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## NEW AND NON-TRADITIONAL MINERAL RAW MATERIALS DEPOSITS, PERSPECTIVES OF USE

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Deposits of new and non-traditional kinds of mineral raw material are revealed, explored and prepared to industrial recovery in Kazakstan, that can be used in frames of conversion process to create new materials with unique properties, to prepare base for new technologies elaboration, and to achieve appreciable economic benefit. These deposits are located mostly in geographic and economic conditions of advanced infrastructure and mining works network, favorable for recovery.

Study of the minerals technological and mineralogical properties and their natural aggregates was conducted by the group of Kazakstan scientists under the general management of doctor of geological and mineralogical sciences, professor O.B. Beyseev on the base of Kazak Institute of Mineral Raw Material, Kazak National Technical University, Institute of Geological Sciences and scientific research institutes of specialized enterprises, where at the appropriate laboratory and hardware base, devices and computer equipment are available. As a result of completed investigations a number of reports are made, many articles, some theme collected is a number of reports are made, many articles, some theme collected volumes and monographs are published, copyright certificates are received. Half-industrial minerals tests in appropriate products were conducted in the laboratories of closed defense enterprises on the order of various industrial branches and positive results were obtained over all physical and technical parameters.

*On the tests results the following is of heaviest interest:*

**RHODUCITE** - the alkali amphibole, its high chemical, thermal, and radiation resistance, sorbing, thermal, electric, sound-proof, reinforcing and other properties, permit to attribute it to the materials of future. Microfibrous rhoducite can be used as a sorbent (including --), a filler for varnishes and special paints, fireroof covers, heat- and cold-resistant hermetic (authors certificate No.950740), in technical rubber and antifrictional products manufacture, production of electric and heat insulating paper, special types of concrete for nuclear reactors, heat resisting and polymer concrete, heat insulating plastics.

**NEMALITE-CONTAINING CHRYSOTILE-ASBESTOS** - the natural two-minerals aggregate of fibrous morphology, it was not used before because of nemalite impurity worsening chrysotile-asbestos industrial properties. We have developed (authors certificate No.585866, 592427, 1156736) the waste-free purification technology, in the course of which the purified chrysotile-asbestos acquires high technological properties, and by-products of nemalite solution, destruction and dehydrotation are used for metallic magnesium obtaining. The aggregate nemalite-chrysotile mixture can be used in manufacture of high-effective heat-and fire-protecting frothing covers marked as FFPC, used for military, space and other technics protection and excelling serial samples in efficiency by 4 times. The materials, covered with nemalite-chrysotile layer practically do not burn.

**NICKEL-CONTAINING SILICATE-ASBOLAN ORES** with high contents of nickel and cobalt are of interest to organize production of nickel and its alloys in Kazakstan, extremely necessary for manufacturing of ferrous-nickel and cadmium-nickel alkaline accumulators, which can be used to start engines of planes, space ships, submarines

and other technics. Nickel alloys can be used in many branches of national economy including medical and pharmaceutical industries.

MEDICINAL MINERALS - their total number in the bowels of Kazakstan earth is about 50. They can serve as a powerful raw base for pharmaceutical industry. Preliminary experiments and laboratory investigations have shown, that it is possible to use them to manufacture hundreds of medical preparations, that will afford to make the actual medicines deficiency in the country considerably lower. Production of medicinal preparations on the mineral basis can be considered as the foundation for conversion of military-industrial complex enterprises.

SHUNGITES - non-traditional kind of mineral fillers for composite materials ( varnishes, paints, ceramic products, rubber, etc.).

FULLERENES - the third carboneum type, display superconductivity and are used for responsible special articles manufacturing, major antitumor pharmaceutical preparations, synthesis of superfirm materials for diamonds processing.

RAW QUARTZ MINERALS - the group of deposits containing 5 mln tons of high quality quartz good for manufacture of cut-glass and fibre-optical articles, is explored in details. There are also deposits of other kinds of non-traditional strategic mineral raw material in the Republic of Kazakstan - natural fillers, that can be used in the national economy of the country and bring considerable economic benefit: chrysotile-asbestos, amphibole-asbestos, talk, vollastonite, tremolite, actinolite, vermiculite, zeolite, etc.

*The authors offer execution of integrated experimental investigations of new materials with the purpose of*

- more precise specification of developed compositions and new materials elaboration;
- study of the field of their possible application;
- revelation of their consumer and export opportunities;
- drawing up feasibility reports and preparation of document packages for complex deposits recovery.