KÉMIA IDEGEN NYELVEN

Kémia angolul

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Előszóban:

A középiskolás kémiakönyvek tudása „kanonizált”: egyértelmű, ellenőrzött, elfogadott és egységes alaptudás. Az interneten a már-már végtelennek tűnő forrásból elérhető tudás egy kusza labirintus, amiből anélkül kellene kitalálni, hogy a Minótauroszként leselkedő tévedések és ellenőrizetlen, féltudományos vagy akár hamis információk bekerülnének a beadandó dolgozatba. Angol nyelven tovább nő a találatok száma, nehezítésül olyan fogalmakkal is találkozunk, amelyek a) nem rendelkeznek magyar megfelelővel, b) jóval magasabb szinten használatosak, mint a kutakodó diák tudása.
Az angol szaknyelv és tulajdonképpen a természettudomány jellegét kiválóan szemléltető 2 kisebb szöveg fordítása a feladat. A témájuk pedig a nyilvánvaló eltéréseik ellenére is ugyanaz: a p-mező fémei.

A lefordított anyagokat 2019. december 16-ig küldjétek be a **http://kokel.mke.org.hu** weblapon keresztül!

TEXT 1: Post-Transition Metals

Definition: What are Post-Transition Metals

The post-transition elements in the periodic table are a group of elements located between the transition metals (to the right) and metalloids (to the left). Due to their properties, they are also called ‘other’ or ‘poor’ metals.

Location of the Post-Transition Metals in the Periodic Table

Although there are some conflicting theories, generally the post-transition metals include elements from groups 13-15.

List of Post-Transition Metals	
Aluminium	Al
Gallium	Ga
Indium	In
Tin	Sn
Thallium	Tl
Lead	Pb
Bismuth	Bi

The elements 113-116 on the periodic table, i.e. nihonium (Nh), flerovium (Fl), moscovium (Mc), and livermorium (Lv), are considered to possibly belong to the post-transition metal family, though it is yet to be confirmed due to some unknown properties of the elements.

Polonium is sometimes also included in the list of post-transition metals. The same may be done for zinc, cadmium and mercury (otherwise considered as transition metals), and for germanium and antimony (otherwise considered as metalloids).

Properties and Characteristics of Post-Transition Metals

Physical Properties

- Soft or brittle, poor mechanical strength
- Melting points lower than transition metals
- Boiling points are also usually lower than transition metals
- Covalent or directional bonding shown by crystalline structures

- High density

Chemical Properties

- Tendency to form covalent bonds
- Acid – Base amphoterism
- Can form half-metallic compounds

Periodic Trends of Post-Transition Metals

Generally, atomic radii decrease, ionisation energies increase, as a result fewer electrons are available for metallic bonding, and so ions are smaller, more polarising and tend to form covalent bonds. Hence they show lesser metallic nature.

Uses of Post-Transition Metals

Different elements in this family have different uses. Aluminium and tin are respectively used for making utensils, in electronics, as well as for soldering and plating steel. Bismuth is used to make Pepto-Bismol, a drug used to soothe upset stomachs. Indium is used for electronics, for example, making touch screens and flat panel displays, while Gallium has application in semiconductors and fuel cells. Lead is used in making batteries, among other things.

Interesting Facts

Aluminium is the most abundant post-transition metal, and the third most abundant element on earth.

The post-transition metal bismuth was considered to be the heaviest stable element until recently, before it was discovered to be mildly radioactive.

TEXT 2: Everyday Uses of Basic Metals

We encounter different metals every single day, though some we may see more frequently than others. How many pieces of metal did you use this morning? The aluminum in your soda can? The stainless steel in your jewelry? The lithium and cadmium in your cell phone's battery?

Metal is everywhere, and today we're going to take a closer look at the basic metals. Also known as poor metals, you probably encounter quite a few of these in your daily life.

Basic Metals Properties

The basic metals sit to the right of the transitional metals on the periodic table, which also earns them the name post-transitional metals. This group includes:

Aluminum	Thallium	Flerovium
Gallium	Nihonium	Moscovium
Indium	Lead	Livermorium
Tin	Bismuth	

Aluminum is the third most common element on the planet, coming in behind oxygen and silicon. Gallium, lead, tin and thallium come next, followed by indium and bismuth.

Occasionally, you will see zinc, cadmium and mercury classified as basic metals. You may also see germanium and antimony included in this group as well, even though these elements are classified as metalloids.

Chemical and Physical Traits

Most basic metals share many of the same characteristics. They're solid under most conditions, though they're softer than transitional metals and have lower boiling and melting points. Gallium's melting point is so low that it will melt in the palm of your hand!

Real-Life Applications

Where might you encounter these elements in your daily life? Let's go through the list.

Aluminum

Aluminum is a lightweight metal that's naturally resistant to corrosion, and you probably use it every single day of your life. Soda cans, metal utensils, automotive parts and even buildings are all made of aluminum because it's so malleable and strong.

Several aluminum alloys exist that can make the metal even stronger and more corrosion resistant. Make sure you don't eat it, though — on the genetic level, aluminum bonds with the phosphates in human DNA and can contribute to dementia.

Gallium

Gallium is primarily used as a semiconductor in electrical applications and as a material for mirrors because of its inherent shine. It isn't used for things like eating utensils, though, because it's melting point is so low that it will melt in your hand.

If you ever want to play a prank on someone, have them stir their coffee with a gallium spoon — it's non-toxic, and it will be hilarious to see their face as their spoon melts away.

Indium

Indium has similar uses to gallium, and when alloyed with the latter metal, it will melt at room temperature. It is used to make mirrors, transistors and other electrical components.

Thallium

Thallium, the next element on our list, doesn't have as many uses today as it used to. This bluish metal used to be part of rodent poison, until it was discovered that it was just as poisonous to humans as it was to the rodents.

Today, radioactive thallium isotopes are used in medicine. If you're having a problem with your heart, your doctor might use thallium 201 to determine how well it's functioning.

Tin

You might not find tin in cans anymore, but there is still plenty of it out there. It doesn't corrode, so it is used as a primary component in anti-corrosive coatings. When paired with niobium, tin also makes a powerful superconducting magnet.

Lead

You probably encounter more lead than you might think — it's in the protective vest at the doctor's office when you get an x-ray, your fishing weights, and inside the battery of your car. It can also be used as a protective coating for wires. It is toxic, though, so make sure you're not nibbling on any lead-based paint!

Bismuth

You've probably got bismuth in your medicine cabinet — though it's radioactive, it is also used as one of the primary ingredients in Pepto-Bismol. This brittle metal is also used in fire extinguishers and smoke detectors.

Other Elements

The other four elements on our list — nihonium, flerovium, moscovium and livermorium — are all short-lived radioactive elements that are created in a lab and have no other applications beyond lab research.

And there you have it — everyday uses for the basic or post-transitional metals. Are you surprised by how many of these metals you use every day without realizing it? The next time you successfully start your car or crack open a cold soda or beer, make sure you think of the basic metals that make up that can.

Source of TEXT 1:

Article entitled '*Post-Transition Metals*' on website *'Chemistry Learners It's all about Chemistry'* available at http://www.chemistrylearner.com/post-transition-metals?fbclid=IwAR25EP87OFVjS3D6llGB4x_-Ew3icQObhHEBPE-zNKZIW-HXeKYAdmxKqsU (date of latest access: 27.10.2019)

Source of TEXT 2:

Article entitled '*Everyday Uses of Basic Metals*' on website *'Schooled by Science'* available at https://schooledbyscience.com/everyday-uses-of-basic-metals/ (date of latest access: 25.10.2019)