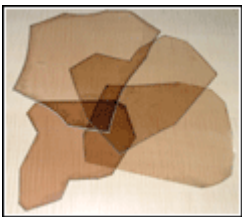


BLS MICA PROFILE

1. Fabricated Mica

The term Fabricated Mica applies to cutting, stamping and punching of natural sheet mica to a specified size, shape and thickness within close dimensional tolerances for electrical and electronic end-uses. Most of the Fabricated Mica components are custom built against provided specifications and drawings which are subject to change from part to part. The fabrication is performed by using foot or power presses with the help of compound dies/tools. The mica may also be hand-sheared, drilled or lathe-turned. They are produced into innumerable designs each differing in size, pattern, thickness and quality from one another.



Mica Shields

Mica Shields are used with flat transparent sight glasses in water and liquid level gauges and columns of high pressure steam boilers. Mica Shield provides protection, retains basic strength and increases service life of sight glasses when used at extreme steam pressure and high working temperature. It is used as an ideal transparent medium for monitoring the liquid level and pressure of steam.



Mica Discs

Mica Disc provides the best protection to circular viewport glasses and perfect visibility for checking the degree of combustion and liquid level in high pressure steam boilers. It is also used in breathing apparatus, communication devices, fuses, geiger counters, broadband waveplates for optical instruments, etc.



Mica Insulators

Precision punched mica parts according to specific shapes and dimensions are used as mounting washers and reliable insulators in power transistors, diodes, IC's, heat sinks, rectifiers and other semiconductor devices. It helps the semiconductors to be insulated from the chassis, dissipate the heat away and keeps them cool.



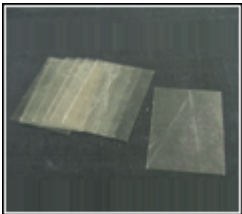
Mica Spacers

In the form of bridges or spacers, it is used in radio and television vacuum tubes. These spacers serve to hold the tube elements in position, insulated from each other and at uniform distances.



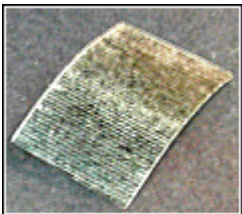
Wrapper Mica

Mica Wrapper is wrapped or rolled into tube forms that are eventually placed over the soldering iron electrodes. It plays a vital role to eliminate physical contact between the resistance wire and copper bit ensuring dependable service life.



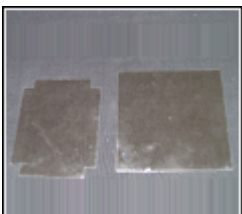
Corrugated or Crimped Mica

Corrugated or Crimped Mica is prepared by passing through a specially designed rolling machine. It is supplied in the form of vertically corrugated ribs and mainly used in wrapping the soldering iron electrodes. It plays an important role to eliminate physical contact between the resistance wire and copper bit ensuring dependable service life.



Window Mica or Isinglass

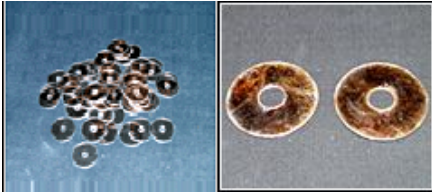
Owing to high transparency, flatness and thermal endurance, Mica is used as viewing windows for kerosene stoves, wood stoves, petromax lamps, furnaces and fireplaces.



Mica Washer

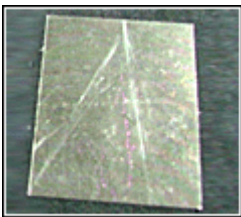
Natural Mica Washers are circular punched and stamped natural mica parts with round openings in the center suitable for electrical and electronic applications.

Such natural mica washers can also be bonded into considerable lengths with shellac, epoxy or silicone binders to form a solid roll which is then called Bonded Mica Washers. Maximum use is in railways and grid resistors.



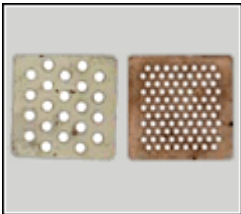
Microscope Research Mica

Superior and high quality of mica are suitably used in microscope slides for scientific research in laboratories. They have outstanding even surface, uniform layer, clear transparency and are scratch-free.



