101.93877	02.69	+2900
$^{54}FeC_4$	101.93961	05.57	+2840
$^{27}Al_3O$	101.94781	99.28	+2312
$^{204}Pb^2$	101.98654	01.48	+1231
$^{204}Hg^2$	101.98674	06.85	+1228
$^{12}C_{17}$	102.00000	82.72	+1059
C_8H_6	102.04692	91.41	+ 712
$^{205}Tl^2$	102.4869	70.50	
$^{205}C_{17}^2$	102.50168	15.75	+6934
$^{137}Ba^{32}$	102.67918	11.32	
$^{103}Cr_2$	102.88670	00.82	-5765
^{87}SrO	102.90390	07.00	-16E4
^{87}RbO	102.90421	27.78	-30E4
^{103}Rh	102.90455	100.00	-----
^{103}ZrC	102.90532	11.67	+13E4
$^{71}GaO_2$	102.91462	39.41	+10E3
$^{79}BrC_2$	102.91839	49.42	+7435
$^{55}MnO_3$	102.92278	99.28	+5645
$^{103}ZnC_3$	102.92714	04.88	+4555
$^{55}MnC_4$	102.93805	95.65	+3072
$^{39}KO_4$	102.94335	92.21	+2652
$^{206}Pb^2$	102.98722	23.6	+1245
C_8H_7	103.05474	91.40	+ 685
$^{207}Pb^2$	103.48794	22.6	-----
$^{138}Ba^{32}$	103.42866	71.66	1746
$^{104}Cr_2$	103.88102	70.37	-4668
^{88}SrO	103.90101	82.36	-46E3
^{104}Pd	103.90328	10.97	-----
^{104}Ru	103.90422	18.58	+11E4
^{104}ZrC	103.90467	17.04	+75E3
^{92}MoC	103.90855	15.66	+20E3
$^{72}GeO_2$	103.91139	27.30	+13E3
$^{80}SeC_2$	103.91647	48.72	+7877
$^{56}FeO_3$	103.91664	91.00	+7777
$^{104}ZnC_3$	103.92486	18.09	+4815
$^{40}Ca_2C_2$	103.92517	91.39	+4747
$^{56}FeC_4$	103.93194	87.67	+3625
$^{28}Si_2O_3$	103.93859	84.42	+2943
$^{40}CaO_4$	103.94250	96.04	+2649
$^{208}Pb^2$	103.98833	52.3	+1222
C_8H_8	104.06256	91.39	+ 652
$^{139}La^{32}$	104.17952	99.911	
$^{209}Bi^2$	104.48967	100.000	
$^{105}Cr_2$	104.88159	16.00	-4516
^{89}YO	104.90063	99.76	-25E3
^{105}Pd	104.90482	22.23	-----
^{93}NbC	104.90566	98.89	+13E4
$^{73}GeO_2$	104.91314	07.72	+13E3
$^{81}BrC_2$	104.91642	48.37	+9044
$^{57}FeO_3$	104.92011	02.17	+6861
$^{140}Ce^{32}$	104.92896	88.48	+4346
$^{105}FeC_4$	104.93541	06.02	+3429
$^{57}Si_2O_3$	104.93815	08.50	+3147
$^{27}Al_3C_2$	104.94462	97.80	+2636
$^{106}Cr_2$	105.87938	04.90	-4501
^{90}ZrO	105.89924	51.34	-29E3
^{106}Pd	105.90291	27.33	-----

Species	Mass	Abund.	Δ
^{106}Pd	105.90291	27.33	-----
^{106}Cd	105.90593	01.215	+35E3
^{94}MoC	105.90594	09.94	+35E3
^{94}ZrC	105.90764	17.21	+22E3
$^{93}Nb^{13}C$	105.90901	01.107	+17E3
$^{106}FeC_4$	105.93331	00.41	+3484
$^{58}NiC_4$	105.93525	66.17	+3265
$^{58}Si_2O_3$	105.93542	05.88	+3258
$^{107}Cr_2$	106.87592	00.46	-4224
^{91}ZrO	106.90023	11.20	-23E3
^{107}MoC	106.90444	10.68	-27E4
^{107}Ag	106.90483	51.35	-----
$^{94}Zr^{13}C$	106.91099	00.193	+17E3
$^{75}AsO_2$	106.91151	99.52	+16E3
$^{54}Cr_2$	107.87774	00.06	-4194
$^{54}Fe_2$	107.87922	00.34	-4450
^{92}ZrO	107.89958	17.07	-28E3
^{92}MoO	107.90346	15.80	-10E6
^{108}Pd	107.90347	26.71	-----
^{108}Cd	107.90407	00.875	+18E4
^{108}MoC	107.90496	16.47	+72E3
^{96}RuC	107.9087	05.45	+21E3
$^{76}SeO_2$	107.90910	08.98	+19E3
^{96}ZrC	107.90930	02.77	+19E3
$^{76}GeO_2$	107.91111	07.72	+14E3
$^{84}SrC_2$	107.91325	00.55	+11E3
$^{27}Al_4$	107.92613	100.00	+4762
$^{60}NiC_4$	107.93077	25.09	+3953
$^{28}Si_3C_2$	107.93079	76.67	+3950
$^{44}CaO_4$	107.93514	02.04	+3411
$^{12}C_9$	108.00000	90.44	+1118
$^{217}C^2_{18}$	108.50168	16.50	
^{93}NbO	108.90057	99.76	-27E3
^{109}Ag	108.90461	48.65	-----
^{109}MoC	108.90621	09.54	+68E3
$^{77}SeO_2$	108.90980	07.54	+21E3
$^{85}RbC_2$	108.91202	70.56	+15E3
$^{96}Zr^{13}C$	108.91265	00.031	+14E3
$^{109}Si_3C_2$	108.93035	13.50	+4231
$^{109}C_9$	109.00336	09.12	+1103
$^{110}Fe_2$	109.87155	10.67	-3463
$^{55}Mn_2$	109.87611	100.00	-4044
^{94}MoO	109.90085	09.02	-45E3
^{94}ZrO	109.90255	17.36	-15E4
^{110}Cd	109.90329	12.39	-----
^{110}Pd	109.90447	11.81	+93E3
^{110}MoC	109.90598	23.62	+41E3
$^{78}SeO_2$	109.90721	23.42	+28E3
$^{86}SrC_2$	109.90935	09.64	+18E3
$^{39}K_2O_2$	109.91724	86.26	+7878
$^{110}Si_3C_2$	109.92763	08.55	+4515
$^{46}TiO_4$	109.93227	07.92	+3792
$^{31}P_2O_3$	109.95226	99.28	+2244
^{98}RuC	109.954/	01.85	+2167
$^{110}C_9$	110.00670	00.409	+1063
$^{111}Fe_2$	110.87502	00.26	-3790
^{95}MoO	110.89935	10.73	-23E3
^{111}Cd	110.90428	12.75	-----
^{99}RuC	110.90605	12.58	+63E3
$^{79}BrO_2$	110.90819	50.29	+28E3
$^{111}SrC_2$	110.90899	07.09	+24E3
$^{87}RbC_2$	110.90930	27.24	+22E3
$^{63}CuO_3$	110.91432	68.59	+11E3
$^{63}CuC_4$	110.92959	68.08	+4382
$^{47}TiO_4$	110.93140	06.97	+4089
$^{111}C_9$	111.01008	00.011	+1048
$^{112}Fe_2$	111.86388	84.06	-2856
$^{112}Fe_2$	111.87292	00.04	-3713
^{96}MoO	111.89987	16.49	-35E3
^{112}Cd	111.90306	24.07	-----
^{96}RuO	111.90361	05.50	+20E4
^{96}ZrO	111.90421	02.79	+97E3
^{112}RuC	111.905	12.62	+58E3
^{112}Sn	111.9051	00.96	+55E3
$^{112}SrC_2$	111.9061	80.89	+37E3
$^{80}SeO_2$	111.90629	49.36	+35E3
^{100}MoC	111.90651	09.52	+32E3
$^{28}Si_4$	111.90772	72.30	+24E3
$^{40}Ca_2O_2$	111.91554	93.58	+8967
$^{48}TiO_4$	111.92759	73.27	+4562
$^{64}ZnC_4$	111.92796	46.76	+4494
$^{32}S_2O_3$	111.92887	89.60	+4336

Species	Mass	Abund.	Δ
$^{113}Fe_2$	112.86735	04.02	-3056
^{97}MoO	112.90112	09.46	-36E3
^{113}In	112.90430	04.28	-----
^{113}Cd	112.90446	12.26	+71E4
^{113}RuC	112.905	17.02	+16E4
$^{89}YC_2$	112.90572	97.80	+80E3
$^{81}BrO_2$	112.90622	49.22	+59E3
$^{65}CuO_3$	112.91251	30.69	+14E3
$^{49}TiO_4$	112.92751	05.46	+4867
$^{65}CuC_4$	112.92778	29.56	+4809
$^{27}Al_3O_2$	112.93444	99.52	+3746
$^{114}Fe_2$	113.86525	00.66	-2974
$^{57}Fe_2$	113.87082	00.05	-3481
^{98}MoO	113.90089	23.72	-43E3
^{114}Cd	113.90355	28.86	-----
^{114}RuC	113.90373	31.45	+63E4
^{114}Sn	113.9039	00.66	+33E4
$^{90}ZrC_2$	113.90433	50.33	+15E4
^{102}PdC	113.90486	00.95	+87E3
$^{82}SeO_2$	113.90645	09.17	+39E3
$^{50}TiO_4$	113.92443	05.29	+5455
