

## Elements Fact Sheets (Numerical)

### New Elements in Red

1	H	Hydrogen	Greek: <i>hydro</i> + <i>genes</i> , "water forming" (name given to the element by the French chemist Antoine Lavoisier)
2	He	Helium	Greek: <i>helios</i> , "Sun" (Helium was discovered in an analysis of the light emitted from the Sun's corona during a solar eclipse.)
3	Li	Lithium	Greek: <i>lithos</i> , "stone"
4	Be	Beryllium	Named after the Greek word for the mineral beryl, <i>beryllo</i>
5	B	Boron	Arabic: <i>buraq</i> , "borax" (sodium borate)
6	C	Carbon	Latin: <i>carbo</i> , "charcoal"
7	N	Nitrogen	Latin: <i>nitron</i> + <i>genes</i> , "nitre forming" (Nitre is potassium nitrate.)
8	O	Oxygen	Latin: <i>oxy</i> + <i>genes</i> , "acid forming" (This name was given to the element by the French Antoine Lavoisier, because he believed it to be an essential component of all acids, although that has turned out not to be true.)
9	F	Fluorine	Latin: <i>fluere</i> , "to flow"
10	Ne	Neon	Greek: <i>neos</i> , "new"
11	Na	Sodium	English: <i>soda</i> , a term found in many compounds of sodium; symbol Na from the Latin name, <i>atrium</i>
12	Mg	Magnesium	Named after Magnesia, a district in Thessaly in central Greece
13	Al	Aluminum	Latin: <i>alumen</i> , "alum" (potassium aluminum sulfate)
14	Si	Silicon	Latin: <i>silicis</i> , "flint"
15	P	Phosphorus	Greek: <i>phos</i> + <i>phoros</i> , "light bringing" (because it glows in the dark, and spontaneously bursts into flame in air)
16	S	Sulfur	Derived either from Sanskrit: <i>sulvere</i> , Latin: <i>sulfurium</i> , or Arabic: <i>sufra</i>
17	Cl	Chlorine	Latin: <i>chloros</i> , "greenish-yellow" (elemental chlorine is a pale, yellow-green gas)
18	Ar	Argon	Greek: <i>argos</i> , "idle" (because of its unreactivity)
19	K	Potassium	Named after the English word for the mineral potassium carbonate, "potash" (which is found in high concentrations in wood ashes); symbol K from the Latin name, <i>kalium</i>
20	Ca	Calcium	Latin: <i>calx</i> , "lime" (calcium oxide)
21	Sc	Scandium	Named after the Latin word for Scandinavia, <i>Scandia</i>
22	Ti	Titanium	Named after the Titans of Greek mythology
23	V	Vanadium	Named after Vanadis (Freya in Norse mythology), the Scandinavian goddess of beauty, because of the variety of colored salts it forms
24	Cr	Chromium	Greek: <i>chroma</i> , "color" (because of the wide variety of colorful salts it produces)
25	Mn	Manganese	Latin: <i>magnes</i> , "magnet" (because it can be made to be ferromagnetic with the right treatment)
26	Fe	Iron	Anglo-Saxon: <i>iren</i> . The symbol Fe comes from the Latin name, <i>ferrum</i> .
27	Co	Cobalt	German: <i>kobold</i> , "goblin" (because of the toxic fumes of arsenic that were produced when silver miners heated the arsenic-containing ore smaltite, mistaking it for silver ore)
28	Ni	Nickel	German: <i>kupfernickel</i> , "Old Nick's copper" (i.e., copper of the devil, or false copper, because it was frequently mistaken for copper)
29	Cu	Copper	Old English: <i>coper</i> , which in turn (along with the symbol Cu) was derived from the Latin <i>cuprum</i> , "from the island of Cyprus" (the leading supplier of copper in the Mediterranean at the time of the Roman empire)
30	Zn	Zinc	German: <i>zink</i> , which may in turn have originated from the Persian word for stone, <i>sing</i>
31	Ga	Gallium	Named after the Latin word for France, <i>Gallia</i> (the country in which it was discovered)
32	Ge	Germanium	Named after the Latin word for Germany, <i>Germania</i>
33	As	Arsenic	Named after the Greek word for the arsenic-containing mineral orpiment, <i>arsenikon</i> ; this name was derived from the Arabic word <i>zarnik</i>
34	Se	Selenium	Greek: <i>selene</i> , "Moon" (since tellurium had been named for the Earth)
35	Br	Bromine	Greek: <i>bromos</i> , "stench" (elemental bromine is a reddish-brown liquid with a terrible smell)
36	Kr	Krypton	Greek: <i>kryptos</i> , "hidden" (since it had been "hidden" in a sample of argon)
37	Rb	Rubidium	Latin: <i>rubidius</i> , "deep red (ruby)"
38	Sr	Strontium	Named after Strontian, a town in Scotland where the mineral strontianite was discovered, from which strontium was first isolated
39	Y	Yttrium	Named after the Swedish village of Ytterby
40	Zr	Zirconium	Arabic: <i>zargun</i> , "gold colored"
41	Nb	Niobium	Named after Niobe, a character in Greek mythology, who was the daughter of Tantalus, because of the similarity of niobium to tantalum; also known as "columbium" (Cb) by metallurgists
42	Mo	Molybdenum	Greek: <i>molybdos</i> , "lead" (because of its similarity to lead)
43	Tc	Technetium	Greek: <i>technetos</i> , "artificial" (because it was the first element to be produced artificially)
44	Ru	Ruthenium	Named after the Latin word for Russia, <i>Ruthenia</i>
45	Rh	Rhodium	Greek: <i>rhodon</i> , "rose" (because of its red-colored salts)
46	Pd	Palladium	Named after the asteroid Pallas, which had been discovered the year that the metal was first isolated
47	Ag	Silver	Anglo-Saxon: <i>siolfur</i> ; symbol Ag from the Latin name, <i>argentum</i>
48	Cd	Cadmium	Named after the Greek word for the mineral calamine, <i>cadmia</i> . Calamine is a mineral form of zinc carbonate;

