



Powder modifier based on Al-Cu-Fe quasicrystals

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Quasicrystals is a new class of materials, discovered in 1984, with unique properties. Currently, a lot of research is being carried out in the world in the field of application of quasicrystals in almost all areas of industry. An obstacle to the large-scale practical application of quasicrystals is the high cost of synthesizing this material.

NANOKOM has developed a unique technology that has reduced the cost of production to a level that provides the possibility of its application on an industrial scale.

Specifications:

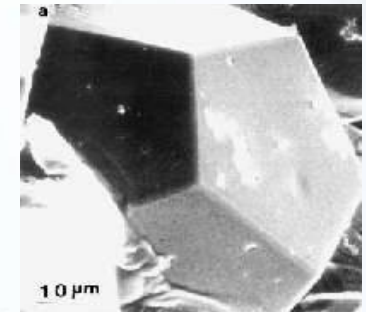
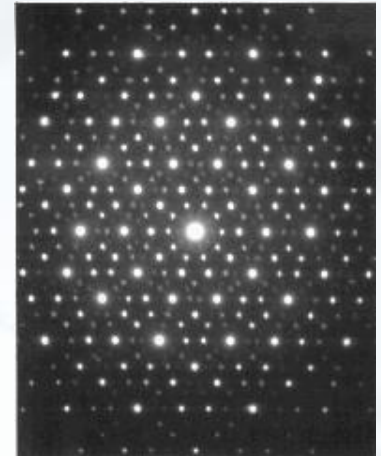
Density: 4 g / cm³

Dispersion of the base powder: 1-10 μm

Steel Friction Coefficient: 0.14

Hardness: 800-1000 HV, Thermal conductivity: 2 W / (m · K)

Resistivity (at T room): 4.5 mOhm · cm



Modifier assignment

1. Improving the mechanical characteristics and adhesion to metals of polymers, elastomers and materials based on them;
2. Decrease in friction, increase in energy efficiency and resource of friction units and mechanisms in normal working conditions, as well as in conditions of “oil starvation” and “dry friction”;
3. Increases wear resistance and abrasion in polytetrafluoroethylene (Teflon, PTFE, Fluoroplast-4) by 2 to 3 orders of magnitude;
4. Improving the physico-mechanical properties of babbitts and increasing the life of products from babbitts based on quasicrystals;
5. Reinforcing metals to create anti-friction composite materials;
6. Formation of coatings on metals to reduce the coefficient of friction, as well as on glass to increase the level of hydrophobicity.



In mechanical engineering, metallurgy and energy:

- Reduces friction losses and energy consumption, lowers temperature and noise of working mechanisms, increases the life of the mechanisms, prevents grasping and jamming of nodes and parts;
- Increases the service life of bearings, gears, transmissions when added to oil and grease;
- Increases the strength of polymer composite materials, plastic products.

In oilfield services:

- Extends the life of rubber products, prevents peeling of rubber from metal;
- Increases the service life of rubbing units, reduces the coefficient of friction at the contact point in metal-metal and metal-rock pairs;
- Prevents overgrowing of pipe walls with paraffin and sulfur deposits.

In light industry:

- Increases wear resistance of PTFE products and coatings based on it
- Increases physical and mechanical characteristics of rubber products, and paints and varnishes.



Proposal of collaboration



- Scientific collaboration - conducting research to find new areas of practical application of the quasicrystalline modifier and patenting the results and products obtained.
- Testing and implementation - carrying out test work on the implementation of the modifier in traditionally used materials and technologies to obtain additional economic effect, as well as new previously unattainable properties and characteristics of traditional materials.
- Creation of joint ventures - the creation of industrial alliances with large industry companies to localize the production of unique products and products using quasicrystals.
- Implementation of the modifier - fulfillment of commercial orders for the production and sale of the modifier in any industrial volumes.