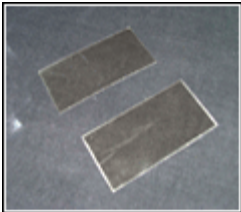
Mica Strainer Core

Metal casting foundries pour their melts through Mica Strainer Core to eliminate impurities and control the pour rate. Mica Strainer Core having 22 to 148 holes acts both as a choke and strainer during pour.



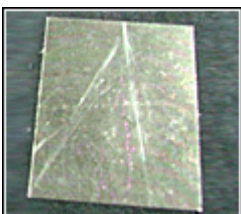
Backing Mica

Small cut parts of mica are effectively used as backing plate on both top and bottom sides of mica capacitors to give mechanical strength and rigidity.



Condensor Mica

Superior quality mica films with specified size and shape are screen printed with silver paste to be used as an electrode in the manufacturing of mica capacitors. The accuracy lies in precise thickness, clean-cut edges and flawless quality.



Mica Heating Elements

High resistance nichrome or electrical wire is wound around natural mica providing quality insulation for use as heating elements in irons, toasters, kettles, rice cookers and other electric heating appliances. It is available in all usual sizes/patterns in different voltage and wattage as per specifications.



2. Quality Mica

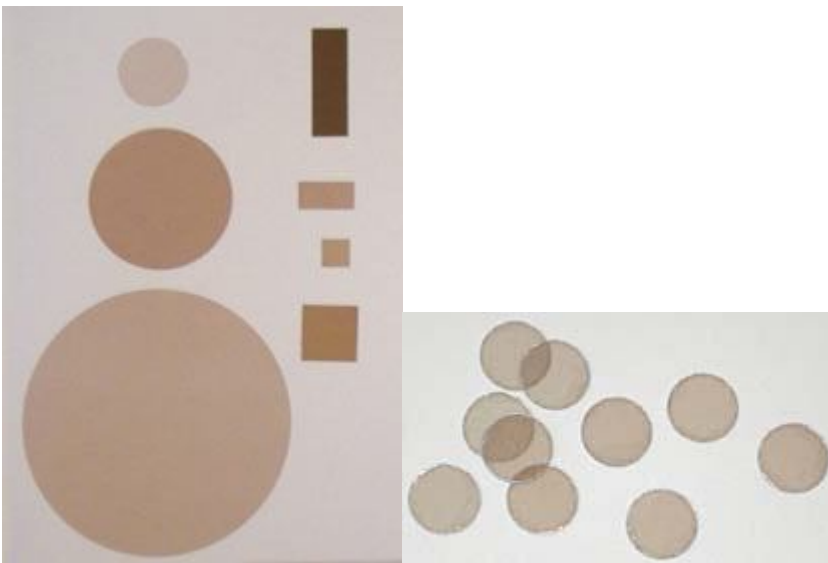
Specializes in HIGH-TECH MICA: Natural Muscovite MICA ASTM-V-1 QUALITY TO .0001" THICKNESS; OPTICALLY FLAT, CLOSE TOLERANCES, precision punching and lathe turning. We also supply ASTM-V-1 MICA SLIDES, MICA DISCS AND MICA INSULATORS. We are capable of fabricating Mica ASTM-V-1 products in different shapes, e.g. Mica Discs, Mica Windows in round, square, rectangle, electronic components or as per customer's drawings/specs or samples.

Freshly cleaved surfaces of mica are very useful for such electron microscopy substrate applications as carbon filming and particle spraying. The preferred mica for these applications is the muscovite type. The mica is die cut to the sizes offered. Thickness is variable between approximately 0.02 - 0.25mm (0.007 - 0.01") with some pieces laying outside this range.

Ruby muscovite color ranges from almost white through pink to a light ruby and into shades of brownish ruby and brown. It is considered of higher quality (compared to green muscovite) because of hardness and excellent cleavage properties permitting it to be split into the thinnest desired film without the risk of cracking. It is optically flat, resilient and incompressible. While it splits into thin films along its cleavage planes, yet it remains tough and elastic, even at high temperature.

Chemically, mica is a complex hydrous silicate of aluminum, containing potassium, magnesium, iron, sodium fluoride and/or lithium and traces of other elements. It is stable and inert to water, acids (except hydrofluoric and concentrated sulfuric acids), alkalis, conventional solvents and oil. Our mica has minimum inclusions, minimum air and bubbles and is clean. ASTM D-351 describes grading standards for mica.

Cleaving mica involves insertion of a sharp edge or point into an edge or corner of the sheet and gently prying apart the leaves. A good razor blade edge will do the job and in some cases a sharp pointed tweezer may accomplish the mission. The freshly exposed mica surface is very helpful as used in various Microscopist's technologies such as carbon coating and growing cells.