cadmium was first observed as an impurity in some calamine ores

49	In	Indium	Latin: <i>indicum</i> , "indigo" (after the bright violet line of its atomic spectrum)
50	Sn	Tin	Anglo-Saxon word for the metal; symbol Sn from the Latin name, <i>stannum</i>
51	Sb	Antimony	Greek: <i>anti</i> + <i>monos</i> , "not alone" (because it was never found uncombined with another element); the symbol Sb comes from the Latin name for the mineral antimony sulfide, <i>sibium</i>
52	Te	Tellurium	Greek: <i>tellus</i> , "Earth"
53	I	Iodine	Greek: <i>iodes</i> , "violet" (Elemental iodine forms shiny, purple crystals.)
54	Xe	Xenon	Greek: <i>xenos</i> , "stranger" (because at the time, it did not form compounds with other elements)
55	Cs	Cesium	Latin: <i>caesius</i> , "sky blue" (salts of cesium produce a blue color when heated)
56	Ba	Barium	Greek: <i>barys</i> , "heavy" (in reference to the high density of some barium minerals)
57	La	Lanthanum	Greek: <i>lanthanein</i> , "to be hidden" (because the element was discovered "hidden" as an impurity in ores of cerium)
58	Ce	Cerium	Named after the asteroid Ceres (which was named after the Roman goddess of agriculture)
59	Pr	Praseodymium	Greek: <i>prasios</i> + <i>didymos</i> , "green twin" (This name was given when it was realized that the previously identified element "didymium" was actually two elements, which were rechristened as praseodymium and neodymium.)
60	Nd	Neodymium	Greek: <i>neos</i> + <i>didymos</i> , "new twin" (This name was given when it was realized that the previously identified element "didymium" was actually two elements, which were rechristened as praseodymium and neodymium.)
61	Pm	Promethium	Named after the Greek god Prometheus, who stole fire from the gods and gave it to mankind
62	Sm	Samarium	Named after the mineral samarskite, from which it was first obtained
63	Eu	Europium	Named after the continent of Europe
64	Gd	Gadolinium	Named for the mineral gadolinite, which was in turn named after Johan Gadolin, the Swedish chemist who first investigated it
65	Tb	Terbium	Named after the Swedish village of Ytterby
66	Dy	Dysprosium	Greek: <i>dysprositos</i> , "hard to get at" (because the first isolation of the element required a tedious separation sequence)
67	Ho	Holmium	Named after the Latin word for Stockholm, <i>Holmia</i>
68	Er	Erbium	Named after the Swedish village of Ytterby
69	Tm	Thulium	Named after the ancient word for Scandinavia, <i>Thule</i>
70	Yb	Ytterbium	Named after the Swedish village of Ytterby
71	Lu	Lutetium	Named after Lutecia, the ancient word for Paris
72	Hf	Hafnium	Named after the Latin word for Copenhagen, <i>Hafnia</i>
73	Ta	Tantalum	Named after Tantalus, a character in Greek mythology, and father of Niobe
74	W	Tungsten	Swedish: <i>tung sten</i> , "heavy stone" (because of the element's high density); symbol W from the German name, <i>wolfram</i> ("wolf dirt," so named because of its presence as an impurity in the mining of tin)
75	Re	Rhenium	Named after the Latin word for the Rhine River, <i>Rhenus</i>
76	Os	Osmium	Greek: <i>osme</i> , "odor" (because of its nasty smell, which is actually caused by osmium tetroxide)
77	Ir	Iridium	Latin: <i>iris</i> , "rainbow" (because of the colorful compounds that it forms)
78	Pt	Platinum	Spanish: <i>platina</i> , "little silver" (because it was first known to Europeans as an unworkable silver-like metal found alongside gold in some deposits)
79	Au	Gold	Anglo-Saxon name for the metal; the symbol Au is from the Latin name, <i>aurum</i> , "shining dawn"
80	Hg	Mercury	Named after the Roman god, Mercury (Hermes in Greek mythology), the swift-moving messenger of the gods; symbol Hg from the Latin name, <i>hydragyrum</i> , "liquid silver"
81	Tl	Thallium	Latin: <i>thallos</i> , "green twig" (after the bright green lines of its atomic spectrum)