$^{50}CrO_4$	113.92569	04.27	+5145
$^{66}ZnC_4$	113.92605	26.60	+5062
^{98}RuO	113.949/	01.87	+2452
$^{12}C^2_{18}$	114.00000	80.89	+1181
^{99}RuO	114.90096	12.69	-43E3
^{115}Sn	114.90335	00.35	-44E4
^{115}In	114.90361	95.72	-----
^{103}RhC	114.90455	98.89	+12E4
$^{115}ZrC_2$	114.90532	12.10	+67E3
$^{90}Zr^{25}C_2$	114.90769	01.13	+28E3
$^{58}Ni_2$	115.87070	47.86	-3681
$^{58}Fe_2$	115.86662	00.001	-3258
$^{84}SrO_2$	115.90305	00.56	-14E4
^{100}RuO	115.900	12.59	-53E3
^{100}MoO	115.90142	09.61	-15E4
^{116}Sn	115.90219	14.30	-----
^{104}PdC	115.90328	10.85	+11E4
^{104}RuC	115.90422	18.37	+57E3
$^{116}ZrC_2$	115.90467	16.98	+47E3
^{116}CuO	115.90499	07.58	+41E3
$^{92}MoC_2$	115.90855	15.49	+18E3
$^{52}CrO_4$	115.92015	82.96	+6453
$^{28}Si_3O_2$	115.92061	78.02	+6298
$^{116}ZnC_4$	115.92486	17.94	+5113
$^{40}Ca_2C_3$	115.92517	90.38	+5044
$^{232}Th_2$	116.0190	100.00	+1185
$^{39}K_3$	116.89113	80.70	-9766
^{101}RuO	116.9000	17.03	-38E3
$^{85}RbO_2$	116.90182	71.80	-91E3
^{117}Sn	116.90310	07.61	-----
^{117}PdC	116.90482	22.10	+68E3
$^{93}NbC_2$	116.90566	97.80	+46E3
$^{85}Si_3O_2$	116.92017	11.93	+6848
$^{53}CrO_4$	116.92029	09.46	+6801
$^{27}Al_3C_2$	116.94462	96.72	+2816
$^{234}U_2$	117.0202	05.6E3	+ 998
$^{235}U_2$	117.5214	00.72	
$^{118}Ni_2$	117.86612	36.29	-3281
$^{59}Co_2$	117.86636	100.00	-3304
^{102}RuO	117.89864	31.53	-35E3
$^{86}SrO_2$	117.89915	09.81	-41E3
^{102}PdO	117.89977	00.96	-52E3
^{118}Sn	117.90205	24.03	-----
^{118}PdC	117.90291	27.28	+14E4
^{106}CdC	117.90593	01.20	+30E3
$^{94}MoC_2$	117.90594	08.84	+30E3
$^{94}ZrC_2$	117.90764	17.02	+21E3
$^{86}Si_3O_2$	117.91744	08.45	+7661
$^{54}CrO_4$	117.91851	02.36	+7163
$^{54}FeO_4$	117.91925	05.76	+6855
$^{119}Ni_2$	118.86644	01.65	-3239
$^{119}K_3$	118.88925	17.89	-8554
$^{87}SrO_2$	118.89879	06.99	-27E3
$^{87}RbO_2$	118.89912	27.72	-30E3
^{103}RhO	118.89946	99.76	-32E3
^{119}Sn	118.90315	08.58	-----
$^{119}MoC_2$	118.90444	10.72	+92E3
^{107}AgC	118.90483	50.78	+71E3
$^{55}MnO_4$	118.91769	99.04	+8178
$^{238}U_2$	119.0243	99.274	+ 981
$^{120}Ni_2$	119.86154	11.94	-2949

Species	Mass	Abund.	Δ
$^{40}Ca_3$	119.88775	90.34	-8303
$^{88}SrO_2$	119.89592	82.16	-19E3
^{104}PdO	119.89819	10.94	-30E3
^{104}RuO	119.89914	18.53	-39E3
^{120}Sn	119.90220	32.85	-----
^{108}PdC	119.90347	26.41	+94E3
^{108}CdC	119.90407	00.865	+64E3
^{120}Te	119.90449	00.089	+52E3
$^{120}MoC_2$	119.90496	16.41	+43E3
$^{96}RuC_2$	119.9087	05.39	+18E3
$^{96}ZrC_2$	119.90930	02.74	+17E3
$^{56}FeO_4$	119.91158	90.78	+13E3
$^{27}Al_4C$	119.92616	98.89	+5004
$^{28}Si_3C_3$	119.93079	75.83	+4194
$^{12}C_{10}$	120.00000	89.44	+1226
$^{121}Ni_2$	120.86186	00.62	-2889
$^{121}K_3$	120.88737	01.32	-7399
$^{89}YO_2$	120.89552	99.52	-15E3
^{105}PdO	120.89973	22.18	-30E3
^{121}Sb	120.90371	57.25	-----
^{109}AgC	120.90461	48.11	+13E4
$^{121}MoC_2$	120.90621	09.61	+48E3
$^{57}FeO_4$	120.91505	02.17	+11E3
$^{121}Si_3C_3$	120.93035	14.14	+4538
$^{121}C_{10}$	121.00335	10.02	+1213
$^{122}Ni_2$	121.85911	03.41	-2784
$^{110}Fe_2C$	121.87155	10.55	-3888
$^{55}Mn_2C$	121.87610	98.89	-4549
$^{122}Ca_3$	121.88435	01.79	-6572
$^{90}ZrO_2$	121.89413	51.21	-14E3
^{105}PdO	121.89782	27.26	-24E3
^{106}CdO	121.90084	01.21	-59E3
^{122}Te	121.90290	02.46	-----
^{110}CdC	121.90329	12.25	+31E4
^{110}PdC	121.90447	11.68	+78E3
$^{122}MoC_2$	121.90598	23.47	+40E3
$^{86}SrC_2$	121.90935	09.54	+19E3
$^{58}FeO_4$	121.91295	00.33	+12E3
$^{58}NiO_4$	121.91499	68.52	+10E3
$^{122}Si_3C_3$	121.92762	08.60	+4931
$^{98}RuC_2$	121.954/	01.83	+2386
$^{122}C_{10}$	122.00670	00.505	+1174
$^{123}Ca_3$	122.88678	00.41	-7063
$^{91}ZrO_2$	122.89512	11.17	-14E3
^{107}AgO	122.89974	51.23	-28E3
^{123}Sb	122.90418	42.75	-----
^{123}CdC	122.90428	12.75	+12E5
^{123}Te	122.9043	00.87	+10E5
$^{123}RuC_2$	122.90605	12.48	+66E3
$^{123}SrC_3$	122.90899	07.11	+26E3
$^{87}RbC_3$	122.90930	26.94	+24E3
$^{123}C_{10}$	123.01008	00.015	+116E
$^{124}Ni_2$	123.85873	00.57	-2664
$^{58}Fe_2C$	123.86388	83.09	-3000
$^{124}Ca_3$	123.88072	05.79	-5053
$^{92}ZrO_2$	123.89447	17.03	-12E3
$^{92}MoO_2$	123.89835	15.76	-18E3
^{108}PdO	123.89838	26.55	-18E3
^{108}CdO	123.89898	00.871	-20E3
^{124}CdC	123.90306	23.94	-57E3
^{124}Te	123.90312	04.61	-59E3
$^{124}RuC_2$	123.905	12.62	-50E4
^{124}Sn	123.90524	05.94	-----
$^{124}SrC_3$	123.90610	80.08	+14E4
^{124}Xe	123.90612	00.01	+14E4
$^{100}MoC_2$	123.90651	09.42	+98E3
$^{60}NiO_4$	123.91041	25.98	+24E3
$^{27}Al_4O$	123.92107	99.76	+7827
$^{113}Fe_2C$	124.86735	03.97	-3351
$^{93}NbO_2$	124.89546	99.52	-14E3
^{108}AgO	124.89952	48.53	-25E3
^{113}InC	124.9043	04.23	-39E4
^{125}CdC	124.90446	12.39	-78E4
^{125}Te	124.90462	06.99	-----
$^{125}RuC_2$	124.905	16.97	+33E4
$^{63}Cu_2$	125.85918	47.73	-2817
$^{126}Fe_2C$	125.86525	00.65	-3260
$^{94}MoO_2$	125.89574	09.00	-16E3
$^{94}ZrO_2$	125.89744	17.32	-20E3
^{110}CdO	125.89820	12.36	-22E3
^{110}PdO	125.89938	11.78	-28E3
^{126}CdC	125.90355	28.68	-39E4
$^{126}RuC_2$	125.90373	31.28	-90E4
^{126}Te	125.90387	18.71	-----

Species	Mass	Abundance	Value
$^{126}\mathrm{Te}$	125.90387	18.71	-----
$^{114}\mathrm{SnC}$	125.90390	00.65	+40E5
$^{90}\mathrm{ZrC_3}$	125.90433	49.77	+27E4
$^{126}\mathrm{Xe}$	125.90445	00.09	+22E4
$^{102}\mathrm{PdC_2}$	125.90486	00.94	+13E4
$^{252}\mathrm{C_{21}}$	126.00000	79.14	+1310
$^{95}\mathrm{MoO_2}$	126.89424	10.71	-12E3
$^{111}\mathrm{CdO}$	126.89919	12.72	-23E3
$^{115}\mathrm{SnC}$	126.90335	00.35	-27E3
$^{115}\mathrm{InC}$	126.90361	94.66	-12E4
