

- [Catalog](#)
- [Product Index](#)
- [Technical](#)
- [Ordering](#)
- [Company](#)
- [Links](#)
- [Home](#)

## Specimen Preparation and Embedding Supplies

- [CHEMICALS](#)
- [IMMUNOGOLD REAGENTS](#)
- [Catalog MEDIA KITS](#)
- [CALIBRATION AND GRAPHENE OXIDE](#)
- [Download Brochures](#)
- [New Products](#)
- [Requests](#)
- [Sales & Discontinued](#)
- [Specials](#)
- [NANOMANIPULATION AND FIB LIFT](#)
- [OUTS](#)
- [CALIBRATION STANDARDS, SPECIMENS](#)
- [SEM ACCESSORIES](#)
- [MAC STANDARDS](#)
- [SHIPPERS AND MAILERS](#)
- [ATOMIC FORCE, SCANNING TUNNELING MICROSCOPY](#)
- [TRANSMISSION ELECTRON MICROSCOPY](#)
- [SPECIMEN PREPARATION SYSTEM](#)
- [SPECIMEN PREPARATION](#)
- [General Supplies](#)
- [Beakers and Bottles](#)
- [Vials](#)
- [Boxes and Cocoons](#)
- [Sample Sets & Membrane](#)
- [Embedding Capsules](#)

### ► Mica Sheets and Disks

#### ► Mica Sheets and Disks

The highest quality mica (V-1 or V-2) for AFM applications to the Medium Quality (V-4 to V-6) for replication and thin film deposition.

#### Introduction

EMS Mica Sheets offer a clean surface for EM applications, carbon filming and particle spraying, as well as for AFM applications. There are two types of mica: muscovite and phlogopite. Generally, one differs from the other by color (Muscovite is Ruby, Green or White; Phlogopite is Amber, Yellow, or Silver). The maximum operating temperature for Muscovite is about 500-600°C and for Phlogopite is about 800-900°C. Our line consists of High Quality Muscovite Mica. This mica peels off very thin up to 0.0001" uniform layers, exposing "virgin" mica upon splitting.

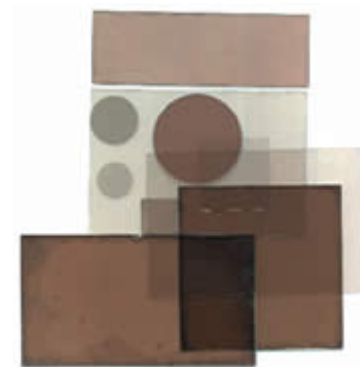
#### Characteristics:

Muscovite, potash type mica, sometimes known as granitic mica, is the best of all micas in dielectric strength, perfection of cleavage, and transparency.

It has the following chemical formula:  $H_2KAl_3(SiO_4)_3$ .

#### Chemical Composition:

Silica:	45.5%
Alumina:	37.5%
Potash:	12.0%
Water:	5.00%



- [Support](#) Cloth, Tissues, Swabs
- [COA](#) Scribers, Slide Coating
- [Forum](#) Molds, Chucks, Films
- [MSDS](#) Weighing Dishes
- [Tech Data Sheets](#) Glass Knife & Ultramicrotomy
- [Tech Manuals](#) Laboratory Gloves
- [Protocols & Tips](#) Ultramicrotomy Aids
- [Videos](#) Laboratory Dishes
- [Workshops](#) Tissue Grinders
- [Catalog Requests](#) Chambered Slides
- [Condition of Goods](#) Nanopatterned Cell Cultureware
- [Phone and Mail Orders](#) Plates, Wells, Culture
- [Quote Request](#) Mica, Sheets and Disks
- [Shipping](#) Fluoropolymer Films
- [World Distribution](#) Pipettes and Fillers
- [About Us](#) Blades, Scalpels, Saws and Handles
- [Contact](#) Tissue, Brain, Heart, and Spinal
- [Email Newsletter](#) Cord Matrices
- [News](#) Sampling Tools and Punches
- [Privacy Policy](#) Markers and Pens
- [Trade Shows](#) Slide Printer
- [World Distribution](#) Microscope Slides
- [EMS Academy](#) Spin Vials
- [Citifluor](#) Microsyringes
- [Diatome](#) Gel Electrophoresis and X-ray
- [Dumont](#) Autography
- [EMS Packaging](#) Petrographic
- [Ideal-tek](#) MATERIAL SCIENCES AND METROLOGY
- [Negaflex](#) CLEANING AND SCRIBING SYSTEMS AND TOOLS
- [Rubis](#) HISTOLOGY AND LIGHT MICROSCOPY
- [Summers Optical](#) PACKAGING RETRIEVAL
- [Links](#) SCANNING ELECTRON MICROSCOPE SUPPLIES
- [CRYO SUPPLIES](#)
- [DIATOME DIAMOND KNIVES](#)
- [PHOTOGRAPHY: FILM AND SUPPLIES](#)
- [TWEEZERS, TOOLS, GADGETS](#)
- [ILLUMINATORS, MAGNIFIERS, MICROSCOPES AND GRATICULES](#)
- [NIGHTSEA™ FLUORESCENCE VIEWING SYSTEMS](#)