82	Pb	Lead	Anglo-Saxon name for the metal; symbol Pb from the Latin name, <i>plumbum</i>
83	Bi	Bismuth	Named after the German word for the bismuth-containing mineral bismuthinite, <i>Bisemutum</i>
84	Po	Polonium	Named for Marie Curie's native country of Poland
85	At	Astatine	Greek: <i>astatos</i> , "unstable"
86	Rn	Radon	Variation of the name of radium
87	Fr	Francium	Named after France, the country in which it was first isolated
88	Ra	Radium	Latin: <i>radius</i> , "ray" (because of its ability to glow in the dark with a faint blue light)
89	Ac	Actinium	Greek: <i>aktinos</i> , "ray" (because it glows with a blue light in the dark)
90	Th	Thorium	Named after Thor, the Norse god of thunder
91	Pa	Protactinium	Greek: <i>proto</i> + <i>actinium</i> , "parent of actinium" (because it undergoes radioactive decay to produce actinium)
92	U	Uranium	Named after the planet Uranus, which had been discovered a few years before the element
93	Np	Neptunium	Named after the planet Neptune, which follows Uranus in the solar system
94	Pu	Plutonium	Named after the ex-planet Pluto, which follows Neptune in the solar system
95	Am	Americium	Named after the American continent, since the element above it in the lanthanide series was named after Europe
96	Cm	Curium	Named after Marie and Pierre Curie, the co-discoverers of radioactivity
97	Bk	Berkelium	Named after Berkeley, California, the city where it was first produced
98	Cf	Californium	Named after the state and University of California, where it was first produced
99	Es	Einsteinium	Named after the physicist Albert Einstein
100	Fm	Fermium	Named after the physicist Enrico Fermi, the inventor of the first nuclear reactor
101	Md	Mendelevium	Named after the chemist Dimitri Mendeleev, the deviser of the <i>Periodic Table of the Elements</i>
102	No	Nobelium	Named after Alfred Nobel, the inventor of dynamite and founder of the Nobel Prize

103	Lr	Lawrencium	Named after the physicist Ernest O. Lawrence, inventor of the cyclotron
104	Rf	Rutherfordium	Named after the physicist Ernest Rutherford, discoverer of the atomic nucleus, and a pioneer in the study of nuclear physics
105	Db	Dubnium	Named after the Russian city of Dubna, where the Joint Institute for Nuclear Research is located
106	Sg	Seaborgium	Named after the chemist Glenn T. Seaborg, who discovered/synthesized a number of transuranium elements
107	Bh	Bohrium	Named after the physicist Niels Bohr, one of the founders of quantum theory
108	Hs	Hassium	Named after the German state of Hesse, where the Laboratory for Heavy Ion Research (GSI, Gesellschaft für Schwerionenforschung) is located
109	Mt	Meitnerium	Named for the physicist Lise Meitner, one of the first scientists to recognize that uranium could undergo nuclear fission
110	Ds	Darmstadtium	Named after the German city of Darmstadt, where the Laboratory for Heavy Ion Research (GSI, Gesellschaft für Schwerionenforschung) is located, and where the element was first produced
111	Rg	Roentgenium	Named after the physicist Wilhelm Röntgen, the discoverer of X-rays
112	Cn	Copernicium	Named for Nicolaus Copernicus, Polish astronomer
113	Nh	Nihonium	Named for Nihon, "Japan," where the element was first synthesised in the Riken laboratories
114	Fl	Flerovium	Named for the Flerov Laboratory of Nuclear Reactions where the element was synthesised; itself named after Georgy Flyorov, Russian physicist
115	Mc	Moscovium	Named for Moscow, Russia, where the element was first synthesised in the JINR laboratories
116	Lv	Livermorium	Named for the Lawrence Livermore National Laboratory in Livermore, California
117	Ts	Tennessine	Named for Tennessee, where Oak Ridge National Laboratory is located
118	Og	Oganesson	Named for Yuri Oganessian, Russian physicist

