Electrolux heating elements

MICA - A HIGH PERFORMANCE THERMAL AND ELECTRICAL INSULATION

WHAT IS MICA ?

MICA is a complex hydrous alumino silicate mineral containing sodium, iron, magnesium, potassium and flaurine. The crystalline struction of mica imparts a perfect basal cleavage which could be delaminated into extremely thin films or sheets which are chemically inert, dielectric, elastic, flexible, hydrophilic, insulating, lightweight, platy, reflective, refractive, resilient and transparent to opaque. They are stable when exposed to electricity, light, moisture and extreme temperatures.

The combination of the aforesaid properties have actually made mica virtually an essential and indispensable material for use in various industrial applications. In fact, no other natural substance has yet been found to possess the unique combination and outstanding properties equal to mica. In today's modern world where mineral substitutes compete for a market nitche, mica still maintains a privileged position as a unique mineral product for which there has yet to emerge a strong replacement.

MAJOR APPLICATIONS OF MICA

The most extensive use of natural mica is as an insulating material for electrical and electronic equipments. The basic function of an insulation is to insulate reliably the live parts of an electrical installations from one another and separate electrical circuits at different voltages from each other, as well as, metallic components from earthed structural components. It is obvious that insulating materials are indispensible in electrical engineering as they are used to cover the current-conducting parts of an electrical devices and insulate it at different potentials. None of the electrical devices, even the simplest ones, can be constructed without an insulating material. The most important single feature of any insulating system is its reliability. If a reliable, trouble-free service life is to be achieved, then it's insulation system must be designed to meet all foreseable operating requirements. Consequences of failure of a vital unit of a capital plant, where insulating materials are mostly applied, viz. heavy-duty high voltage high-power electrical rotating machines, including large turbo generators, hydro generators, traction motors, etc can be serious both in economic terms as well as in its effect on associated equipments. All electrical rotating machines which operates at high voltage at one stage experience corona, that is, electrical discharges which ultimately destroy its insulating system resulting in failure of the machine. ***Mica's ability to resist the effects of high voltage temperatures and rapid fluctuation thereof, and to withstand arc and corona resistance with no permanent injury, resistance to compression, insolubility, combined with all other desirable properties, have made mica an ideal insulating material for use in heavy duty electrical equipments. Even today, mica is the yardstick by which the performance of other insulating materials is measured.***

Mica is of late finding new technologies and new applications in the field of ***aerospace, defense, mechanical, medical, optical*** uses as well as in equipments that encounters very high temperatures such as in ***ground-to-air missile systems, jet engines function systems, laser devices, medical electronics, optical instrumentation, radar systems, rockets and for radiation treatments.*** Besides it is used in many sophisticated components of the vastly complicated electronic circuits of ***space probes, satelites and capsules.***

MAJOR APPLICATIONS OF MICA

- As an insulation in ***motors, generators, transformers*** and other electrical and electronic applications.
- As gaskets and shields of ***sight glass of liquid-level/water level indicators of high pressure steam boilers.***
- As an insulator in semiconductor devices, viz., ***power transistors, diodes, rectifiers, ICs etc.***
- As heating elements of ***laundry irons, toasters, kettles, hair dryers, fan heaters, strip heaters, popcorn machines, hand dryers, soldering irons, microwave ovens, rice cookers*** etc.
- As thermal insulation in ***steel industries, forging industries, electric arc furnaces,*** etc.
- As linining material in ***induction furnace coil insulations*** and refractories.
- As dielectric in ***mica capacitors*** of all types.
- As a diaphragms for ***oxygen-breathing equipments, hearing aids, mommsen lungs, loud speakers, sound detector of aircrafts and submarines*** etc.
- As window covers for ***anthracite, combustion furnaces, navigation compass cards, kerosene or wood stoves, microwave ovens, geiser-muller counter tubes, jet engine ignition systems, optical band pass filters, broadband wave plates and retardation plates*** etc.
- As washers in ***power grid resistors, dynamic braking resistors, tubelar heaters, and other electrical devices*** etc.
- As dry ground mica in ***paints, plastics, rubber, gypsum wallboards, plaster board joint cements, oil-well drillings, welding electrodes, pearlescent pigments,***

- ***Natural Mica :*** Blocks, Splittings and Films as per ISO, ASTM, NEMA specs.
- ***Mica Insulators :*** Precision punched to various intricate shapes and size as per customers drawings and specs for ***Power Transistors, Diodes, Rectifiers, ICs***, and other semiconductor devices.
- ***Optical Grade Mica :*** High precision scratcthless mica components in any specified shape, size, and thickness suitable for ***Metallized Diaphragm Valves, Klystron and Gieger Tubes, Microwave Windows, Microscope Slides, Optical Bandpass Filters, Broadband Waveplates, Oxygen Breathing Equipments, X-Ray Apparatus***, etc.
- ***Micanite Products :*** Made of natural Muscovite/Phlogopite Mica or Mica Paper as per IEC, BSS, NEMA, specs in ***Rigid, Flexible, Moulding, Folium Commutator Plates,*** etc.
- ***Mica Tapes :*** Made of Muscovite/Phlogopite Mica Paper bonded with suitable resins reinforced with a protective backing one or both sides with glassfabric or polyester film, suitable for VPI insulation systems and fibre-proof cables etc.
- ***Mica 'V' Rings, Cones and Sleevings :*** Made to various intricate shapes and dimensions of commutators of high-voltage DC rotating machines ofr traction motors.
- ***Mica Tubes :*** Made of natural mica or mica paper in various dimensions for high-voltage and high-temperature equipments.
- ***Mica Washers :*** Made of natural mica or mica paper in different size, shape and bonded thickness for grid resistors and other high temperature equipments.
- ***Mica Shields and Discs :*** Precision punched to specified shape, size and thickness for sight glass of liquid-level & water-level gauges of steam boilers and HP Boiler gauge glass kits.
- ***Mica Heating Elements :*** Made in 110/120 and 220/240 Volts and electric wattage rating from 150 to 1000 for laundry irons, toasters, hair dryers, strip heaters, band heaters, etc.
- ***Mica Powder and Flakes :*** Dry-ground, Micronised. Calcined, Surface-Treated, Coloured, to controlled particle size suitable for Paints & Coatings, Gypsum Plaster Boards, Plastics, Automobiles, Acoustics, Electrodes, Rubber, Oil-well Drillings, etc.

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