3. Gauge Glass Mica/Mica Shield

1st quality, commercial quality in different sizes. Precision punched to customer specific shapes, sizes and thickness. Used for liquid & water-level gauges of steam boilers, HP boiler gauge glass kits, etc.

Gauge Glass Mica/Mica Shield > Mica Wrappers

Available in different widths and in Muscovite Mica or Phlogopite Mica paper which is bonded with specially cured resins



Gauge Glass Mica/Mica Shield > Mica Condensor

Thin Mica films are wrapped around the flat part of copper. It plays a vital role in avoiding short circuits and heat transfer prevention during the operation of instruments. Cut condenser films are the means for long term reliability and cost effectiveness.



Gauge Glass Mica/Mica Shield > High Grade Mica

Hi-Grade Mica, Grade V2, 25 x 25mm



4. Transistor Mica

Transistor Mica > Mica Transistor

The Electronics Industries has a great use of Mica washers and insulators for both electrical and heat insulation. These various shapes of transistor Mica can increase the efficiency of products due to the excellent properties of Mica.



5. Mica Paper

Mica Paper is manufactured from superior quality mica scrap as a principal raw material by calcined (thermo-chemical) and uncalcined (hydro-chemical) process in the form of continuous rolls. Mica Paper being an artificial mica-based reconstituted product, it retains the essential heat resistivity and electrical characteristics of natural mica. Furthermore, it is cost effective and more homogeneous having greater consistency of thickness and uniformity of properties.

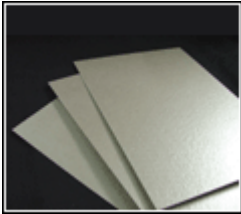
Assorted configurations of bonding resins (such as shellac, epoxy, alkyd, silicone, etc.) and backing materials (such as glass cloth, polyester film, polyester fleece, polyimide film, nomex paper, kapton film, etc.) are used according to thermal insulation class and requirements as demanded by applications.

Mica Paper has proved itself as a highly reliable product in place of conventional insulating materials to attract considerable attention and great expectations both domestically and internationally.

Mica Paper > Mica Paper Plates

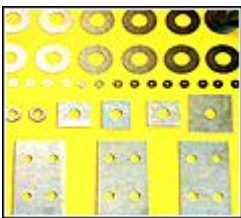
Are manufactured from mica paper bonded with heat resistant silicone resin consolidated under controlled heat and pressure to form rigid plates. In this process, the binder is completely cured. Characterised by excellent mechanical, thermal and electrical properties. It emits very little smoke at excessive temperatures. It provides uniform thickness and excellent punching capability.

Application : Ideally used in heating elements for domestic and industrial electrical appliances. Custom built fabricated parts are also extensively used in many insulating and thermal enduring applications.



Mica Paper > Mica Paper Plate Fabricated Parts

BLS fabricate very high quality mica components at the industries most competitive prices. We custom fabricate our mica components to your exact specifications or samples with a strong emphasis on assuring the best quality and best accuracy. Whether your order is small or large, our turn-around time is short.



Mica Paper > Mica Paper Plate Heating Elements

Mica Paper Plate or Heater Mica Plate are ideally suitable as base, support and covering plates for heating elements. They are the versatile solution for a number of domestic and industrial applications.

Made of high resistance Nickel-Chrome (NiCr) or Ferro-Chrome (FeCr) wire winded around Mica Paper Plate. It is available in all dimensions, patterns and designs in different voltage and wattage as per specifications.

Mica insulated heating elements have established to be a reliable performer providing long, efficient and dependable service life because of apparent distinctive thermal and electrical properties.

Application : Most appropriately used for warming and heating applications in toasters, roasters,

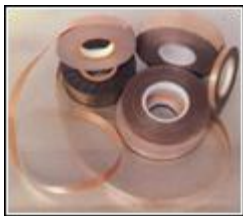
kettle, flat irons, hair dryers, popcorn makers, cookers, ovens, perculators, griddles, stoves and other electrical appliances/heaters. Also used in heating elements for strip heaters and band heaters where it is sheathed in stainless steel or brass or rust-resistant steel.



