

PRODUCT DATA

## US Samica 4373: SAMICAPOR MICA PAPER

### TAPES & WRAPPERS:

Samicapor tapes and wrappers are woven glass fabric/mica paper products, with polyester web covering the micapaper, specially designed for use in vacuum pressure impregnation (VPI) applications. The binder is a modified Class F epoxy resin, uncatalyzed, fully compatible with most commonly used VPI resins. Because of the low resin content, the tapes and wrappers are very porous and very flexible and conformable allowing tight hand or machine winding around both straight and irregular surfaces thereby helping to reduce air voids and therefore, the possibility of internal corona discharges.

### FEATURES:

- Low dissipation factor at operating temperature through 155°C with low factor VPI resin.
- Less than 1% dissipation factor tip up.
- High mica content.
- Good thermal conductivity.
- Excellent resin penetration.
- Compatible with most commercially available VPI resins.

### SUGGESTED USES:

- Ground insulation in vacuum pressure impregnated AC motor coils operating at low, medium and high voltages.
- Insulation for pole an interpole coils in traction motors.
- Insulation of magnet coils.

### APPLICATION:

Its slippery surface and flexibility allows hand or machine taping in most applications.

### SHELF LIFE:

2 years from date of manufacture.

### CONSTRUCTION & TYPICAL PROPERTIES OF SAMICPOR TAPES AS SUPPLIED:

1. **Thickness** (ASTM D-374, Method D) 0.0062 - 0.0085 in 0.157 - 0.216 mm

2. **Construction**

<i>Mica paper</i>	Average thickness weight	0.003 in	0.076 mm 112 gm/m <sup>2</sup>
<i>Glass fabric</i>	Average thickness weight	0.002 in	0.051 mm 27.1 gm/m <sup>2</sup>
<i>Non-woven polyester</i>	Average thickness weight	0.0015 in	0.038 mm 20 gm/m <sup>2</sup>
<i>Epoxy resin content</i>	Average % weight	15%	30 gm/m <sup>2</sup>

<b>3. Tensile Strength</b>	minimum	80 lb/in	14.3 kg/cm
<b>4. Electric breakdown strength as supplied</b>			
<i>1/4" electrode short time</i>	500 V/sec. rate of rise	425 VPM (min.)	16.7 kV/mm (min.)
<b>5. Thermal Class</b>	Impregnated with Class F VPI resin	155°C	

### TYPICAL PROPERTIES OF THE VPI PROCESSED SAMICAPOR INSULATION:

The final electrical and mechanical properties of the VPI processed and cured insulation will depend not only upon the specific grade of Samicapor, but also upon the VPI resin chosen, the method of preparation and the process used. Some general properties of a cured system are:

<b>Specific Gravity</b>	1.7 - 1.8 gr/cm <sup>3</sup>
<b>Thermal Class with a Class F</b>	Class F (311°F = 155°C)
<b>Coefficient of linear expansion</b>	10 to 11 x 10 <sup>-6</sup> 1 / °C
<b>Thermal Conductivity</b>	0.28 k cal/m.h. °C' or 0.32 watt/m °C'
<b>Short time dielectric strength</b>	
<i>(measured in oil, wall thickness ca. 1 mm)</i>	600-700 VPM 23-28 KV/mm

### APPLICATION OF SAMICAPOR TAPES & WRAPPERS:

To provide a high density insulation with good dielectric properties and high thermal conductivity, Samicapor tapes and wrappers should be applied to the coil as tight as possible.

Typical insulation wall thickness versus rated voltage of the machine are:

<b>Voltage (kV)</b>	2	4	6	8	10	13
<b>Thickness - Mil</b>	47	63	79	94	110	138
<b>mm</b>	1.2	1.6	2.0	2.4	2.8	3.5

### IMPORTANT NOTE:

#### TESTING PROCEDURES FOR UNIMPREGNATED "GREEN COILS"

Samicapor tapes and wrappers by themselves are not a "finished" insulation, but need to be VPI processed. Insulated coils, which are not VPI processed (green state) therefore, should not be tested the usual way (2 times rated voltages + 1000 volts).

The following testing procedures are suggested:

- Single coils outside stator, not impregnated: 50% of rated voltage
- Complete winding to ground, not impregnated: 50% of rated voltage.
- Complete winding VPI processed: 2 times rated voltage + 1000 volts.

**LIMITED WARRANTY/DISCLAIMER:** Isovolt/US Samica ("Seller") products are warranted to be free from defects in material and workmanship for the warranty period described below. Seller disclaims any other warranty, express or implied, including any warranty of merchantability, fitness for a particular purpose, or otherwise except as expressly set forth herein and there are no warranties which extend beyond the face hereof. **Limitation of Remedy:** Seller's liability for nonconformance of or defects in any goods sold or delivered to buyer is limited solely and exclusively to the replacement of the goods or a refund of the purchase price of such goods, at the Seller's option. **Limitation of Liability:** Seller shall have no liability for special, indirect or consequential damages, nor shall Seller's liability exceed the purchase price paid for goods purchased by the buyer regardless of whether the basis for any claim is in contract, tort, warranty, negligence, or any other theory, claim, or cause of action. **Warranty Period:** Seller's liability shall be limited exclusively to those goods discovered by the buyer to be nonconforming or defective within 30 days of purchase of such goods and of which written notice is given to seller within 45 days of discovery. **Selection of Product; Advice:** Seller provides technical specifications of its products and those specifications are not adapted or customized to its customers' requirements. Seller will consult with customers about the factors involved in making selections of the proper products for the customers' needs, and assist its customers with the selection of those products best suited to such needs. Such consultation and advice is necessarily limited by Seller's incomplete knowledge of its customers' products and needs and is therefore given without warranty or guaranty of any results a buyer may seek to achieve or of the suitability of Seller's products for buyer's circumstances. The risk of product selection shall be borne by buyer.