$^{103}\mathrm{RhC_2}$	126.90425	97.80	-72E5
$^{127}\mathrm{I}$	126.90466	100.00	-----
$^{127}\mathrm{ZrC_3}$	126.90532	12.52	+19E4
$^{63}\mathrm{CuO_4}$	126.90923	68.43	+28E3
$^{254}\mathrm{C_{21}}$	127.00335	02.085	+1286
$^{64}\mathrm{Zn_2}$	127.85592	23.91	-2527
$^{128}\mathrm{Cu_2}$	127.85737	42.71	-2655
$^{56}\mathrm{Fe_2O}$	127.85879	83.81	-2735
$^{128}\mathrm{Ca_3}$	127.88053	00.64	-5112
$^{52}\mathrm{Cr_2C_2}$	127.88102	68.61	-5214
$^{96}\mathrm{MoO_2}$	127.89476	16.45	-12E3
$^{96}\mathrm{RuO_2}$	127.8985	05.48	-18E3
$^{112}\mathrm{CdO}$	127.89797	23.95	-17E3
$^{96}\mathrm{ZrO_2}$	127.89910	02.79	-20E3
$^{112}\mathrm{SnO}$	127.9000	00.96	-23E3
$^{116}\mathrm{SnC}$	127.90219	14.14	-38E3
$^{104}\mathrm{PdC_2}$	127.90328	10.73	-56E3
$^{128}\mathrm{Xe}$	127.90351	01.919	-63E3
$^{104}\mathrm{RuC_2}$	127.90422	18.17	-96E3
$^{128}\mathrm{ZrC_3}$	127.90467	16.91	-15E4
$^{116}\mathrm{CdC}$	127.90499	07.50	-23E4
$^{128}\mathrm{Te}$	127.90555	31.79	-----
$^{40}\mathrm{Ca_2O_3}$	127.90990	92.78	+29E3
$^{97}\mathrm{MoO_2}$	128.89601	09.41	-15E3
$^{113}\mathrm{InO}$	128.89921	04.27	-23E3
$^{113}\mathrm{CdO}$	128.89937	12.23	-24E3
$^{129}\mathrm{SnC}$	128.9031	07.69	-79E3
$^{129}\mathrm{Xe}$	128.90474	26.44	-----
$^{129}\mathrm{PdC_2}$	128.90482	21.98	+16E5
$^{93}\mathrm{NbC_3}$	128.90764	96.72	+45E3
$^{27}\mathrm{Al_3O_3}$	128.92935	99.28	+5233
$^{130}\mathrm{Zn_2}$	129.85401	27.20	-2452
$^{65}\mathrm{Cu_2}$	129.85556	09.55	-2528
$^{98}\mathrm{MoO_2}$	129.89578	23.67	-12E3
$^{114}\mathrm{CdO}$	129.89846	28.79	-15E3
$^{114}\mathrm{SnO}$	129.8988	00.66	-15E3
$^{130}\mathrm{SnC}$	129.90205	23.92	-27E3
$^{130}\mathrm{PdC_2}$	129.90291	27.22	-32E3
$^{130}\mathrm{Xe}$	129.90350	04.08	-37E3
$^{106}\mathrm{CdC_2}$	129.90593	01.19	-13E4
$^{130}\mathrm{Ba}$	129.90623	00.101	-18E4
$^{130}\mathrm{Te}$	129.90695	34.48	-----
$^{94}\mathrm{ZrC_3}$	129.90764	16.83	+19E4
$^{131}\mathrm{Zn_2}$	130.85510	04.02	-2619
$^{99}\mathrm{RuO_2}$	130.89585	12.66	-14E3
$^{115}\mathrm{SnO}$	130.89826	00.35	-19E3
$^{115}\mathrm{InO}$	130.89852	95.49	-20E3
$^{131}\mathrm{SnC}$	130.90315	08.76	-68E3
$^{107}\mathrm{AgC_2}$	130.90483	50.22	-52E4
$^{131}\mathrm{Xe}$	130.90508	21.13	-----
$^{132}\mathrm{Zn_2}$	131.85282	25.89	-2522
$^{40}\mathrm{Ca_3C}$	131.88776	89.34	-7598
$^{100}\mathrm{RuO_2}$	131.8948	12.56	-13E3
$^{100}\mathrm{MoO_2}$	131.89631	09.58	-15E3
$^{116}\mathrm{SnO}$	131.89710	14.27	-16E3
$^{116}\mathrm{CdO}$	131.89990	07.54	-25E3
$^{132}\mathrm{SnC}$	131.90220	32.58	-45E3
$^{108}\mathrm{PdC_2}$	131.90347	26.12	-80E3
$^{108}\mathrm{CdC_2}$	131.90407	00.86	-13E4
$^{132}\mathrm{Xe}$	131.90416	26.89	-14E4
$^{120}\mathrm{TeC}$	131.90449	00.087	-21E4
$^{132}\mathrm{Ba}$	131.90512	00.097	-----
$^{28}\mathrm{Si_3O_3}$	131.91552	77.83	+13E3
$^{27}\mathrm{Al_4C_2}$	131.92616	97.80	+6269
$^{12}\mathrm{C_{11}}$	132.00000	88.45	+1390
$^{133}\mathrm{Zn_2}$	132.85318	02.29	-2558
$^{101}\mathrm{RuO_2}$	132.8948	16.99	-13E3
$^{85}\mathrm{RbO_3}$	132.8968	71.63	-16E3
$^{117}\mathrm{SnO}$	132.89801	07.59	-19E3
$^{133}\mathrm{Cs}$	132.90513	100.00	-----
$^{109}\mathrm{AgC_2}$	132.90461	47.58	+26E4
$^{85}\mathrm{RbC_4}$	132.91202	69.01	+19E3
$^{85}\mathrm{Si_3O_3}$	132.91508	11.90	+13E3
$^{133}\mathrm{C_{11}}$	133.00335	10.90	+1353
$^{134}\mathrm{TeO_2}$	133.85091	10.50	-2510
$^{87}\mathrm{Zn_2}$	133.85428	00.17	-2680
$^{110}\mathrm{Fe_2C_2}$	133.87155	10.43	-4094
$^{55}\mathrm{Mn_2C_2}$	133.87610	97.80	-4757
$^{102}\mathrm{RuO_2}$	133.89353	31.46	-13E3
$^{86}\mathrm{SrO_3}$	133.89410	09.79	-13E3
$^{118}\mathrm{SnO}$	133.89696	23.97	-18E3
$^{122}\mathrm{TeC}$	133.9029	02.43	-99E3
$^{110}\mathrm{CdC_2}$	133.90329	12.12	-14E4
$^{122}\mathrm{SnC}$	133.90346	04.67	-17E4
$^{134}\mathrm{Ba}$	133.90425	02.42	-----
$^{110}\mathrm{PdC_2}$	133.90447	11.55	+61E4
$^{86}\mathrm{SrC_4}$	133.90935	09.43	+26E3
$^{86}\mathrm{Si_3O_3}$	133.91235	08.43	+17E3
$^{134}\mathrm{C_{11}}$	134.00670	00.611	+1307
$^{135}\mathrm{Zn_2}$	134.85200	01.53	-2519
$^{87}\mathrm{SrO_3}$	134.89372	06.97	-11E3
$^{87}\mathrm{RbO_3}$	134.89403	27.65	-12E3
$^{103}\mathrm{RhO_2}$	134.89435	99.52	-12E3
$^{119}\mathrm{SnO}$	134.89806	08.56	-18E3
$^{123}\mathrm{SbC}$	134.90418	42.28	-98E3
$^{135}\mathrm{CdC_2}$	134.90428	12.86	-11E4
$^{135}\mathrm{Ba}$	134.90555	06.59	-----
$^{27}\mathrm{Al_5}$	134.90770	100.00	+63E3
$^{68}\mathrm{Zn_2}$	135.84972	03.45	-2487
$^{112}\mathrm{Fe_2C_2}$	135.86388	82.20	-3356
$^{40}\mathrm{Ca_3O}$	135.88267	90.12	-6263
$^{88}\mathrm{SrO_3}$	135.89083	81.96	-10E3
$^{104}\mathrm{PdO_2}$	135.89308	10.92	-12E3
$^{104}\mathrm{RuO_2}$	135.89402	18.49	-13E3
$^{120}\mathrm{SnO}$	135.89711	32.77	-19E3
$^{120}\mathrm{TeO}$	135.89940	00.089	-27E3
$^{124}\mathrm{TeC}$	135.89898	04.56	-25E3
$^{136}\mathrm{CdC_2}$	135.90306	23.82	-10E4
$^{136}\mathrm{Ba}$	135.90437	07.81	-----
$^{112}\mathrm{SnC_2}$	135.9051	00.94	+19E4
$^{124}\mathrm{SnC}$	135.90524	05.87	+16E4
$^{136}\mathrm{SrC_4}$	135.90610	79.26	+79E3
$^{136}\mathrm{Ce}$	135.90707	00.193	+50E3
$^{136}\mathrm{Xe}$	135.90721	08.87	+48E3
$^{137}\mathrm{Fe_2C_2}$	136.86735	05.77	-3582
$^{89}\mathrm{YO_3}$	136.89042	99.28	-9037
$^{105}\mathrm{PdO_2}$	136.89462	22.12	-13E3
$^{121}\mathrm{SbO}$	136.89862	57.11	-20E3
$^{113}\mathrm{InC_2}$	136.90430	04.19	-11E4
$^{137}\mathrm{CdC_2}$	136.90446	12.52	-12E4
$^{137}\mathrm{TeC}$	136.90462	06.96	-14E4
$^{137}\mathrm{Ba}$	136.90557	11.32	-----
$^{69}\mathrm{Ga_2}$	137.85142	36.48	-2580