Mica Paper > Mica Paper Tapes

Are manufactured from mica paper to tape form and bonded with various heat resistive resins according to technical requirement and application. The tapes are reinforced with several different backing materials on one side or both sides. Depending upon the percentage level of binder present, these tapes are termed "Resin Rich" or "Resin Poor". Under heat and pressure, the resins are cured to form protective covering and mechanical stability. Are characterised by excellent thickness uniformity, good thermal properties high dielectric strength and high tensile strength.

Application : Mica Tapes perform tremendous flexibility and taping capability. Used in fire proof cables and in the insulation of coils of large rotating machines such as motors, generators, alternators and transformers.

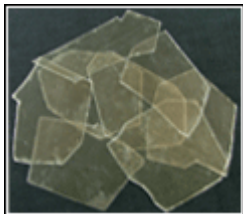


6. Proposed Mica

The crystals of mica extracted from the mines are in the form of rough lumps of irregular shape, size and thickness associated with impurities and structural imperfections. They have to undergo a lengthy operation of cutting, cleaning, sorting and processing from crude to commercial quality which involves skilled labour and intensive technique.

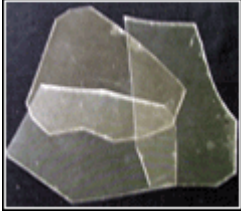
Proposed Mica >Mica Thins

Knife or scissor dressed sheet mica with irregular shape having a specified thickness range between 0.05 to 0.18 mm (0.002~0.007 inch or 2~7 mils) are classified as Mica Thins. It is used to manufacture various kinds of fabricated mica



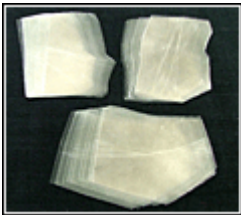
Proposed Mica >Mica Flims

Knife or scissor dressed sheet mica with irregular shape and a minimum thickness of 0.18 mm (0.007 inch or 7 mils) are called Mica Blocks. Block Mica are classified into thirteen size groups (ranging from OOE Special down to No. 7) and obtained in size as large as 30 - 35 cm sq. (12 - 14 inches sq.) beyond which is practically rare and far too expensive. It is available in sheets with both random (natural) and calibrated thickness as per demand. After undergoing size and quality grading, Mica Blocks are exported by BLS.



Proposed Mica > Mica Splittings

Laminae split from mica blocks and mica thins where the combined thickness of ten sheets taken together does not exceed 0.30 mm (0.012 inch or 12 mils) are classified as Mica Splittings. Splitting Mica is chiefly used in the manufacture of micanite or built-up mica products for ultimate use as an insulating material. It is available in "Loose Form" and "Book Form" types.



7. Silicon Micanite

Micanite or Built-Up Mica are manufactured with layers of overlapping mica splittings laid-up by hand or mechanical process and bonded with selected resins (such as shellac, epoxy, alkyd, silicone or other agents) in order to obtain characteristics for specific end-uses. It is then cured under high heat and pressure. Diverse range of composite binders are available according to temperature resistance and thermal insulation class namely, 'B' (130°C), 'F' (155°C) and 'H' (180°C) to match different applications.

For particular products, Micanite or Built-Up Mica are produced with numerous backing materials (such as glass fabric, polyester film, nomex paper, etc.) to form a laminate which provides additional mechanical strength, flexibility and tensile strength. Variations can be made in the method of production to manufacture thick or thin, stiff or flexible micanite products in the form of sheets, tapes, tubes and also moulded articles.

Micanite or Built-Up Mica is a vital insulating material employed for today's electrical engineering industry without which many machineries and equipments would have to be made to operate at greatly reduced efficiency.

Micanite > Mica Tubes

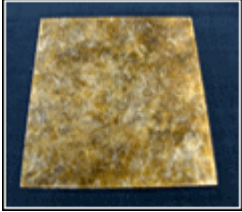
Mica Tubes are available in different size and lengths. Generally, used as a vital component in manufacturing of resistors, control centers, etc. Tubes can withstand temperatures ranging from 130 to 700 degree Celsius for high voltage applications. Mica tubes are fabricated as per customer specifications and drawings.



Micanite > Micanite Heat Resisting

Made from mica splittings bonded with shellac or other variety of resins. The percentage of binder content is kept relatively low. These plates are rigid, hard and dense. They possess excellent punching ability to any specified shape and design.

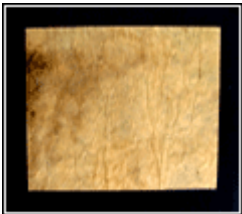
Application: Used for heating elements in electrical appliances, furnace insulation, washers for high temperature applications, heat barriers, etc.



