

Periodic Table of Elements

This is the second text which will be used for practicing dictation and translation in the written part of the exam.

The key words are emphasized in bold and there is a list of them in the presentation

Periodic Table of Elements

Certain elements share similar chemical properties and atomic structures. These similarities become clear when all the known elements are set out in the periodic table of elements.

Most elements are metals. Many are found in the Earth's **crust**, combined with other elements as **deposits** called **ores**. Metals in their pure form are either not very strong or they **rust** easily. Most of the metals we use today are **alloys**. Alloys are solid mixtures of different metals. They provide hard, strong, long-lasting materials.

Similar/Similarity – sličan/sličnost

Rust - rđa

Crust – kora

Alloy – legura

Deposit – naslaga

Hard – čvrst, tvrd

Ore – ruda

Strong – jak, čvrst

Long-lasting - dugotrajan

Common properties of metals

Most metals have a high melting point. They **conduct** heat and electricity well. Metals have a high **density**, and are **ductile** (can be drawn into **wire**). Most metals react with air to form oxides and with acids to release hydrogen. Metals form positive ions.

Boron, silicon, germanium, arsenic, antimony, selenium and tellurium are called **metalloids** (or semimetals) because they have some properties of metals and some of non-metals. Silicon and germanium are used to make electronic components because they are **semiconductors**. They will conduct electricity, but not as well as true metals.

To conduct – provoditi

Metalloids - metaloidi

Density – gustina

Components – komponente, delovi

Ductile – kovan

Semiconductor – poluprovodnik

Wire - žica

Common – zajednički, čest

In the middle of the periodic table lies the group of typical metals called the **transition metals**. They are less reactive than the **alkali metals** and the **alkaline-earth metals**, and have higher melting points. Some transition metals, such as copper, and nickel are magnetic. A bluish-grey metal, zinc often provides the **casing** for batteries. Its main use is as a protective **coating** that prevents iron or steel from rusting. With copper, it forms the alloy **brass**. Zinc oxides are used to make **rubber** and plastic compounds more stable.

Transition metals – prelazni metali

Brass - mesing

Alkaline-earth – zemnoalkalni

Rubber - guma

Casing – kućište, prevlaka

Coating – sloj, premaz

Steel - čelik

Nickel is a shiny metal that does not **corrode** and neither do its alloys. In an alloy with chromium, iron and carbon it produces **stainless steel**.

Magnetic metals – iron, cobalt and nickel are the only transition metals that can be made into strong magnets. The magnetism of an electromagnet can be switched on and off using an **electric current**.

Shiny – sjajan

To corrode – korodirati

Stainless steel – nerđajući čelik

Iron – gvožđe

To switch on/off – uključiti/isključiti

Electric current – električna struja

Other metals – at the beginning of the periodic table are two groups of highly reactive metals and the alkaline-earth metals. Our bodies need small amounts of some of these – potassium, sodium, magnesium and calcium – to stay healthy. Francium and radium are radioactive metals.

The alkali metals are: lithium, sodium, potassium, rubidium, cesium and francium. Their **oxides** and **hydroxides** dissolve in water to give strongly alkaline solutions. Alkali metals react with some non-metals to form white, soluble crystalline salts.

Amount – količina

Oxide/hydroxide – oksid/hidroksid

Soluble – rastvorljiv

Crystalline – kristalni

Sodium, a silvery, soft alkali metal, **tarnishes** on exposure to the air. An atom of sodium has 11 electrons, but only one in its outer shell, which makes it very reactive. It is extracted from **common salt** by electrolysis.

Calcium is one of the Earth's most abundant metals. There are vast deposits in the form of **limestone** (also called calcium carbonate). Calcium is also present in bones and teeth. The average human contains 1kg of calcium.

To tarnish – rđati, potamenti

Abundant – u izobilju

To contain - sadržati

Exposure – izloženost

Deposit – naslaga

Average – prosek

Outer – spoljni

Limestone – krečnjak

Vast - ogroman

Common salt – obična, kuhinjska so

To extract – izvući, ekstrahovati

The non-metals are phosphorus, sulfur, hydrogen, carbon, nitrogen, oxygen, the halogens and the **noble gases**. Although they form a small part of the periodic table, they are vital to life on Earth.

Hydrogen is at the top of the periodic table because it has the simplest atom, with just one proton orbited by a single electron. It is an colorless, odorless, tasteless, non-toxic gas, and is the least dense of all the elements.

Noble gas – plemeniti gas

The least – najmanje

Vital – bitan, važan

Dense – gust

Odor – miris

Taste – ukus

All life on Earth is based on the element carbon because carbon compounds are vital to the functioning of living cells. Carbon circulates through air, oceans, rocks and living things in a **carbon cycle**.

The halogens are fluorine, chlorine, bromine, iodine and astatine. They are poisonous and have a strong smell. They react with metals to form salts.

To circulate – kružiti

Rock – kamen, stena

Carbon cycle – ciklus kruženja ugljenika

Iodine – jod

Poisonous – otrovan