SOME ELEMENTS OF THE PERIODIC TABLE

Co

HISTORY OF DISCOVERY

1735
Swedish
mineralogist
Georg Brandt

PHYSICAL PROPERTIES

- hard metal
- exists in two versions
- melting point of 1494 ° C
- ferromagnetic material

CHEMICAL PROPERTIES

$$2Co + O_2 = 2CoO$$

$$Co + Br_2 = CoBr_2$$

$$2Co + N_2 = 2CoN$$

$$3Co + C = Co_3C$$

$$Co + 2H_2SO_4 = CoSO_4 + SO_2 + 2H_2O$$

$$2Co + 8CO = Co_2(CO)_8$$

BIOLOGICAL FUNCTION

Vital for the body trace element.
It is a part of vitamin B12 (cobalamin).
It is involved in blood formation, function of the nervous system and liver, enzymatic reactions.
The human need for cobalt 0,007-0,015 mg daily.
In the absence of cobalt akobaltoz develops.

Ni

HISTORY OF DISCOVERY

1751
swedish mineralogist
Cronstedt

PHYSICAL PROPERTIES

silver-white metal
does not tarnish in air
Has a face-centered cubic lattice
In its pure form is very plastic and easy to work pressure.
Density (at n. Y.) = 8.902 g / cm ^{3}
Melting point = 1726 K

CHEMICAL PROPERTIES

$$2Ni + O_2 = 2NiO$$

$$Ni + Cl_2 = NiCl_2$$

$$3Ni + N_2 = Ni_3N_2$$

$$2Ni + B = Ni_2B$$

$$Ni + 4HNO_3 = Ni(NO3)2 + 2NO2 + 2H2O$$

$$Ni + CuSO_4 = NiSO_4 + Cu$$

$$Ni + 4CO = Ni(CO)_4$$

BIOLOGICAL FUNCTION

It is one of trace elements necessary for the normal development of living organisms.

It takes part in enzymatic reactions in animals and plants.

In the body, it accumulates in animal dead skin tissues, especially in the feathers.

Hf

HISTORY OF DISCOVERY

1923
French chemist
Jean Urbain
Danish chemist:
Dirk Coster and
Georg de Hevesy

PHYSICAL PROPERTIES

silvery-white, having a surface with a bright luster is not fading

At ordinary temperatures it has a hexagonal lattice

Density = 13.09 g/cm^3 (20 ° C)

refractory metal, its melting temperature = 2222 ° C

One of the rare natural isotopes of hafnium, 174Hf, exhibits a weak alpha activity (half-life of 2.1015 years)

CHEMICAL PROPERTIES

$$Hf + 2F_2 = HfF_4$$

Other reactions that occur under the influence of very high temperatures and in practice. It also remains unclear their mechanism.

BIOLOGICAL FUNCTION

not installed

He

HISTORY OF DISCOVERY

August 18, 1868
French scientist
Pierre Janssen

October 20, 1868
English
astronomer
Norman Lockyer

PHYSICAL PROPERTIES

practically inert chemical element.
nontoxic
is colorless, odorless and tasteless
Under normal conditions - monatomic gas
Its boiling point (T = 4,215 K for 4He) the lowest of all the simple substances

CHEMICAL PROPERTIES

- inert gas

BIOLOGICAL FUNCTION

At the moment, the biological role is not clear

You have viewed the presentation of some chemical elements.
Slides prepared for you
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