It has a vitreous luster and is colorless to gray, brown, pale green, violet, dark olive green, or rose red. It may be transparent to translucent. It has strong double refraction and is optically negative. It loses water of constitution at 600°C and is practically non-magnetic. It exhibits pleochrism, which is the property of varying in color when viewed from different angles.

RUBY muscovite is harder than green and has a pale brownish red color in thin sheets (0.020") or ruby red in thick plates (0.4"). Ruby mica can be split easily into films of 0.001" or thinner because it has such excellent cleavage. In other colors, this thinness can be obtained but at a considerable risk of cracking.

### Physical Properties:

Hardness: Moh's scale:	2.8 - 3.2
Shore's Test:	80 - 150
Specific Gravity, g/cm <sup>3</sup> :	2.6 - 3.2
Tensile Strength, kg/cm <sup>2</sup> :	~ 1750
Compression Strength, kg/cm <sup>2</sup> :	1900 - 2850
Refractive Index (air=1):	1.56 - 1.60/61
Dielectric Strength @20°C in volt/mil:	3,000 - 6,000
Maximum Thermal Resistance:	625°C (1,157°F)
Modulus of Elasticity, kgf/cm <sup>2</sup> E(-3):	1400 - 2100
Optic Axial Angle:	50° - 75°
Coefficient of Expansion per °C:	Perpendicular to cleavage plane 9E(-4) - 36E(-4)
Calcining Temperature	700 - 800°C
Thermal Conductivity: gm.cal/sec/cm <sup>2</sup> /°C/cm:	~0.0013
Water of Constitution, %:	4 - 5
Moisture Absorption:	Very low
Apparent Electric Strength: (0.001-0.003" thick)	120 - 200kV/mm
Permittivity @ 15°C (60°F):	6 - 7
Power Factor (loss Tangent) @15°C:	0.0001 - 0.0004
Volume Resistivity @25°C (77°F) Ohm.cm:	4E(-15) - 2E(-17)
Acid Reaction :	Affected by HF

---

ENVIRONMENTAL

---

CLEANING SOLUTIONS

---

VACUUM PUMPS & EVAPORATION

---

CELL STRETCHERS

---

VIBRATION ISOLATION

---

DECONTAMINATORS

---

EQUIPMENT

---

SAFETY

---

LABELS, TAPES, DISPENSERS

---

STARTER EM KITS

---

EQUIPMENT REPAIR

---

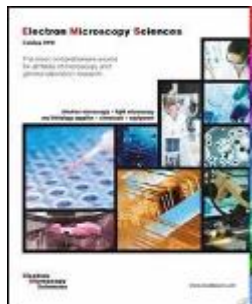
### Email Newsletter

Sign up and be the first to learn about new products for your laboratory and product specials.

### Contact

P.O. Box 550  
1560 Industry Road  
Hatfield, PA 19440  
Phone: 215-412-8400  
Toll Free: 800-523-5874  
Fax: 215-412-8450  
E-Mail: [info@emsdiasum.com](mailto:info@emsdiasum.com)

### View our virtual catalog



EMS Forum

### Quality Determination:

The quality of muscovite mica is verbal determination by visual quality classification ASTM (D351-57T) from the best V-1 to the worst is V-10A.