Micanite > Mica Folium

Manufactured in continuous rolls comprising of mica splittings bonded with various kind of resins. It is reinforced on one side with kraft paper or other backing material based on required amount of mechanical strength, dielectric strength and flexibility demanded by the applications.

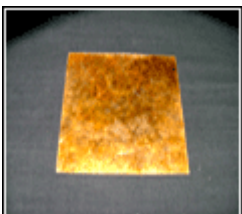
Application : Mainly used in forming tubes, casings and cylinders. Suitable for insulation of bus bars and also used as slot, wrapper, separator and layer insulation in both low and high voltage installations.



Micanite > Moulding Micanite

Made from mica splittings bonded with modified shellac or other resins. Moulding plates are rigid at room temperature but softens when heated at temperature between 100° to 140°C. They contain relatively high level of binder content to have necessary flexibility for easily moulding into any desired shape upon heating. On cooling, they will regain rigidity and retain the shape of moulded forms.

Application : Are chiefly used for the manufacture of commutator V-rings and cones, end-caps, channels, angles, bushings, decorative lamp shades, etc.

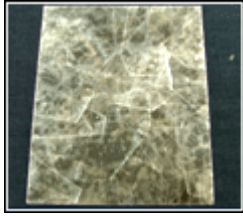


Micanite > Flexible Micanite Sheets

Made from mica splittings with heat resistive bonding resins and agents. They possess excellent flexibility and permits wrapping or winding of the sheets at room temperature without heating. The sheets may be supplied without reinforcing backings. Flexible Micanite are also reinforced with a protective backing on one or both sides which provides additional mechanical strength, dielectric

strength and flexibility.

Application : Particularly suitable where cold wrapping of insulation is required. Used in wrapped insulation of motors, generators and transformers, slot liner, ground insulation, electro-magnetic coils, armature windings, etc.



Micanite > Macanite VRings

Manufactured from Moulding Micanite in the form of V-Rings or Cones in different shapes and dimensions. V-Rings or Cones are initially cut out of Moulding Micanite sheets. It is then moulded under heat and pressure to match individual specifications with the help of moulds/dies specially prepared for the process. It gives excellent results but is labour intensive having slow production.

Application : Specially used as an insulation in commutators of high voltage rotating machines.



Micanite > Magnetic Tapes

Manufactured in continuous rolls comprising of mica splittings bonded with various resin binders thermally adapting to insulation class. Combination of various supporting or backing materials depending upon requirements and specifications. Reinforcing material provides uniformity, sufficient tensile strength and resistance to abrasion. For numerous applications, tapes made from mica splittings have been replaced and superseded by mica paper based tapes.

Application : Essentially used in coils of motors/generators/transformers, high voltage cables, insulating armature coils, windings of electrical machines, etc.



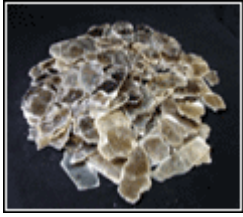
Micanite > Micanite Sheets

Mica sheets are available in different sizes and temperature. There are many uses for Micanite sheets, such as, heat barriers and fabrication of different components as per customer specifications and requirements. These sheets can withstand temperatures ranging up to 900 degrees Celsius.



Proposed Mica > Mica Scrap

Mica recovered by means of hammer crushing, processing and screening of crude mica having an average area between 12 to 50 mm sq. (1/2 to 2 inch sq.) is defined as Mica Scrap. All Mica Scrap are substantially free from mineral and non-mineral impurities as well as other foreign inclusions. It is exported to plants all over the world and finds paramount use as a primary raw material in the manufacture of mica paper or re-constituted mica. Domestically, Mica Scrap is used as a basic material for the manufacture of Ground Mica Flakes and Powders.



Mica Flakes is mica scrap ground into sizes ranging from 2 mesh to 30 mesh. This material is prepared mainly by the means of rotary hammer crushing machine in which the mica is literally beaten till such time that the required size is not achieved and the material passes out from graded sieves attached therein.



Mica Powder in various forms is obtained by grinding/breaking mica scrap, which is a slow, costly and extremely complicated process, because of the scrap being tough and having a plate like structure. Meticulous care and precaution has to be taken so that there is no deterioration of its natural brilliance, colour and properties. BLS has all facilities for processing varieties of mica powder are fully equipped with latest different pulverisers to meet customized requirements.