$^{90}\mathrm{ZrO_3}$	137.88906	51.09	-8717
$^{106}\mathrm{PdO_2}$	137.89271	27.20	-12E3
$^{106}\mathrm{CdO_2}$	137.89573	01.21	-15E3
$^{122}\mathrm{TeO}$	137.89781	02.45	-20E3
$^{122}\mathrm{SnO}$	137.89837	04.71	-21E3
$^{125}\mathrm{CdC_2}$	137.90355	28.49	-10E4
$^{128}\mathrm{TeC}$	137.90387	18.58	-14E4
$^{114}\mathrm{SnC_2}$	137.9039	00.65	-14E4
$^{90}\mathrm{ZrC_4}$	137.90433	49.22	-25E4
$^{138}\mathrm{Ba}$	137.90488	71.66	-----
$^{138}\mathrm{Ce}$	137.90603	00.25	+12E4
$^{138}\mathrm{La}$	137.90674	00.089	+74E3
$^{91}\mathrm{ZrO_3}$	138.89002	11.14	-8676
$^{107}\mathrm{AgO_2}$	138.89463	51.10	-12E3
$^{123}\mathrm{SbO}$	138.89909	42.65	-20E3
$^{123}\mathrm{TeO}$	138.8992	00.87	-20E3
$^{139}\mathrm{SnC_2}$	138.90335	00.35	-52E3
$^{115}\mathrm{InC_2}$	138.90361	93.61	-57E3
$^{127}\mathrm{IC}$	138.90466	98.89	-10E4
$^{139}\mathrm{ZrC_4}$	138.90532	12.94	-20E4
$^{139}\mathrm{La}$	138.90603	99.911	-----
$^{138}\mathrm{BaH}$	138.91270	71.65	+20E3
$^{70}\mathrm{Ge_2}$	139.84798	04.21	-2442
$^{140}\mathrm{Ga_2}$	139.85053	47.84	-2555
$^{140}\mathrm{Ti_3}$	139.85321	01.42	-2687
$^{28}\mathrm{Si_5}$	139.88465	66.66	-6733
$^{92}\mathrm{ZrO_3}$	139.88940	16.09	-8810
$^{108}\mathrm{PdO_2}$	139.89327	26.58	-12E3
$^{124}\mathrm{TeO}$	139.89803	04.58	-19E3
$^{124}\mathrm{SnO}$	139.90015	05.93	-27E3
$^{116}\mathrm{SnC_2}$	139.90219	13.99	-45E3
$^{140}\mathrm{ZrC_4}$	139.90467	16.84	-23E4
$^{116}\mathrm{CdC_2}$	139.90499	07.41	-48E4
$^{140}\mathrm{Ce}$	139.90528	88.48	-----
$^{128}\mathrm{TeC}$	139.90555	31.44	+52E4
$^{139}\mathrm{LaH}$	139.91385	99.90	+16E3
$^{27}\mathrm{Al_4O_2}$	139.91598	99.52	+13E3
$^{141}\mathrm{Ti_3}$	140.85234	02.63	-2555
$^{93}\mathrm{NbO_3}$	140.89039	99.28	-2250
$^{109}\mathrm{AgO_2}$	140.89441	48.42	-11E3
$^{125}\mathrm{TeO}$	140.89953	06.96	-18E3
$^{141}\mathrm{SnC_2}$	140.9031	07.75	-32E3
$^{128}\mathrm{TeC}$	140.90555	31.44	-73E3
$^{93}\mathrm{NbC_4}$	140.90566	95.65	-77E3
$^{141}\mathrm{Pr}$	140.90748	100.00	-----
$^{140}\mathrm{CeH}$	140.91310	88.47	+25E3
$^{142}\mathrm{Ge_2}$	141.84558	11.23	-2227
$^{142}\mathrm{Ti_3}$	141.84853	14.51	-2335
$^{71}\mathrm{Ga_2}$	141.84964	15.68	-2379
$^{110}\mathrm{Fe_2O_2}$	141.86137	10.62	-2961
$^{55}\mathrm{Mn_2O_2}$	141.86592	99.52	-3271
$^{107}\mathrm{AgCl}$	141.87368	38.78	-3984
$^{94}\mathrm{ZrO_3}$	141.89237	17.27	-8382
$^{110}\mathrm{CdO_2}$	141.89309	12.33	-8754
$^{110}\mathrm{PdO_2}$	141.89427	11.75	-9442
$^{126}\mathrm{TeO}$	141.89878	18.66	-14E3
$^{142}\mathrm{SnC_2}$	141.90205	23.67	-20E3
$^{130}\mathrm{BaC}$	141.90623	00.100	-46E3
$^{130}\mathrm{TeC}$	141.90695	34.10	-60E3
$^{142}\mathrm{Nd}$	141.90748	27.11	-78E3
$^{94}\mathrm{ZrC_4}$	141.90764	16.64	-86E3
$^{142}\mathrm{Ce}$	141.90930	11.07	-----
$^{127}\mathrm{IO}$	142.89957	99.76	-14E3
$^{143}\mathrm{SnC_2}$	142.90315	08.92	-22E3
$^{143}\mathrm{Nd}$	142.90958	12.17	-----
$^{142}\mathrm{NdH}$	142.91530	27.11	+25E3
$^{142}\mathrm{CeH}$	142.91712	11.07	+19E3
$^{72}\mathrm{Ge_2}$	143.84318	07.52	-2160
$^{144}\mathrm{Ti_3}$	143.84385	44.17	-2182
$^{144}\mathrm{Ge_2}$	143.84499	22.51	-2220
$^{56}\mathrm{Fe_2O_2}$	143.85370	83.61	-2565
$^{109}\mathrm{AgCl}$	143.87346	12.57	-3683
$^{40}\mathrm{Ca_3C_2}$	143.88776	88.35	-6529
$^{112}\mathrm{CdO_2}$	143.89286	23.95	-8495
$^{128}\mathrm{TeO}$	143.90046	31.70	-15E3
$^{144}\mathrm{SnC_2}$	143.9022	32.32	-19E3
$^{132}\mathrm{BaC}$	143.90512	00.096	-31E3
$^{144}\mathrm{Nd}$	143.90980	23.85	-----
$^{144}\mathrm{Sm}$	143.91165	03.09	+78E3
$^{27}\mathrm{Al_4C_3}$	143.92616	96.72	+8800
$^{12}\mathrm{C_{12}}$	144.00000	87.46	+1595
$^{145}\mathrm{Ti_3}$	144.84377	10.78	-2122
$^{145}\mathrm{Ge_2}$	144.84493	04.15	-2159
$^{113}\mathrm{InO_2}$	144.89410	04.26	-8069
$^{113}\mathrm{CdO_2}$	144.87426	12.20	-8141
$^{121}\mathrm{SbC_2}$	144.90371	55.99	-17E3
$^{133}\mathrm{CsC}$	144.90513	98.89	-21E3
$^{145}\mathrm{Nd}$	144.91206	08.30	-----
$^{145}\mathrm{C_{12}}$	145.00335	11.76	+1587
$^{146}\mathrm{Ti_3}$	145.84069	09.64	-2027
$^{146}\mathrm{Ge_2}$	145.84259	23.83	-2081
$^{108}\mathrm{AgCl}$	145.87051	11.90	-3459
$^{114}\mathrm{CdO_2}$	145.89335	28.72	-7545
$^{130}\mathrm{BaO}$	145.90114	00.101	-13E3
$^{130}\mathrm{TeO}$	145.90186	34.30	-14E3
$^{122}\mathrm{TeC_2}$	145.9029	02.41	-15E3
$^{122}\mathrm{SnC_2}$	145.90346	04.62	-16E3
$^{134}\mathrm{BaC}$	145.90425	02.39	-17E3
$^{146}\mathrm{Nd}$	145.91269	17.22	-----
$^{146}\mathrm{C_{12}}$	146.00670	00.725	+1552
$^{147}\mathrm{Ti_3}$	146.84061	01.39	-1989
$^{147}\mathrm{Ge_2}$	146.84434	05.67	-2094
$^{115}\mathrm{InO_2}$	146.89341	95.26	-6969
$^{123}\mathrm{SbC_2}$	146.90418	41.81	-14E3
$^{135}\mathrm{BaC}$	146.90555	06.55	-16E3
$^{134}\mathrm{Ba^{13}C}$	146.90760	00.026	-21E3
$^{27}\mathrm{Al_5C}$	146.90770	98.89	-22E3
$^{147}\mathrm{Sm}$	146.91449	14.97	-----
$^{147}\mathrm{C_{12}}$	147.01008	00.027	+1537
$^{148}\mathrm{Ti_3}$	147.83752	00.68	-1874
$^{148}\mathrm{Ge_2}$	147.84200	17.61	-1967
$^{56}\mathrm{Fe_2C_2}$	147.86388	81.26	-2813
$^{116}\mathrm{SnO_2}$	147.89199	14.23	-6045
$^{116}\mathrm{CdO_2}$	147.89479	07.54	-6826
$^{124}\mathrm{TeC_2}$	147.89898	00.189	-8462
$^{132}\mathrm{BaO}$	147.90003	00.097	-9000
$^{136}\mathrm{BaC}$	147.90437	07.79	-12E3
$^{135}\mathrm{Ba^{13}C}$	147.90891	00.07	-20E3
$^{124}\mathrm{SnC_2}$	147.90524	05.81	-13E3
$^{136}\mathrm{CeC}$	147.90707	00.191	-16E3
$^{148}\mathrm{Sm}$	147.91442	11.24	-73E3
$^{148}\mathrm{Nd}$	147.91646	05.73	-----

Species	Mass	Abundance	Value