#### **Elements known by their ancient names (or variations):**

Carbon  
Copper  
Gold  
Iron  
Lead  
Silicon  
Silver  
Sulfur  
Tin  
Zinc

#### **Elements named after other elements:**

Molybdenum: *molybdos*, "lead"  
Platinum: "little silver"  
Protactinium: "parent of actinium"  
Radon: variation on radium

#### **Elements named after colors:**

Cesium: Latin: *caesius*, "sky blue"  
Chlorine: Latin: *chloros*, "greenish-yellow"  
Chromium: Greek: *chroma*, "color"  
Indium: Latin: *indicum*, "indigo"  
Iodine: Greek: *iodes*, "violet"  
Iridium: Latin: *iris*, "rainbow"  
Praseodymium: Greek: *prasios* + *didymos*, "green twin"  
Rhodium: Greek: *rhodon*, "rose"  
Rubidium: Latin: *rubidius*, "deep red (ruby)"  
Thallium: Latin: *thallos*, "green twig"  
Zirconium: Arabic: *zargun*, "gold colored"

#### **Elements named after minerals:**

Aluminum: Latin: *alumen*, "alum" (potassium aluminum sulfate)  
Arsenic: Greek: *arsenikon*, "orpiment"  
Beryllium: Greek: *beryllo*, "beryl"  
Bismuth: German: *Bisemutum*, *bismuthinite*  
Boron: Arabic: *buraq*, "borax" (sodium borate)  
Cadmium: Greek: *cadmia*, "calamine"  
Calcium: Latin: *calx*, "lime" (calcium oxide)  
Gadolinium: gadolinite  
Lithium: Greek: *lithos*, "stone"

Potassium: English: potash, potassium carbonate  
Samarium: *samarskite*  
Sodium: English: *soda*, a term found in many compounds of sodium

### **Elements named after astronomical objects:**

#### **Planets:**

Neptunium: Neptune  
Plutonium: the dwarf planet Pluto  
Tellurium: the Earth  
Uranium: Uranus

#### **Asteroids**

Cerium: Ceres  
Palladium: Pallas  
Helium (the Sun)  
Selenium (the Moon)

### **Elements named after continents:**

Americium  
Europium

### **Elements named after countries, states, or other geographical features:**

Californium: State (and University) of California  
Francium: France  
Gallium: Latin word for France, Gallia  
Germanium: Latin word for Germany, Germania  
Hassium: German state of Hesse, where the GSI is located  
Magnesium: named after Magnesia, a district in Thessaly in central Greece  
**Nihonium: named for Nihon, "Japan," where the element was first synthesised in the Riken laboratories**  
Polonium: named for Marie Curie's native country of Poland  
Rhenium: named after the Latin word for the Rhine River, *Rhenus*  
Ruthenium: named after the Latin word for Russia, *Ruthenia*  
Scandium: named after the Latin word for Scandinavia, *Scandia*  
**Tennessee: named for Tennessee, where Oak Ridge National Laboratory is located**  
Thulium: named after the ancient word for Scandinavia, *Thule*

### **Elements named after cities:**

Berkelium: Berkeley, California, home of the University of California, where a number of synthetic elements have been produced  
Darmstadtium: Darmstadt, Germany, home of the Laboratory for Heavy Ion Research (GSI, Gesellschaft für Schwerionenforschung) where a number of synthetic elements have been produced  
Dubnium: Dubna, Russia, home of the Joint Institute for Nuclear Research (JINR, Объединённый институт ядерных исследований, ОИЯИ), where a number of synthetic elements have been produced  
Erbium, Terbium, Ytterbium, Yttrium: all named after the Swedish village of Ytterby (near Vaxholm), where these elements were first isolated (as well as Holmium, Scandium, and Tantalum)  
Hafnium: Copenhagen (*Hafnia*), Denmark  
Holmium: Stockholm (*Holmia*), Sweden  
**Livermorium: named for the Lawrence Livermore National Laboratory in Livermore, California**  
Lutetium: Paris (*Lutecia*), France  
**Moscovium: named for Moscow, Russia, where the element was first synthesised in the JINR laboratories**  
Strontium: Strontian, Scotland

