TODAY'S POSITION OF A MICA INDUSTRY IN RUSSIA

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Chronicle of the application of mica. The first large-leaf mica with which the European civilization met was mined in Karelia. In the 18th century, it was exported to the west through the port of Arkhangelsk in large quantities and it was one of the most important export goods of Russia. Light mica is called Muscovite. This name comes from the city of Moscow, or more correctly, "Muscovy". For the first time, mica was used for inserts into window covers of the ancient X-XII century Novgorod, when the wealth of the Kola Peninsula was being explored in this center of Russian civilization.

The first information about the use of mica can be attributed to the pre-dynastic period of ancient Egypt. Mica was used to treat flax as an antiseptic for embalming the dead. Mica has a rich history. In the XVI-XVII centuries, in the palaces of kings, merchants and boyar houses, as well as in churches, the windows were closed with mica. In those days, mica was called "glass of Moscow" or "crystal" in Russia. At the end of the 19th and the beginning of the 20th centuries mica was mainly used for various economic needs. In large volumes, mica became in the electrical engineering industry, which developed very slowly and only during the war of 1914 did substantial growth begin.

The military events of 1914, the electrification of the country required a large amount of electrical materials, among which one of the most important was natural mica. The question of the need to resume the extraction of mica was raised by the Commission for the Study of the Natural Production Forces of Russia organized at the beginning of the war at the Academy of Sciences, under the leadership of Academician Fersman. The next stage of development of the mica industry of the Soviet Union during the Great Patriotic War, "The Aldan flogopite deposits and organized intensive mining of mica raw materials in such quantities that they managed to completely cover the needs of wartime were reopened.

Properties and varieties of mica. Muscovite KAl2 [AlSi3O10] (OH, F) 2 as impurities contains Fe 1–4%, Mg 0.2–1.1%, Na 0.1–0.7% Phlogopite K (Mg, Fe) 3 [AlSi3O10] (OH, F) 2 is colored greenish brown amber (to black), very rarely colorless. The most important properties of muscovite and phlogopite, which determine their industrial use, are: high mechanical strength,

relatively high chemical resistance, thermal resistance, high dielectric strength, small dielectric losses, high specific volume resistance.

Areas of use of mica. Phlogopite and muscovite are high-quality electrical insulating materials, indispensable in areas such as radio-electronic, aviation and space technology.

Mica has found wide application in environmental technologies. Today on the basis of mica vermiculite make sorbents that can clear water from oil spills.

Mica in the form of sheets, powder and various products used in a wide variety of industries. The main consumer of mica is currently the electrical industry, using mica in all its forms in the manufacture of electrical machines, capacitors, rheostats, etc. A wide range of mica-based composite materials allows the complex use of mineral raw materials and obtain composite materials with improved technical characteristics.

The big work on the development of technologies for producing composite materials with improved characteristics at one time was carried out by scientists of the Irkutsk Polytechnic Institute B.A. Bayborodin, T.I. Shishelova, L.V. Chilikanova, T.V. Sozinova, N.V. Leonov under the leadership of the rector, Professor S. B. Leonov, who made a great contribution to the development of the mica industry. They are based on scientific generalizations and experimental studies of the physicochemical laws governing the formation of mica-containing composite materials related to the theoretical foundations of technologies for creating new temperature-resistant mica-containing materials and efficient heaters.

World industry. The fall and the general structural crisis of the Russian economy adversely affected the domestic mica. Previously exploited mica deposits were mothballed, many mica processing factories were closed, repurposed or in fact ceased to exist.

Since 2000 due to the gradual exit of Russia from the economic crisis.

The question arises how to overcome the consequences of the economic crisis of Russia in the mica industry. Of course, this is not a single day question, but there are good indicators for this: first, our country has rich mica deposits, has great scientific potential, has accumulated a lot of experimental and theoretical material on the scientific problems of mica. Currently, promising areas have been identified where mica can be used as an indispensable material in future technologies, for example, in nano-technologies.