$^{149}Ge_2$	148.84463	01.20	-2063
$^{85}RbO_4$	148.89170	71.46	-5933
$^{117}SnO_2$	148.89290	07.57	-6230
^{133}CsO	148.90004	99.76	-8885
$^{149}TeC_2$	148.90462	06.94	-12E3
^{149}BaC	148.90557	11.28	-13E3
^{149}BaC	148.90772	00.086	-16E3
^{149}Sm	148.91680	13.83	-----
$^{150}Ge_2$	149.84229	05.67	-1909
$^{75}As_2$	149.84342	100.00	-1937
$^{80}SrO_4$	149.88899	09.77	-4712
^{134}BaO	149.89916	02.35	-6921
$^{150}TeC_2$	149.90387	18.45	-8845
^{150}BaC	149.90489	71.00	-9405
^{138}CeC	149.90603	00.25	-10E3
^{138}LaC	149.90674	00.088	-11E3
^{150}Sm	149.91690	07.44	-38E3
^{150}Nd	149.92082	05.62	-----
$^{87}SrO_4$	150.88863	06.95	-4883
$^{87}RbO_4$	150.88894	27.58	-4932
$^{119}SnO_2$	150.89295	08.54	-5676
^{135}BaO	150.90046	06.57	-7909
$^{27}Al_5O$	150.90261	99.76	-8914
$^{127}IC_2$	150.90466	97.80	-10E3
^{151}BaC	150.90824	00.79	-13E3
^{151}Eu	150.91954	47.82	-----
$^{152}Cr_3$	151.83261	00.47	-1751
$^{152}Se_2$	151.83856	01.22	-1880
$^{40}Ca_3O_2$	151.87758	89.91	-3636
$^{88}SrO_4$	151.88574	81.77	-4519
$^{120}SnO_2$	151.89200	32.69	-5553
^{136}BaO	151.89928	07.79	-7566
^{140}CeC	151.90528	87.50	-11E3
$^{128}TeC_2$	151.90555	31.09	-11E3
^{152}LaC	151.90938	01.106	-15E3
^{152}Sm	151.91936	26.72	-----
^{152}Gd	151.91943	00.20	+20E5
$^{153}Se_2$	152.83926	01.37	-1880
$^{89}YO_4$	152.88536	99.04	-4339
$^{121}SbO_2$	152.89351	56.97	-5645
^{137}BaO	152.90048	11.29	-7600
^{141}PrC	152.90748	98.89	-12E3
^{153}CeC	152.90863	00.979	-13E3
^{153}Eu	152.9206	52.18	-----
$^{154}Cr_3$	153.82707	09.07	-1623
$^{154}Se_2$	153.83667	05.68	-1805
$^{90}ZrO_4$	153.88397	50.97	-4055
$^{122}TeO_2$	153.8927	02.45	-5266
$^{122}SnO_2$	153.8933	04.70	-5376
^{138}BaO	153.89979	71.49	-6952
^{138}LaO	153.90165	00.089	-7590
^{138}CeO	153.90094	00.25	-7333
$^{130}BaC_2$	153.90623	00.099	-9804
$^{130}TeC_2$	153.90695	33.72	-10E3
^{142}NdC	153.90748	26.81	-11E3
^{142}CeC	153.9093	10.95	-12E3
^{154}Gd	153.92094	02.15	-16E4
^{154}Sm	153.92193	22.71	-----
$^{155}Cr_3$	154.82721	02.07	-1622
$^{155}Se_2$	154.83737	03.56	-1816
$^{91}ZrO_4$	154.88496	11.11	-4105
$^{123}SbO_2$	154.89398	42.54	-5394
^{139}LaO	154.90094	99.67	-7120
^{155}NdC	154.90958	12.30	-12E3
^{155}CeC	154.91265	00.123	-15E3
^{155}Gd	154.9227	14.73	-----
$^{156}Cr_3$	155.82153	59.40	-1548
$^{156}Se_2$	155.83575	14.68	-1802
$^{92}ZrO_4$	155.88431	16.95	-4108
$^{40}Ca_3C_3$	155.88776	87.37	-4519
$^{124}TeO_2$	155.88878	04.59	-4657
$^{124}SnO_2$	155.89504	05.91	-5728
$^{132}BaC_2$	155.90512	00.095	-9097
^{156}NdC	155.9098	23.72	-13E3
^{144}SmC	155.91165	03.06	-15E3
^{156}Gd	155.92226	20.47	-----
$^{156}C_{13}$	156.00000	86.49	+2006
$^{157}Cr_3$	156.82167	20.10	-1532
$^{157}Se_2$	156.83645	07.55	-1790
$^{93}NbO_4$	156.88530	99.04	-4044
$^{125}TeO_2$	156.89442	06.96	-5287
$^{133}CsO_2$	156.90513	97.80	-8272
^{141}PrO	156.90239	99.76	-7228
^{145}NdC	156.91206	08.47	-15E3
^{157}Gd	156.9241	15.68	-----
$^{157}C_{13}$	157.00335	12.60	+1980
$^{158}Cr_3$	157.81989	07.31	-1511
$^{158}Se_2$	157.83386	02.29	-1744
$^{78}Br_2$	157.83678	25.54	-1802
$^{94}ZrO_4$	157.88728	17.23	-4257
$^{126}TeO_2$	157.89367	18.62	-5139
^{142}NdO	157.90239	27.04	-7175
^{142}CeO	157.90421	11.04	-7822
$^{134}BaC_2$	157.90425	02.37	-7837
^{158}NdC	157.91269	17.12	-14E3
^{158}Dy	157.92401	00.09	-41E4
^{158}Gd	157.9244	24.87	-----
$^{158}C_{13}$	158.00335	00.847	+2000
$^{159}Cr_3$	158.82003	01.23	-1516
$^{159}Se_2$	158.83661	01.39	-1800
^{143}NdO	158.90449	12.14	-7794
$^{159}BaC_2$	158.90555	06.50	-8221
^{147}SmC	158.91449	14.80	-15E3
^{159}Tb	158.92488	100.00	-----
$^{159}C_{13}$	159.01008	00.038	+1865
$^{160}Se_2$	159.83294	29.14	-1696
$^{160}Br_2$	159.83481	49.99	-1731
$^{56}Fe_2O_3$	159.84861	83.41	-2035
$^{128}TeO_2$	159.8535	31.64	-2170
$^{160}BaC_2$	159.90437	07.78	-7000
^{144}NdO	159.90477	23.79	-7127
^{144}SmO	159.90656	03.08	-7745
$^{136}CeC_2$	159.90707	00.189	-7941
^{160}SmC	159.91442	11.29	-13E3
^{148}NdC	159.91646	05.67	-15E3
^{160}Dy	159.9239	02.294	-48E3
^{160}Gd	159.92721	21.90	-----
$^{161}BaC_2$	160.90557	11.36	-7994
^{145}NdO	160.90697	08.29	-8592
^{161}SmC	160.9168	13.80	-18E3
^{161}Dy	160.9257	18.88	-----
$^{81}Br_2$	161.83284	24.47	-1746
$^{162}Se_2$	161.83310	09.15	-1751
$^{130}BaO_2$	161.89603	00.101	-5476
$^{130}TeO_2$	161.89675	34.31	-5613
$^{27}Al_6$	161.88924	100.00	-4453
$^{162}BaC_2$	161.90488	70.33	-7815
$^{138}CeC_2$	161.90603	00.245	-8274
^{162}SmC	161.9169	07.51	-19E3
^{150}NdC	161.92082	05.56	-34E3
^{162}Dy	161.9256	25.53	-----
^{162}Er	161.92873	00.136	+52E3
$^{163}BaC_2$	162.90824	01.57	-8330
$^{139}LaC_2$	162.90603	99.71	-7884
^{147}SmO	162.90940	14.93	-8855
^{151}EuC	162.91954	47.29	-20E3
^{163}Dy	162.9278	24.97	-----
$^{164}Fe_3$	163.81415	00.93	-1434
$^{164}Se_2$	163.83326	00.84	-1721
$^{132}BaO_2$	163.89492	00.097	-4882
$^{140}CeC_2$	163.90528	86.53	-7060
^{148}SmO	163.90933	11.21	-8551
^{148}NdO	163.91138	05.72	-9575
^{152}SmC	163.91936	26.42	-18E3
^{152}GdC	163.91943	00.198	-18E3
^{164}Dy	163.9285	28.18	-----
^{164}Er	163.9298	01.56	+13E3
$^{55}Mn_3$	164.81415	100.00	-1435
$^{133}CsO_2$	164.89493	99.52	-4827
$^{141}PrC_2$	164.90748	97.80	-7629
^{149}SmO	164.91171	13.80	-9484
^{153}EuC	164.9206	51.60	-19E3
$^{165}CeC_2$	164.90864	01.94	-8061
^{165}Ho	164.9291	100.00	-----
$^{166}Fe_3$	165.80349	14.67	-1325
$^{134}BaO_2$	165.89405	02.41	-4789
$^{142}NdC_2$	165.90748	26.51	-7819
$^{142}CeC_2$	165.90930	10.83	-8553
^{150}SmO	165.91181	07.42	-9824
^{150}NdO	165.91573	05.61	-13E3