1. V-1: Clear - Hard, of uniform color, nearly flat, free of all stains, foreign inclusion, cracks, and other similar defects.
2. V-2: Clear and Slightly Stained - Hard, of uniform color, nearly flat and may contain slight crystallographic discoloration, and very slight air inclusions and not more than one fourth of the usable area.
3. V-3: Fair Stained - Hard, of uniform color, may contain slight waves, slight crystallographic discoloration, and slight air inclusions and not more than one-half of the usable area.
4. V-4: Good Stained - Hard, of uniform color, may contain medium waves slight crystallographic discoloration, and medium air inclusion in not more than two-third of the usable area.
5. V-5: Stained A Quality - Hard, may contain medium air inclusions, uniformly distributed in the usable area; slight green vegetable stains, medium waviness, and heavy waves if specified.
6. V-6: Stained B Quality - Hard, may contain heavy air inclusions and heavy waves, medium green vegetable stains, slight black and red dots (mineral) and clay stains.
7. V-7: Heavy Stained - Hard, and may contain heavy air inclusions and waves, slight light black and red dots (mineral), medium cloudy stains, clay stains and green stains (vegetable). Soft, buckles, ridges, and sand blast acceptable if specified.
8. V-7A: Densely Stained - Hard and soft. May contain heavy waves and air inclusions, cloudy stains. High black and red dots (mineral). Medium black and red stained (mineral), buckles, and ridges. Also, green stain (vegetable type), clay stains, herringbones, and sand blast.
9. V-8: Black Dotted - Hard, may contain medium waves, heavy air inclusions, cloudy stains, light black and red dots (mineral), and green stains (vegetable).
10. V-9: Black Spotted - Hard, may contain medium waves, heavy air inclusions, cloudy stains, light black and red dots (mineral), and green stains (vegetable type), slight black stains (mineral), and sand blast.
11. V-10: Black Stained - Hard, may contain medium waves, heavy air inclusions, cloudy stains, light black and red dots (mineral), green stains (vegetable type), and sand blast, medium black stains (mineral), slight red stains (mineral), and clay stains.
12. V-10A: Densely Black and Red Stained - Hard, may contain heavy waves, air inclusion, cloudy stains, light black and red dots (mineral), red stains (mineral), black and red stains (mineral), green stains (vegetable type), and sand blast, very dense black and red stains (mineral), and slight clay stains. Soft if specified.

[Login / Sign up](#)



Follow us on...



([v/user/emsdiasum](#))

## Electron Microscopy Sciences

The most comprehensive source of products for all fields of microscopy and general laboratory research available.  
#EMShasit

Follow (<https://www.in>)



(<https://ir>)



(<https://ir>)



(<https://ir>)



### Applications:

In general, for those whom are using mica for the making of carbon support films, thin films coatings research, and some AFM studies where HOPG are used to taking place, the mica V-4 or V-5 is recommended. (Mica must always use freshly cleaved surfaces).

For AFM and SPM calibration, V-1 or V-2 is recommended. However, we believe that it is important that you know what kind of mica is being used in your lab. The information on the mica as given above should be used to make your choice.

Here at EMS, we try to stock a variety of sizes with different thicknesses and classifications of quality for convenience.

### Ordering

#### Muscovite Mica V-1 Quality:

Catalog #	Mica Size	Quality	Thickness (mm)	Pack	Price	
71855-01	50mm x 75mm	V-1	0.15 - 0.21	each	8.00	<a href="#">Add to Cart</a>
71855-01-10				10/pk	60.00	<a href="#">Add to Cart</a>
71855-05	25mm x 75mm	V-1	0.26 - 0.31	each	5.00	<a href="#">Add to Cart</a>
71855-05-10				10/pk	36.00	<a href="#">Add to Cart</a>
71855-10	25mm x 25mm	V-1	0.15 - 0.21	each	3.00	<a href="#">Add to Cart</a>
71855-10-10				10/pk	25.00	<a href="#">Add to Cart</a>
71855-11	25mm x 25mm	V-1	0.26 - 0.31	each	5.00	<a href="#">Add to Cart</a>
71855-11-10				10/pk	25.00	<a href="#">Add to Cart</a>
71855-15	15mm x 15mm	V-1	0.15 - 0.21	each	8.00	<a href="#">Add to Cart</a>
71855-15-10				10/pk	15.00	<a href="#">Add to Cart</a>
71856-01	9.5mm Diameter	V-1	0.15 - 0.21	each	1.95	<a href="#">Add to Cart</a>
71856-01-10				10/pk	10.00	<a href="#">Add to Cart</a>
71856-02	12mm Diameter	V-1	0.15 - 0.21	10/pk	13.00	<a href="#">Add to Cart</a>
71856-03	15mm Diameter	V-1	0.15 - 0.21	10/pk	15.00	<a href="#">Add to Cart</a>
71856-04	20mm Diameter	V-1	0.15 - 0.21	10/pk	21.00	<a href="#">Add to Cart</a>

