

Thanks to the website www.larsonjewelers.com/transitionmetals.aspx,

and to

Mrs. McVey and her 6th grade class from the Clarence Edwards Middle School in Boston, MA for this wonderful resource.

Periodic Table Resource: Tungsten, Palladium and Other Transition Metals

The periodic table of the elements showcases the 118 known chemical elements. The table is divided into metals and non-metals. The metals group is further subdivided into 6 sections: alkali metals, alkaline earth metals, lanthanoids, actinoids, transition metals, and post-transition metals. The transition metals are the largest group of the metal elements and contain 38 elements. Transition metals are grouped together based on their similar properties. They are very hard metals and have high boiling and melting points. They are also ductile, highly malleable, and conduct electricity well.

Bohrium – Bohrium, symbol Bh, is a radioactive, synthetic element named after Niels Bohr. Currently, there are no uses for this element outside of scientific research.

Cadmium – Cadmium, symbol Cd, is a bluish-white, malleable metal. It is resistant to corrosion. It is commonly used in the production of batteries, in electroplating, and in nuclear fission.

Chromium – Chromium, symbol Cr, is an element with magnetic properties. It is a hard metal that is malleable. When added to steel, it forms stainless steel. It is also used in chrome plating.

Cobalt – Cobalt, symbol Co, is a lustrous, silver-gray metal. It is a ferromagnetic metal that is not found in nature by itself. It is used in the making of high-strength alloys that are magnetic.

Copernicium – Copernicium, symbol Cn, is a radioactive, synthetic element that was named after Nicolaus Copernicus. Currently, there are no uses for this element outside of scientific research.

Copper – Copper, symbol Cu, is a semi-precious metal that conducts electricity. Copper is found in living organisms in muscle, bone, tissues, and the liver. Copper is used in alloys, biological roles, and also in electronics.

Darmstadtium – Darmstadtium, symbol Ds, is a radioactive, synthetic element that was named for Darmstadt, Germany. Currently, there are no uses for this element outside of scientific research.

Dubnium – Dubnium, symbol Db, is a radioactive, synthetic element that was named after the Russian town of Dubna. Currently, there are no uses for this element outside of scientific research.

Gold – Gold, symbol Au, is a bright yellow, shiny, precious metal. Of all the metals, it is the most ductile and malleable. Its main applications are in currency and jewelry. Gold is also used in medicine, food, and in other industrial uses.

Hafnium – Hafnium, symbol Hf, is a shiny, silvery-gray metal. It is resistant to corrosion, and it chemically is similar to zirconium. It is used in alloys, nuclear reactors, and microprocessors.

Hassium – Hassium, symbol Hs, is a radioactive, synthetic element that was named for the Latin word for the German state of Hesse. Currently, there are no uses for this element outside of scientific research.

Iridium – Iridium, symbol Ir, is a silvery-white, brittle metal. It is the second-densest element, and it is the metal that is most resistant to corrosion. It is used in the production of spark plugs, as well as in alloys and as a source of gamma radiation in brachytherapy.

Iron – Iron, symbol Fe, is the most common element found on Earth. When iron is oxidized in air, iron oxides are produced. This is called rust. Iron is used in steel, and it is also used in biological compounds in the body.

Manganese – Manganese, symbol Mn, is a hard, brittle, silvery-gray metal. Its main application is in alloy use, and it is essential to the production of steel.

Meitnerium – Meitnerium, symbol Mt, is a radioactive, synthetic element that was named for Lise Meitner. Currently, there are no uses for this element outside of scientific research.

Mercury – Mercury, symbol Hg, is a silvery-white, heavy metal. It is a fair conductor of electricity. At standard temperature and pressure conditions, mercury is liquid. It is used in barometers, thermometers, and other scientific applications, as well as in medicine.

Molybdenum – Molybdenum, symbol Mo, is a silvery-white metal. Of all of the elements, it has the sixth-highest melting point. It is commonly used in the making of high-strength steel alloys. It also plays a biological role in nitrogen fixation of some bacteria.

Nickel – Nickel, symbol Ni, is a silvery-white metal that is ductile and hard. It is one of the few elements that is magnetic at room temperature. Nickel is used in the production of various alloys, stainless steel, and magnets, among other uses.