^{154}GdC	165.92094	02.13	-21E3
^{154}SmC	165.92193	22.46	-44E3
^{166}Er	165.9287	33.41	-----
$^{167}Fe_2$	166.80995	00.70	-1385
$^{135}BaO_2$	166.89535	06.56	-4749
$^{167}NdC_2$	166.90958	12.49	-7979
$^{167}CeC_2$	166.91265	00.242	-9352
^{151}EuO	166.91445	47.70	-10E3
^{167}GdC	166.9227	14.59	-21E3
^{167}Er	166.9305	22.94	-----
$^{168}Fe_3$	167.79582	77.12	-1244
$^{28}Si_7$	167.86158	56.68	-2426
$^{40}Ca_3O_3$	167.87249	89.69	-2880
$^{136}BaO_2$	167.89417	07.77	-4585
$^{136}CeO_2$	167.89687	00.192	-4949
$^{168}NdC_2$	167.9098	23.79	-7996
$^{144}SmC_2$	167.91165	03.02	-8769
^{156}DyC	167.914	00.052	-9996
^{152}SmO	167.91427	26.66	-10E3
^{152}GdO	167.91434	00.20	-10E3
^{168}GdC	167.92026	20.40	-21E3
^{168}Er	167.9308	27.07	-----
^{168}Yb	167.93390	00.135	+54E3
$^{12}C_{14}$	168.00000	85.53	+2427
$^{169}Fe_3$	168.79929	05.52	-1251
$^{137}BaO_2$	168.89537	11.27	-4335
$^{169}NdC_2$	168.91206	08.64	-7582
^{153}EuO	168.91551	52.05	-8972
^{169}GdC	168.9241	15.74	-17E3
^{169}Tm	168.93434	100.00	-----
$^{169}C_{14}$	169.00335	13.42	+2448
$^{170}Fe_3$	169.80319	00.96	-1283
$^{170}Sr_2$	169.82260	00.11	-1504
$^{85}Rb_2$	169.82404	52.06	-1523
$^{138}BaO_2$	169.89468	71.32	-4153
$^{138}CeO_2$	169.89585	00.25	-4275
$^{138}LaO_2$	169.89654	00.039	-4351
$^{134}BaC_3$	169.90425	02.34	-5421
$^{146}NdC_2$	169.91269	16.84	-7418
^{154}GdO	169.91585	02.14	-8604
^{154}SmO	169.91684	22.66	-9058
^{158}DyC	169.924	00.089	-15E3
^{170}GdC	169.9244	24.76	-15E3
^{170}Yb	169.934/	03.03	-11E4
^{170}Er	169.9356	14.88	-----
$^{170}C_{14}$	170.00670	00.977	+2390
$^{171}Sr_2$	170.82224	00.079	-1503
$^{139}LaO_2$	170.89583	97.43	-4255
$^{171}BaC_3$	170.90555	06.45	-5614
$^{147}SmC_2$	170.91449	14.64	-7947
^{155}GdO	170.91761	14.69	-9295
^{159}TbC	170.92488	98.89	-15E3
^{171}Yb	170.936/	14.31	-----
$^{171}C_{14}$	171.01008	00.044	+2307
$^{172}Sr_2$	171.81935	01.90	-1624
$^{172}Rb_2$	171.82132	40.19	-1655
$^{140}CeO_2$	171.89508	88.05	-5708
^{160}DyC	171.9239	02.27	-13E4
$^{172}BaC_3$	171.90437	07.76	-8254
^{156}DyO	171.909	00.052	-11E3
$^{172}SmC_2$	171.91442	11.31	-16E3
$^{148}NdC_2$	171.91646	05.60	-20E3
^{156}GdO	171.91717	20.42	-21E3
^{160}GdC	171.92721	21.66	-86E3
^{172}Yb	171.9252/	21.82	-----
$^{173}Sr_2$	172.81834	01.38	-1445
$^{141}PrO_2$	172.89728	99.52	-4247
$^{173}BaC_3$	172.90557	11.20	-5333
$^{173}SmC_2$	172.9168	13.78	-8157
^{157}GdO	172.91901	15.64	-9107
^{173}DyC	172.9257	18.70	-14E3
^{173}Yb	172.938/	16.13	-----
$^{58}Ni_3$	173.80605	33.11	-1455
$^{174}Sr_2$	173.81545	16.77	-1579
$^{174}Rb_2$	173.81860	07.76	-1625
$^{142}NdO_2$	173.89728	26.98	-6141
$^{142}CeO_2$	173.8991	11.02	-6563
$^{174}BaC_3$	173.90488	69.68	-8394
$^{174}SmC_2$	173.9169	07.58	-20E3
^{158}DyO	173.919	00.09	-26E3
^{158}GdO	173.91931	24.81	-28E3
$^{150}NdC_2$	173.92082	05.50	-36E3
^{174}DyC	173.9256	25.46	INF.
^{174}Yb	173.9256	31.84	-----
^{162}ErC	173.92873	00.134	+56E3
^{174}Hf	173.939	00.18	+13E3
$^{175}Sr_2$	174.81509	11.59	-1378
$^{143}NdO_2$	174.89938	12.11	-4105
$^{139}LaC_2$	174.90603	96.63	-4864
$^{151}EuC_2$	174.91954	46.77	-7789
^{159}TbO	174.91979	99.76	-7877
^{175}DyC	174.9278	24.97	-12E3
^{175}Lu	174.942/	97.41	-----
$^{176}Ni_3$	175.80147	37.66	-1246
$^{176}Sr_2$	175.81202	68.16	-1346
$^{144}NdO_2$	175.8996	23.74	-4080
$^{144}SmO_2$	175.90145	03.08	-4263
$^{140}CeO_2$	175.90528	85.57	-4699
^{160}DyO	175.91881	02.29	-7359
$^{152}SmC_2$	175.91936	26.13	-7532
$^{152}GdC_2$	175.91943	00.20	-7554
^{160}GdO	175.92212	21.85	-8541
^{176}DyC	175.9285	28.15	-12E3
^{164}ErC	175.9298	01.54	-14E3

Species	Mass	Abundance	Value
176Hf	175.92212	05.20	-8541
176Lu	175.9419	02.59	-22E3
176Yb	175.94272	12.73	-----
59Co3	176.79954	100.00	-1238
177Ni3	176.80179	01.71	-1257
145NdO2	176.90186	08.26	-4354
153EuC2	176.9206	51.03	-8080
161DyO	176.92061	18.83	-8083
165HoC	176.9291	98.89	-13E3
177Hf	176.9425	18.50	-----
178Ni3	177.79689	19.53	-1218
89Y2	177.81144	100.00	-1353
146NdO2	177.90249	17.14	-4393
162DyO	177.92051	25.47	-7912
154GdC2	177.92094	02.10	-8066
154SmC2	177.92193	22.21	-8445
162ErO	177.92364	C0.136	-9191
166ErC	177.9287	33.04	-12E3
178Hf	177.9430	27.14	-----
179Ni3	178.79720	01.30	-1209
147SmO2	178.90429	14.90	-4374
179GdC2	178.9227	14.73	-7953
163DyO	178.92271	24.86	-7957
179ErC	178.9305	23.05	-12E3
179Hf	178.9452	13.75	-----
180Ni3	179.79446	07.37	-1187
90Zr2	179.80866	26.48	-1309
148SmO2	179.90422	26.48	-4297
148NdO2	179.9065	05.70	-4544
180GdC2	179.92226	20.34	-7548
164DyO	179.92341	28.11	-7931
164ErO	179.92471	01.56	-8413
180ErC	179.9308	27.02	-12E3
168YbC	179.9339	00.134	-15E3
180W	179.9445	00.135	-11E4
180Ta	179.945/	00.012	-16E4
180Hf	179.9461	35.24	-----
12C15	180.00000	84.58	+3339
181Ni3	180.79262	00.43	-1181
181Zr2	180.80965	11.56	-1329
149SmO2	180.9066	13.76	-4616
165HoO	180.9241	99.76	-8339
181GdC2	180.9241	15.78	-8339
169TmC	180.9343	98.89	-16E3
181Ta	180.9458	98.988	-----
181C15	181.00335	14.22	+3144
182Ni3	181.78987	02.22	-1165
182Zr2	181.80900	19.87	-1328
134BaO3	181.88898	02.40	-3191
134BaC4	181.90425	02.31	-4358
150SmO2	181.90670	07.40	-4630
150NdO2	181.91062	05.59	-5143
166ErO	181.92361	33.33	-8126
182GdC2	181.924	24.66	-3270
170YbC	181.934/	03.00	-15E3
170ErC	181.9356	14.72	-18E3
182W	181.9460	26.41	-----
182C15	182.00670	1.115	+2997
183Zr2	182.80999	03.84	-1325
183Ni3	182.79019	00.12	-1159
135BaO3	182.89028	06.54	-3164
183BaC4	182.90555	06.40	-4300
159TbC2	182.92488	97.80	-7879
167ErO	182.92541	22.88	-8063
183YbC	182.9360	14.18	-15E3