#### Muscovite Mica V-2 Quality:

Catalog #	Mica Size	Quality	Thickness (mm)	Pack	Price	
71857-01	50mm x 75mm	V-2	0.15 - 0.21	each	7.00	<a href="#">Add to Cart</a>
71857-01-10				10/pk	70.00	<a href="#">Add to Cart</a>

71857-05	25mm x 75mm	V-2	0.26 - 0.31	each	5.00	<a href="#">Add to Cart</a>
71857-05-10				10/pk	50.00	<a href="#">Add to Cart</a>
71857-10	25mm x 25mm	V-2	0.15 - 0.21	each	2.50	<a href="#">Add to Cart</a>
71857-10-10				10/pk	15.00	<a href="#">Add to Cart</a>
71857-11	25mm x 25mm	V-2	0.26 - 0.31	each	2.50	<a href="#">Add to Cart</a>
71857-11-10				10/pk	15.00	<a href="#">Add to Cart</a>
71857-15	15mm x 15mm	V-2	0.15 - 0.21	each	2.50	<a href="#">Add to Cart</a>
71857-15-10				10/pk	14.00	<a href="#">Add to Cart</a>
71858-01	9.5mm Diameter	V-2	0.15 - 0.21	each	2.00	<a href="#">Add to Cart</a>
71858-01-10				10/pk	12.00	<a href="#">Add to Cart</a>

#### Muscovite Mica V-4 Quality:

Catalog #	Mica Size	Quality	Thickness (mm)	Pack	Price	
71853-01	50mm x 75mm	V-4	0.15 - 0.21	10/pk	60.00	<a href="#">Add to Cart</a>
71853-05	25mm x 75mm	V-4	0.26 - 0.31	10/pk	40.00	<a href="#">Add to Cart</a>
71853-10	25mm x 25mm	V-4	0.15 - 0.21	10/pk	20.00	<a href="#">Add to Cart</a>
71853-11	25mm x 25mm	V-4	0.26 - 0.31	10/pk	22.00	<a href="#">Add to Cart</a>
71853-15	15mm x 15mm	V-4	0.15 - 0.21	10/pk	16.00	<a href="#">Add to Cart</a>
71854-01	9.5mm Diameter	V-4	0.15 - 0.21	10/pk	10.00	<a href="#">Add to Cart</a>
71854-15	12.7mm Diameter	V-4	0.15 - 0.21	10/pk	15.00	<a href="#">Add to Cart</a>

#### Muscovite Mica V-5 Quality:

Catalog #	Mica Size	Quality	Thickness (mm)	Pack	Price	
71850-01	50mm x 75mm	V-5	0.15 - 0.21	10/pk	16.00	<a href="#">Add to Cart</a>
71851-05	25mm x 75mm	V-5	0.26 - 0.31	10/pk	10.00	<a href="#">Add to Cart</a>
71850-10	25mm x 25mm	V-5	0.15 - 0.21	10/pk	10.00	<a href="#">Add to Cart</a>
71850-11	25mm x 25mm	V-5	0.26 - 0.31	10/pk	12.00	<a href="#">Add to Cart</a>
71850-15	15mm x 15mm	V-5	0.15 - 0.21	10/pk	8.00	<a href="#">Add to Cart</a>
71852-01	9.5mm Diameter	V-5	0.15 - 0.21	10/pk	10.00	<a href="#">Add to Cart</a>

#### ►Metal Specimen Discs

*For use with the Atomic Force Microscope.*

These are high quality metal discs with smooth edges and flat surfaces for use in Atomic force Microscopy.