Niobium – Niobium, symbol Nb, is a soft, gray metal that is a superconductor. It is used in the production of steel, superalloys, and in superconducting magnets.

Osmium – Osmium, symbol Os, is a blue-gray, hard metal. It is the densest of the natural elements. Alloys of osmium and platinum are used in pacemakers and pulmonary valve replacements.

Palladium – Palladium, symbol Pd, silvery-white rare metal. It is ductile and soft and resembles platinum. The predominant use of palladium is in the catalytic converter of automobiles. It is also used in the production of surgical instruments, jewelry, spark plugs of airplanes, and electrical contacts.

Platinum – Platinum, symbol Pt, is a silvery-white, ductile metal. It is resistant to tarnish and wear, and it is highly resistant to high temperatures and corrosion. Platinum is used in jewelry, the chemical industry, electronics, and in devices for vehicle emissions control.

Rhenium – Rhenium, symbol Re, is a silvery-white metal. It is one of the rarest elements found in the Earth's crust. It has the highest boiling point of all the elements. Rhenium is used with superalloys in the production of jet engine parts.

Rhodium – Rhodium, symbol Rh, is a silvery-white metal that is rare and chemically inert. The main use of this element is in the catalytic converter of automobiles. It is also used in jewelry because of its reflective properties.

Roentgenium – Roentgenium, symbol Rg, is a radioactive, synthetic element that was named after Wilhelm Röntgen. Currently, there are no uses for this element outside of scientific research.

Ruthenium – Ruthenium, symbol Ru, is a hard, white metal that is inert to many chemicals. It is used in alloys with platinum and palladium in the production of electrical contacts that resist wearing.

Rutherfordium – Rutherfordium, symbol Rf, is a radioactive, synthetic element that was named after Ernest Rutherford. Currently, there are no uses for this element outside of scientific research.

Scandium – Scandium, symbol Sc, is a silvery-appearing soft metal. It slowly dissolves in dilute acids and is susceptible to the effects of weathering. The main application of this metal is its use as an alloy with aluminum, as well as with titanium.

Seaborgium – Seaborgium, symbol Sg, is a radioactive, synthetic element that was named after Glenn Seaborg. Currently, there are no uses for this element outside of scientific research.

Silver – Silver, symbol Ag, is a soft, white, precious metal. It is the most electrically conductive of all metals. It is also the most thermally conductive of all metals. Silver's most well-known use is in currency. It is also used in silverware, jewelry, mirrors, electronics, and many other applications.

Tantalum – Tantalum, symbol Ta, is a blue-gray, rare metal. It is highly resistant to corrosion, and it conducts electricity and heat very well. The main use of tantalum is in the manufacturing of electronic components. It is also used in making alloys.

Technetium – Technetium, symbol Tc, is a silvery-gray metal that is radioactive. This metal is most commonly obtained as a powder. Technetium is used in nuclear medicine for diagnostic tests.

Titanium – Titanium, symbol Ti, is a strong metal that is metallic-white in coloring. It is highly resistant to corrosion. Titanium is used in the making of steel, and it is often combined with other metals into alloys.

Tungsten – Tungsten, symbol W, is a steel-gray, hard metal. It has the highest tensile strength of any other metal in pure form. It is used in the production of alloys and steels, along with uses in electronics, jewelry, and other applications.

Vanadium – Vanadium, symbol V, is a silver-gray, ductile metal. It is stable against hydrochloric and sulfuric acids, and it is also resistant to corrosion. It is used as a steel additive and is used in alloys with aluminum and titanium.

Yttrium – Yttrium, symbol Y, is a silvery-metallic metal. It is often called a rare earth element. It's most important use is in the production of phosphors, such as the one that gives a red color in television picture tubes.

Zinc – Zinc, symbol Zn, is a hard, bluish-white metal that can conduct electricity. It is used with copper to form brass. Zinc is most commonly used for anti-corrosion purposes.

Zirconium – Zirconium, symbol Zr, is a strong, gray-white metal that appears like titanium. It is a soft, malleable metal that is highly resistant to corrosion. Because of this, it is often used in alloys in materials exposed to harsh environments.