183W	182.9481	14.40	-----
183C15	183.01008	00.054	+2952
184Ni3	183.78744	00.49	-1139
184Zr2	183.80934	20.83	-1318
184Mo2	183.81710	02.51	-1396
136BaO3	183.88910	07.75	-3076
184BaC4	183.90437	07.73	-4131
160DyC2	183.9239	02.24	-7358
152SmO2	183.90916	26.59	-4629
184YbC	193.9252	21.74	-7762
168ErO	183.9257	27.00	-7932
160GdC2	183.92721	21.41	-8481
168YbO	183.9288	00.135	-9156
184Os	183.946	00.018	-63E3
184W	183.9489	30.64	-----
185Ni3	184.78776	00.03	-1154
185Zr2	184.81296	03.91	-1370
137BaO3	184.89030	11.24	-3205
173EuO2	184.9140	51.93	-4919
185BaC4	184.90557	11.17	-4359
185DyC2	184.9257	18.52	-8294
169TmO	184.9292	99.76	-9843
185YbC	184.938	16.37	-19E3
185Re	184.946	37.07	-----
186Ni3	185.78501	00.09	-1122
93Nb2	185.81132	100.00	-1334
186Zr2	185.81231	08.83	-1344
186Mo2	185.81449	02.86	-1365
138BaO3	185.88961	71.14	-3044
186BaC4	185.90488	70.03	-4058
154GdO2	185.91074	02.14	-4653
154SmO2	185.91173	22.60	-4772
186YbC	185.9256	31.67	-7408
186DyC2	185.9256	25.38	-7408
162ErC2	185.92873	00.133	-8464
170YbO	185.9290	03.02	-8569
170ErO	185.9356	14.84	-12E3
174HfC	185.939	00.18	-16E3
186W	185.9507	28.41	-----
186Os	185.952	01.59	+14E4
187Ni3	186.78738	00.003	-1129
187Mo2	186.81299	04.98	-1335
187Zr2	186.81462	.00.63	-1351
139LaO3	186.89076	99.19	-3004
155GdO2	186.9125	14.66	-4516
187DyC2	186.9278	24.98	-7419
171YbO	186.9310	14.28	-8498
175LuC	186.942	96.33	-17E3
187Re	186.953/	62.93	-----
187Os	186.956/	01.64	+62E3
188Ni3	187.78463	00.014	-1091
188Zr2	187.81528	03.99	-1327
188Mo2	187.81188	06.05	-1311
140CeO3	187.89001	87.84	-2810
140CeC4	187.90528	84.63	-3641
156GdO2	187.91206	20.37	-4192
172YbO	187.9201	21.76	-5108
188DyC2	187.9285	28.11	-6618
164ErC2	187.9298	01.53	-6936
176HfC	187.9408	05.14	-12E3
188LuC	187.9419	03.64	-13E3
176YbC	187.94272	12.59	-13E3
188Os	187.9569	02.59	-----
63Cu3	188.78877	32.98	-1113
189Mo2	188.81476	05.84	-1315
27Al7	188.87078	100.00	-2154
157GdO2	188.91390	15.60	-4237
165HoC2	188.9291	97.80	-6427
173YbO	188.9330	16.09	-7410
189HfC	188.9425	18.36	-12E3
189Os	188.9585	16.1	-----
190Ni3	189.78425	00.001	-1057
190Mo2	189.81453	12.99	-1271
190Zr2	189.81694	00.97	-1291
158GdO2	189.9142	24.75	-3815
174YbO	189.9205	31.76	-4367
166ErC2	189.9287	32.67	-5381
174HfO	189.9339	00.18	-6311
190HfC	189.9430	27.04	-9046
190Pt	189.964	00.013	-----
191Cu3	190.78696	44.26	-1082
191Mo2	190.80940	06.91	-1240
159TbO2	190.91468	99.52	-3920
191ErC2	190.93C5	23.16	-5804
175LuO	190.9369	97.18	-7206
191HfC	190.9452	13.90	-11E3
191Ir	190.9634	37.3	-----
64Zn3	191.78388	11.69	-1077
192Mo2	191.81192	13.05	-1277
96Zr2	191.81860	00.078	-1337
192Ru2	191.81740	00.31	-1326
160DyO2	191.9137	02.28	-3958
160GdO2	191.91703	21.80	-4250
192ErC2	191.9308	26.97	-6113
168YbC2	191.9339	00.132	-6783
176HfO	191.9357	05.19	-7244
176LuO	191.9368	02.58	-7558
176YbO	191.9375	12.70	-7803
192WC	191.9445	C0.134	-11E3
180TaC	191.945	00.012	-11E3
192HfC	191.9461	35.00	-12E3
192Os	191.9622	41.0	-----
192Pt	191.9648	00.78	+74E3
12C16	192.00000	83.64	+5078
193Cu3	192.78515	19.80	-1063
193Mo2	192.81042	10.60	-1235
162DyO2	192.9155	18.79	-3769
169TmC2	192.9343	97.80	-5956
177HfO	192.9374	18.46	-6566
181TaC	192.9458	98.88	-9233
193Ir	192.9667/	62.7	-----
193C16	193.00335	14.99	+5265
194Zn3	193.78197	19.95	-1070
194Mo2	193.81094	10.49	-1273
194Ru2	193.86270	00.21	-1928
162DyO2	193.9154	25.41	-4049
170YbC2	193.934	02.96	-6620
170ErC2	193.9356	14.55	-7002
178HfO	193.9379	27.07	-7636
182WC	193.9460	26.12	-11E3
194Pt	193.9633/	32.9	-----
194C16	194.00670	01.26	+4469
195Zn3	194.78306	02.95	-1065
195Mo2	194.81219	07.53	-1266
195Ru2	194.81475	01.40	-1237
163DyO2	194.91760	24.85	-4012
195YbC	194.9360	14.06	-6456
179HfO	194.9401	13.72	-7470
195WC	194.9481	14.53	-11E3
195Pt	194.9662/	33.8	-----
195C16	195.01008	00.066	+4443
196Zn3	195.78078	24.65	-1052
196Mo2	195.81196	08.84	-1263
196Ru2	195.81370	01.43	-1277
28Si7	195.83851	56.68	-1524
164ErO2	195.91960	01.55	-4126
164DyO2	195.92340	28.04	-4484
196YbC2	195.9252	21.65	-4677
180WO	195.9394	00.135	-7075
180HfO	195.9410	35.16	-7508
180TaO	195.9399	00.012	-7205
196OsC	195.946/	00.018	-9288
196WC	195.9489	30.46	-11E3
196Hg	195.96583	00.146	-15E4
196Pt	195.9671/	25.3	-----
197Zn3	196.78115	03.35	-1059
197Mo2	196.81272	01.82	-1275
197Ru2	196.81370	02.36	-1283
197Si7	196.83806	20.22	-1525
165HoO2	196.9189	99.52	-4078
197YbC	196.938/	16.24	-6745
181TaO	196.9407	99.747	-7432
185ReC	196.948/	36.66	-10E3
197Au	196.9672	100.00	-----
198Zn3	197.77814	17.99	-1062
198Ru2	197.81243	05.57	-1298
198Mo2	197.81249	04.58	-1301
198Si7	197.83533	16.39	-1531
134BaO4	197.88390	02.40	-2453
166ErO2	197.9185	33.25	-4294
166YbC2	197.9256	31.14	-5076
174HfC2	197.939/	00.75	-7733
182WO	197.9409	26.65	-8353
198WC	197.9507	28.10	-14E3
198OsC	197.952/	01.57	-16E3
198Pt	197.9646	07.21	-----
198Hg	197.96675	10.02	+92E3
199Zn3	198.77996	03.19	-1057
199Ru2	198.8111	03.84	-1266
199Si7	198.83489	04.33	-1492
135BaO4	198.88519	06.53	-2397
167ErO2	198.9203	22.83	-4152
175LuC2	198.942/	95.27	-7589
183WO	198.9430	14.33	-7889
187ReC	198.953/	62.23	-13E3
187OsC	198.956/	01.62	-16E3
199Hg	198.96822	16.84	-----
200Zn3	199.77696	10.01	-1045
200Ru2	199.81110	09.16	-1263
200Mo2	199.81302	00.93	-1255
200Si7	199.83216	01.87	-1469
136BaO4	199.88401	07.73	-2371
168ErO2	199.92060	26.94	-4190
176HfC2	199.9408	05.09	-726-
200LuC2	199.9419	04.66	-731?
176YbC2	199.94272	12.45	-780?
184OsO	199.9409	00.018	-729C
184WO	199.9438	30.57	-8152
188OsC	199.9569	13.2	-133?
