CORROSION-RESISTANT NON-FERROUS METALS AND THEIR PROPERTIES

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Annotation: In this paper, hydrogen is also included in the series of electrochemical stresses of metals, which allows us to determine which metals can squeeze hydrogen out of aqueous solutions of acids. This series characterizes the role of the electrochemical system and its oxidizing-reducing ability. The complex of all the substances involved in the electrode process is thought of as an electrochemical system.

Keywords: chemical states, mixtures, chemical elements, properties of metals, electrical conductivity, thermal conductivity.

Аннотация: В этой статье водород также включен в ряд электрохимических напряжений металлов, что позволяет определить, какие металлы могут выдавливать водород из водных растворов кислот. Этот ряд характеризует роль электрохимической системы и ее окислительно-восстановительную способность. Комплекс всех веществ, участвующих в электродном процессе, рассматривается как электрохимическая система.

Ключевые слова: химические состояния, смеси, химические элементы, свойства металлов, электропроводность, теплопроводность.

Copper and its alloys. Copper has properties such as high electrical and thermal conductivity, good corrosion resistance. Normal electrode potential of copper; Since Cu <-> Cu is 0.5 2B for the process and Cu- Cu2 is 0.35 B for the process, the probability of formation of Cu2 ions is high. The constant potential of copper in 3% NaCl solution is 0.05 B, in ln HCl solution 0.15 B. Dry CL, Fe, Br and l at room temperature do not significantly affect the corrosion of copper, they become aggressive when humidity increases. Sulfur and its compounds, as well as ammonia and its compounds, strongly corrode copper .Copper is resistant in air

and water. In oxidizing media (HNO3; H2SO4), copper corrodes rapidly. Copper forms Cu2O with oxygen, which negatively affects its technological and corrosion properties. On the basis of copper are obtained important industrial alloys (alloys of brass, bronze, etc.). Brass, which contains 15% Zn, has a golden color and is used to make medals and art objects instead of gold because of its resistance to atmospheric corrosion. Silicon (0.5%) and manganese (1%) are added to brass due to the fact that 20… .30% of zinc leads to corrosion cracking. Alloys of copper with lead, aluminum, silicon, beryllium, cadmium, chromium and other elements are called bronze. Silicon (0.5%) and manganese (1%) are added to the composition, as the presence of 30% leads to corrosion cracking. Alloys of copper with lead, aluminum, silicon, beryllium, cadmium, chromium and other elements are called bronze. Silicon (0.5%) and manganese (1%) are added to the composition, as the presence of 30% leads to corrosion cracking. Alloys of copper with lead, aluminum, silicon, beryllium, cadmium, chromium and other elements are called bronze.

Bronzes have high chemical tolerance. Among the bronzes, chemized bronze alloys have the highest corrosion resistance.Alyuminy. In terms of industrial use, it ranks 2nd after Fe. The normal electrode potential of aluminum is -1.67B. thermodynamically active. As a result of its ability to passivate, it is resistant to atmospheric conditions in water, neutral and weakly acidic solutions. The aluminum surface is passively coated with a thin layer of Al 2O3 or Al2O3 H2O. Aluminum is stable in gaseous media up to the melting point (600 C).

Magnesium, Mg - a chemical element belonging to group II of the Mendeleev periodic table; alkaline - the earth belongs to metals. Sequence number 12, atomic mass 24,305. Natural Magnesium consists of 3 stable isotopes.

Despite its negative electrochemical potential, its passivity determines its high corrosion resistance. Magnesium chromium and hydrogen barium acids are resistant to alkalis, atmospheric and distilled water, and crack quickly under the

influence of stresses. Because magnesium is chemically active, it forms a layer of MgO oxide in the air. This oxide layer does not have the ability to protect, so the surface is painted with lacquer. Magnesium alloys have low density, high specific strength and are widely used in aviation and rocket technology for good vibration resistance, anodes are prepared for current sources.

A rocket (Italian: rocchetta - pirpirak) is a flying machine that is propelled by a force created by the burning of a special rocket fuel (workpiece). Depending on the type of rocket fuel, it is divided into solid fuel and liquid fuel.

Aluminum HCl, HClO4, H3PO4 are resistant to alkalis, lime and concrete. Aluminum and its alloys (with chemical dyes) are widely used in industry. Technical aluminum is used in the manufacture of corrosion-resistant, welded structures with a variety of pipes, cables, doors, containers, milk tanks and other loads. Cast aluminum alloys such as duralyumin, sulyumin are now widely used .

Chemical corrosion.

In chemical corrosion, the metal surface is oxidized in gaseous media containing oxygen. External environments can be dry air, dry water vapor, and pure oxygen. An oxygen molecule adsorbed on a metal surface from a gaseous medium is broken down into atoms by the heat released as a result of adsorption, and with the redistribution of electrons, the atoms become ions. The atom on the surface of the metal is oxidized - it loses an electron, the oxygen atom is restored - it accepts electrons; that is, the following process occurs

- Me R Me 2 2e
- 2e R O2
- Me2 O2 R MeO

Technological measures against corrosion. Thermal and chemical-thermal treatment The increase of corrosion resistance of steels by heat treatment is associated with the absence of alpha (solid solution) and single (intrimetal compounds) of complex carbides of the same type of metal. chemical-thermal

treatment. In chemical-thermal treatment, the steel surface is enriched with elements such as C, N, AL, Cr, Si, and the properties, composition and structure of the surface layer are changed. There are the following chemical-thermal methods to increase corrosion resistance:

- Nitrogenation in gaseous or liquid media;
- Chrome plating;
- Enrichment with alumina;
- Enrichment with zinc;

Nitriding. Diffusion enrichment of the surface with nitrogen when heating steels at 500… 6500C in an ammonia environment and holding them for a certain period of time is called nitriding.

A nitrogen layer is formed on the surface of the nitrogenous part, which increases its hardness, resistance to abrasion and corrosion resistance in atmospheric conditions, water and steam and other environments.

Chrome plating. Diffusion coating of steel surfaces with chromium. Chromium-plated steel products have high corrosion resistance in gaseous media (up to 8000 C), high corrosion resistance in water, sea and acids. working parts are processed in this way Zinc enrichment process is used to increase the corrosion resistance of steels in the atmosphere, gasoline, oils and dry gases containing H2S (at 300… 5000C).

LIST OF REFERENCES

1.Karimov IA Uzbekistan on the threshold of the XXI century: - threats to security, conditions of stability, guarantees of development, Tashkent-1997;

2.Abdusamatov A., Mirzayev F., Ziyoev F.Organic chemistry. Tashkent Teacher -2004;

3. Aloviddinov AB, Ismatullayeva MT, Kholmurodov NAOrganic chemistry Tashkent Teacher -2005;

4.Gimatudinov Sh.K.Nefteotdacha collectors 1970 g;

5.Karimov AU, Yusupov D., Tursunov MA, Khamroyev BN New reagents for oil and gas extraction on the basis of local raw materials Standard 2006 № 3 Pages 36-38;

6. SMTurobjanov, D.Yusupov, MATursunov, A.Ikramov, ASMustafayev, K.Sh.KhamroyevCreation of new corrosion inhibitors, research of their properties, development of experimental-industrial production. Journal of Chemistry of Uzbekistan 4/2009;

7.XomchinkoG.P, Xomchinko IGKimyo.Tashkent, 2007;

8. Muftakov AGU General Chemistry Tashkent, 2004;