### Ordering Information

<b>75010-10</b>	10 mm Specimen Metal Discs for AFM	50/pk	29.00	<a href="#">Add to Cart</a>
<b>75010-12</b>	12 mm Specimen Metal Discs for AFM	50/pk	29.00	<a href="#">Add to Cart</a>
<b>75010-15</b>	15 mm Specimen Metal Discs for AFM	50/pk	30.00	<a href="#">Add to Cart</a>
<b>75010-20</b>	20 mm Specimen Metal Discs for AFM	50/pk	53.00	<a href="#">Add to Cart</a>

### ► Gold Coated Specimen Discs

These metal specimen discs are high quality – made of magnetic stainless steel coated with 1µm gold. They have smooth edges and consistently flat surfaces to ensure secure holding. Specimens can be mounted directly on the metal discs with double sided tape, epoxy or conductive paste. If a mica specimen support is needed, the mica discs can be easily mounted on the metal support discs.



These discs offer excellent resistance to electromigration, high electrical and thermal conductivity, and high temperatures making them excellent substrates for mounting specimens.

Packaged in a polystyrene disc storage box.

### Ordering Information

<b>75011-10</b>	10 mm Gold Coated Specimen Discs for AFM	4/pk	48.00	<a href="#">Add to Cart</a>
<b>75011-12</b>	12 mm Gold Coated Specimen Discs for AFM	4/pk	49.00	<a href="#">Add to Cart</a>
<b>75011-15</b>	15 mm Gold Coated Specimen Discs for AFM	4/pk	52.50	<a href="#">Add to Cart</a>
<b>75011-20</b>	20 mm Gold Coated Specimen Discs for AFM	4/pk	58.00	<a href="#">Add to Cart</a>

### ► Magnetic Disc Storage Boxes for AFM

*Store AFM/STM discs in a dust-free environment\**

These storage boxes have a magnet base to hold the magnetic stainless steel AFM discs and magnetic AFM sample holders.

They are made of polystyrene with hinged lids.

Perfect for storing, archiving and transporting AFM discs.



75012-01

## Specifications

EMS Cat. #	Number of Discs	Inside Dimensions	Color
75012-01	Holds 1-4 AFM Discs	32 x 32 x 25 mm	Clear
75012-02	Holds 4-8 AFM Discs	72 x 30 x 19 mm	Clear
75012-03	Holds 6-12 AFM Discs	72 x 51 x 12.5 mm	Clear/Black



75012-02



75012-03

**\*Note:** Carrier only - Discs **not** included

## Ordering Information

75012-01	Small Magnetic Disc Storage Box for AFM	each	6.50	<a href="#">Add to Cart</a>
75012-02	Medium Magnetic Disc Storage Box for AFM	each	12.50	<a href="#">Add to Cart</a>
75012-03	Large Magnetic Disc Storage Box for AFM	each	14.50	<a href="#">Add to Cart</a>

### ► Pick-up Tool for AFM

Retrieve your discs from their carrier with this magnetic pick-up tool. Made with a plastic handle, a stainless steel shaft and a magnetic pad at the tip. Your fingers never need to touch the disc.



75013	Magnetic Pick-up Tool for AFM	each	4.95	<a href="#">Add to Cart</a>
-------	-------------------------------	------	------	-----------------------------

### ► Disc Gripper for AFM

Use these unique grippers to easily pick up AFM/STM discs from a flat surface. Features a protective rubber-coated tip.



Available in 4 sizes.

75009-10	10 mm Disc Gripper for AFM	each	13.50	<a href="#">Add to Cart</a>
75009-12	12 mm Disc Gripper for AFM	each	13.50	<a href="#">Add to Cart</a>
75009-15	15 mm Disc Gripper for AFM	each	13.50	<a href="#">Add to Cart</a>
75009-20	20 mm Disc Gripper for AFM	each	13.50	<a href="#">Add to Cart</a>

**Alcar-Fluoropolymer Film** ►►

© 2019 **E**lectron **M**icroscopy **S**ciences

Electron Microscopy Sciences specializes in the manufacturing, preparation and distribution of the highest quality laboratory chemicals and microscopy supplies and equipment for electron microscopy, light microscopy, and histology.