200Hg	199.96833	22.13	-----

Species	Mass	Abundance	Value
$^{201}Zn_3$	200.77805	01.36	-1045
$^{201}Ru_2$	200.80978	12.35	-1252
$^{137}BaO_4$	200.88521	11.21	-2362
$^{169}TmO_2$	200.9241	99.52	-4351
$^{201}HfC_2$	200.9425	18.20	-7232
^{185}ReO	200.943/	36.98	-7364
^{201}OsC	200.9585	16.0	-17E3
^{201}Hg	200.97209	13.22	-----
$^{202}Zn_3$	201.77577	03.45	-1037
$^{202}Ru_2$	201.8087	11.58	-1247
$^{138}BaO_4$	201.88452	70.97	-2346
$^{170}YbO_2$	201.9238	03.03	-4313
$^{170}ErO_2$	201.9254	14.81	-4467
$^{202}HfC_2$	201.9430	26.95	-7311
^{186}WO	201.9456	28.35	-8071
^{202}OsC	201.9548	26.3	-13E3
^{202}Hg	201.97063	29.80	-----
$^{203}Zn_3$	202.77685	00.47	-1041
$^{203}Ru_2$	202.8087/	15.52	-1244
$^{171}YbO_2$	202.9259	14.24	-4403
$^{203}HfC_2$	202.9452	14.04	-7602
^{187}ReO	202.948/	62.78	-8493
^{187}OsO	202.9510	01.64	-9712
^{191}IrC	202.9634	37.3	-24E3
^{203}Tl	202.9719	29.50	-----
$^{204}Zn_3$	203.77451	00.84	-1027
$^{204}Ru_2$	203.80746	14.68	-1232
$^{140}CeO_4$	203.88492	87.63	-2314
$^{172}YbO_2$	203.9150	21.71	-3512
$^{180}WC_2$	203.9445	00.132	-7137
$^{180}TaC_2$	203.9458	00.012	-7477
$^{204}HfC_2$	203.9461	34.76	-7560
^{192}OsC	203.9622	40.55	-19E3
^{192}PtC	203.9648	00.77	-25E3
^{204}Pb	203.97308	01.48	-----
^{204}Hg	203.97347	06.85	+52E4
$^{12}C_{17}$	204.00000	82.72	+7577
$^{205}Zn_3$	204.77505	00.067	-1031
$^{205}Ru_2$	204.8092	06.34	-1245
$^{173}YbO_2$	204.9278	16.05	-4456
$^{181}TaC_2$	204.9458	97.79	-7320
^{189}OsO	204.9534	16.1	-10E3
^{193}IrC	204.9667	62.0	-29E3
^{205}Tl	204.9738	70.50	-----
$^{205}C_{17}$	205.00335	15.75	+6937
$^{206}Zn_3$	205.77505	00.067	-1033
$^{206}Ru_2$	205.80795	11.75	-1237
$^{206}Pd_2$	205.80814	00.21	-1239
$^{206}Rh_2$	205.80910	100.00	-1246
$^{174}YbO_2$	205.9154	31.69	-3489
$^{182}WC_2$	205.9460	25.83	-7242
^{190}OsO	205.9497	26.3	-8326
^{194}PtC	205.9633	32.5	-18E3
^{206}Pb	205.97444	26.4	-----
$^{206}C_{17}$	206.00670	01.41	+6385
$^{207}Pd_2$	206.80968	00.43	-1245
$^{175}LuO_2$	206.9318	96.94	-4695
$^{207}WC_2$	206.9481	14.66	-7451
^{191}IrO	206.9583	37.2	-12E3
^{207}PtC	206.9662	33.8	-21E3
^{207}Pb	206.97588	22.6	-----
$^{207}C_{17}$	207.01008	00.079	+6052
$^{208}Zn_3$	207.77554	00.002	-1034
$^{208}Pd_2$	207.80656	01.73	-1223
$^{208}Ru_2$	207.80844	03.45	-1236
$^{176}HfO_2$	207.9306	05.17	-4516
$^{176}LuO_2$	207.9317	02.58	-4627
$^{176}YbO_2$	207.9325	12.67	-4711
$^{208}WC_2$	207.9489	30.29	-7495
^{192}OsO	207.9571	40.9	-11E3
^{192}PtO	207.9579	00.78	-13E3
^{208}PtC	207.9671	25.37	-22E3
^{208}Pb	207.97665	52.3	-----
$^{209}Pd_2$	208.80810	04.88	-1220
$^{177}HfO_2$	208.9323	18.41	-4443
$^{185}ReC_2$	208.948	36.25	-6668
^{193}IrO	208.9616	62.5	-12E3
^{197}AuC	208.9672	98.89	-17E3
^{209}Bi	208.97934	100.00	-----
$^{210}Pd_2$	209.80619	11.45	-1381
$^{178}HfO_2$	209.80964	27.01	-8266
$^{186}WC_2$	209.9507	27.78	-28E3
$^{186}OsC_2$	209.952	01.55	-34E3
^{194}PtO	209.9582	32.8	-----
^{198}PtC	209.9646	07.13	+33E3
^{211}HgC	209.96675	16.76	+25E3
$^{211}Pd_2$	210.80773	12.15	-1376
$^{187}ReC_2$	210.953	61.54	-27E3
^{195}PtO	210.9611	33.7	-----
^{199}HgC	210.96822	16.65	+30E3
$^{212}Pd_2$	211.80582	13.55	-1357
$^{180}HfO_2$	211.9359	35.07	-8121
^{196}PtO	211.9620	25.2	-----
^{212}HgC	211.96833	23.06	+34E3
$^{213}Pd_2$	212.80829	11.88	-1385
$^{181}TaO_2$	212.9356	99.51	-8036
^{197}AuO	212.9621	99.76	-----
^{213}HgC	212.97029	13.33	+26E3
$^{214}Pd_2$	213.80638	17.19	-1378
$^{214}Ag_2$	213.80966	26.37	-1408
$^{187}WO_2$	213.9358	26.28	-8274
^{196}PtO	213.9595	02.19	-99E3
^{198}HgO	213.96166	10.00	-----
^{214}HgC	213.97063	29.62	+24E3
$^{215}Pd_2$	214.80695	05.25	-1397
$^{183}WO_2$	214.9379	14.33	-8520
^{199}HgO	214.96313	16.80	-----
^{203}TlC	214.9719	29.17	+25E3
$^{216}Pd_2$	215.80694	13.58	-1119
$^{216}Ag_2$	215.80944	49.96	-1134
$^{184}WO_2$	215.9387	30.49	-3524
^{200}HgO	215.96323	23.07	-5874
^{204}PbC	215.97308	01.46	-8024
^{204}HgC	215.97347	06.77	-8142
$^{12}C_{18}$	216.00000	81.80	-----
$^{217}Cd_2$	216.81021	00.31	-1124
$^{186}WO_2$	216.9405	28.27	-5688
^{205}TlC	216.9738	69.72	-7344
$^{217}C_{18}$	217.00335	16.50	-----
$^{218}Cd_2$	217.80736	00.80	-1094
$^{218}Pd_2$	217.80794	06.31	-1097
$^{218}Ag_2$	217.80922	23.67	-1104
^{202}HgO	217.96553	29.73	-5295
^{206}PbC	217.97444	23.3	-6758
$^{218}C_{18}$	218.00670	01.571	-----
$^{219}Cd_2$	218.80835	00.52	-1086
^{203}TlO	218.9668	29.43	-5060
^{219}PbC	218.97588	22.7	-6404
$^{219}C_{18}$	219.01008	00.094	-----
$^{220}Cd_2$	219.80658	02.66	-1363
$^{220}Pd_2$	219.80894	01.39	-1383
^{204}PbO	219.96799	01.48	-----
^{204}HgO	219.96838	06.83	+57E4
^{220}PbC	219.97665	52.0	+25E3
$^{221}Cd_2$	220.80757	03.37	-1371
^{205}TlO	220.9687	70.3	-----
^{209}BiC	220.97934	98.89	+21E3
$^{222}Cd_2$	221.80635	08.28	-1362
^{206}PbO	221.96935	23.5	-----
$^{223}Cd_2$	222.80734	08.27	-1364
^{207}PbO	222.97080	22.5	-----
$^{224}Cd_2$	223.80684	16.20	-1360
$^{224}Si_8$	223.81544	52.27	-1435
^{208}PbO	223.97156	52.1	-----
$^{75}As_3$	224.76513	100.00	-1076
$^{225}Cd_2$	224.80783	13.26	-1352
^{209}BiO	224.97425	99.76	-----
$^{226}Cd_2$	225.80661	17.27	
$^{227}Cd_2$	226.80801	09.01	
$^{228}Cd_2$	227.80710	11.98	-1182
$^{228}In_2$	227.80791	08.19	-1188
$^{204}PbC_2$	227.97308	01.45	-8470
$^{228}C_{19}$	228.00000	80.89	-----
$^{229}Cd_2$	228.80945	01.86	-1181
$^{229}C_{19}$	229.00335	17.22	-----
$^{230}In_2$	229.80722	91.62	-1153
$^{230}Cd_2$	229.80854	04.38	-1161
$^{230}C_{19}$	230.00670	01.74	-----
$^{231}PbC_2$	230.97588	22.6	
$^{232}Sn_2$	231.80638	03.05	-1002
$^{232}Cd_2$	231.80998	00.57	-1018
$^{232}PbC_2$	231.97665	51.6	-3782
^{232}Th	232.0380	100.00	-----
$^{233}Sn_2$	232.80529	02.46	-----
$^{209}BiC_2$	232.97934	97.80	+1338
$^{234}Sn_2$	233.80424	08.04	- 991
^{234}U	234.0403	00.0056	-----
$^{235}Sn_2$	234.80515	06.34	- 989
^{235}U	235.0428	00.7204	----
$^{236}Sn_2$	235.80439	16.65	
$^{237}Sn_2$	236.80530	09.16	-1497
$^{208}TlO_2$	236.9636	70.20	-----
$^{238}Sn_2$	237.80425	17.95	- 974
$^{206}PbO_2$	237.96424	23.5	-2822
^{238}U	238.0486	99.2739	----
$^{239}Sn_2$	238.80535	06.40	-1490
$^{207}PbO_2$	238.96568	22.5	-----
$^{240}Sn_2$	239.80440	14.76	-1227
$^{208}PbO_2$	239.96645	52.0	-7154
$^{240}C_{20}$	240.00000	79.99	-----
$^{241}Sn_2$	240.80661	01.71	-1225
$^{241}C_{20}$	241.00335	17.93	-----
$^{242}Sn_2$	241.80566	05.96	-1204
$^{242}C_{20}$	242.00670	01.91	-----
$^{243}Sn_2$	242.80839	01.02	-1205
$^{243}C_{20}$	243.01008	00.128	-----
$^{244}Sn_2$	243.80692	04.13	
^{232}ThC	244.0380	98.89	
^{232}ThO	248.0329	99.76	
^{238}UC	250.0486	98.175	
$^{252}C_{21}$	252.00000	79.14	
$^{253}C_{21}$	253.00335	18.62	
$^{254}C_{21}$	254.00670	02.09	-----
^{238}UO	254.0435	99.035	+5930
$^{232}ThC_2$	256.0380	97.80	
$^{238}UC_2$	262.0486	97.088	
$^{232}ThO_2$	264.0278	99.52	9496
$^{264}C_{22}$	264.00000	78.26	-----
$^{265}C_{22}$	265.00335	19.29	
$^{266}C_{22}$	266.00670	02.27	
$^{238}UO_2$	270.0384	98.796	