### **Elements named after characters from mythology:**

Mercury: Mercury, the Roman messenger of the gods (Hermes in Greek mythology)  
Niobium: Niobe, a character in Greek mythology, who was the daughter of Tantalus  
Promethium: Prometheus, a Greek god who stole fire from the gods and gave it to mankind  
Tantalum: Tantalus, a character in Greek mythology, and father of Niobe  
Thorium: Thor, the Norse god of thunder  
Titanium: the Titans of Greek mythology  
Vanadium: Vanadis (Freya in Norse mythology), the Scandinavian goddess of beauty

### **Elements named after scientists:**

Bohrium: Niels Bohr, one of the founders of quantum theory  
**Copernicium: named for Nicolaus Copernicus, Polish astronomer**  
Curium: Marie and Pierre Curie, the co-discoverers of radioactivity

Einsteinium: Albert Einstein

Fermium: Enrico Fermi, the inventor of the first nuclear reactor

Flerovium: Actually named for the Flerov Laboratory of Nuclear Reactions which was named for Georgy Flyorov, Russian physicist

Lawrencium: Ernest O. Lawrence, inventor of the cyclotron

Meitnerium: Lise Meitner, one of the first scientists to recognize that uranium could undergo nuclear fission

Mendelevium: Dimitri Mendeleev, the deviser of the *Periodic Table of the Elements*

Nobelium: Alfred Nobel, the inventor of dynamite and founder of the Nobel Prize

Oganesson: Named for Yuri Oganessian, Russian physicist

Roentgenium: Wilhelm Röntgen, the discoverer of X-rays

Rutherfordium: Ernest Rutherford, discoverer of the atomic nucleus, and a pioneer in the study of nuclear physics

Seaborgium: Glenn T. Seaborg, who discovered/synthesized a number of transuranium elements

**Most of the rest of the names of the elements are derived from various chemical or physical properties:**

Actinium: Greek: *aktinos*, "ray" (because it glows with a blue light in the dark)

Antimony: Greek: *anti* + *monos*, "not alone" (because it was never found uncombined with another element)

Argon: Greek: *argos*, "idle" (because of its unreactivity)

Astatine: Greek: *astatos*, "unstable"

Barium: Greek: *barys*, "heavy" (in reference to the high density of some barium minerals)

Bromine: Greek: *bromos*, "stench" (Elemental bromine has a terrible smell.)

Cobalt: German: *kobold*, "goblin" (because of the toxic fumes of arsenic that were produced when silver miners heated the arsenic-containing ore smaltite, mistaking it for silver ore)

Dysprosium: Greek: *dysprositos*, "hard to get at" (because the first isolation of the element required a tedious separation sequence)

Fluorine: Latin: *fluere*, "to flow"

Hydrogen" Greek: *hydro* + *genes*, "water forming"

Krypton: Greek: *kryptos*, "hidden" (since it had been "hidden" in a sample of argon)

Lanthanum: Greek: *lanthanein*, "to be hidden" (because the element was discovered "hidden" as an impurity in ores of cerium)

Manganese: Latin: *magnes*, "magnet" (because it can be made to be ferromagnetic with the right treatment)

Neodymium: Greek: *neos* + *didymos*, "new twin"

Neon" Greek: *neos*, "new"

Nickel: German: *kupfernickel*, "Old Nick's copper" (i.e., copper of the devil, or false copper, because it was frequently mistaken for copper)

Nitrogen: Latin: *nitron* + *genes*, "nitre [potassium nitrate] forming"

Osmium: Greek: *osme*, "odor" (because of its nasty smell, which is actually caused by osmium tetroxide)

Oxygen: Latin: *oxy* + *genes*, "acid forming"

Phosphorus: Greek: *phos* + *phoros*, "light bringing" (because it glows in the dark, and spontaneously bursts into flame in air)

Radium: Latin: *radius*, "ray" (because of its ability to glow in the dark with a faint blue light)

Technetium: Greek: *technetos*, "artificial"

Tungsten: Swedish: *tung sten*, "heavy stone" (because of the element's high density)

Xenon: Greek: *xenos*, "stranger" (because at the time, it did not form compounds with other elements)