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สมบัติของธาตุในกลุ่มต่างๆ ในตารางธาตุ

http://www.chemicalelements.com/

Alkali metals

The alkali metals, found in group 1 of the periodic table (formerly known as group IA), are very reactive metals that do not occur freely in nature. These metals have only one electron in their outer shell. Therefore, they are ready to lose that one electron in ionic bonding with other elements. As with all metals, the alkali metals are malleable, ductile, and are good conductors of heat and electricity. The alkali metals are softer than most other metals. Cesium and francium are the most reactive elements in this group. Alkali metals can explode if they are exposed to water.

The Alkali Metals are:

- Lithium
- Sodium
- Potassium
- Rubidium
- Cesium
- Francium

Alkaline Earth metals

The alkaline earth elements are metallic elements found in the second group of the periodic table. All alkaline earth elements have an oxidation number of +2, making them very reactive. Because of their reactivity, the alkaline metals are not found free in nature
The Alkaline Earth Metals are:

- Beryllium
- Magnesium
- Calcium
- Strontium
- Barium
- Radium

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Transition metals

The 38 elements in groups 3 through 12 of the periodic table are called "transition metals". As with all metals, the transition elements are both ductile and malleable, and conduct electricity and heat. The interesting thing about transition metals is that their valence electrons, or the electrons they use to combine with other elements, are present in more than one shell. This is the reason why they often exhibit several common oxidation states. There are three noteworthy elements in the transition metals family. These elements are iron, cobalt, and nickel, and they are the only elements known to produce a magnetic field.

The Transition Metals are:

- Scandium
- Titanium
- Vanadium
- Chromium
- Manganese
- Iron
- Cobalt
- Nickel
- Copper
- Zinc
- Yttrium
- Zirconium
- Niobium
- Molybdenum
- Technetium
- Ruthenium
- Rhodium
- Palladium
- Silver
- Cadmium
- Hafnium
- Tantalum
- Tungsten
- Rhenium
- Osmium
- Iridium
- Platinum
- Gold
- Mercury
- Rutherfordium
- Dubnium
- Seaborgium
- Bohrium
- Hassium
- Meitnerium
- Ununnilium
- Unununium
- Ununbium

Other Metals

The 7 elements classified as "other metals" are located in groups 13, 14, and 15. While these elements are ductile and malleable, they are not the same as the transition elements. These elements, unlike the transition elements, do not exhibit variable oxidation states, and their valence electrons are only present in their outer shell. All of these elements are solid, have a relatively high density, and are opaque. They have oxidation numbers of +3, ±4, and -3.

The "Other Metals" are:

- Aluminum
- Gallium
- Indium
- Tin
- Thallium
- Lead
- Bismuth

Metalloids

Metalloids are the elements found along the stair-step line that distinguishes metals from non-metals. This line is drawn from between Boron and Aluminum to the border between Polonium and Astatine. The only exception to this is Aluminum, which is classified under "Other Metals". Metalloids have properties of both metals and non-metals. Some of the metalloids, such as silicon and germanium, are semi-conductors. This means that they can carry an electrical charge under special conditions. This property makes metalloids useful in computers and calculators

The Metalloids are:

- Boron
- Silicon
- Germanium
- Arsenic
- Antimony
- Tellurium
- Polonium

Non - metals

Non-metals are the elements in groups 14-16 of the periodic table. Non-metals are not able to conduct electricity or heat very well. As opposed to metals, non-metallic elements are very brittle, and cannot be rolled into wires or pounded into sheets. The non-metals exist in two of the three states of matter at room temperature: gases (such as oxygen) and solids (such as carbon). The non-metals have no metallic luster, and do not reflect light. They have oxidation numbers of ±4, -3, and -2.

The Non-Metal elements are:

- Hydrogen
- Carbon
- Nitrogen
- Oxygen
- Phosphorus
- Sulfur
- Selenium

Halogens

The halogens are five non-metallic elements found in group 17 of the periodic table. The term "halogen" means "salt-former" and compounds containing halogens are called "salts". All halogens have 7 electrons in their outer shells, giving them an oxidation number of -1. The halogens exist, at room temperature, in all three states of matter:

- **Solid**- Iodine, Astatine
- **Liquid**- Bromine
- **Gas**- Fluorine, Chlorine

Noble gas

The six noble gases are found in group 18 of the periodic table. These elements were considered to be inert gases until the 1960's, because their oxidation number of 0 prevents the noble gases from forming compounds readily. All noble gases have the maximum number of electrons possible in their outer shell (2 for Helium, 8 for all others), making them stable.

- Helium
- Neon
- Argon
- Krypton
- Xenon
- Radon

Rare Earth Elements

The thirty rare earth elements are composed of the lanthanide and actinide series. One element of the lanthanide series and most of the elements in the actinide series are called trans-uranium, which means synthetic or man-made. All of the rare earth metals are found in group 3 of the periodic table, and the 6th and 7th periods. The Rare Earth Elements are made up of two series of elements, the Lanthanide and Actinide Series.

The Rare Earth Elements are:

Lanthanide Series

- Lanthanum
- Cerium
- Praseodymium
- Neodymium
- Promethium
- Samarium
- Europium
- Gadolinium
- Terbium
- Dysprosium
- Holmium
- Erbium
- Thulium
- Ytterbium
- Lutetium

Actinide Series

- Actinium
- Thorium
- Protactinium
- Uranium
- Neptunium
- Plutonium
- Americium
- Curium
- Berkelium
- Californium
- Einsteinium
- Fermium
- Mendelevium
- Nobelium
- Lawrencium