

# Pionite®

## MICASTAT® Technical Bulletin

### Product Identification

Micastat is an electrostatic dissipative laminate designed for work surfaces in the manufacture and assembly of static-sensitive electronic components. Micastat offers the user a static safe work surface with the performance of a high pressure decorative laminate. Due to the unique composition of this product, Micastat colors and corresponding colors in Standard Pionite are not exact matches. Sample evaluation is recommended.

Micastat offers:

- Low electrical resistance. Surface to ground less than  $3 \times 10^8$  ohms.
- Absolute charge drainage and zero voltage suppression. Micastat exhibits no voltage suppression and dissipates a 5,000 volt static charge to zero in less than 0.01 second per FTM-101C at 5 to 95 percent relative humidity.
- Micastat is postformable, but will require a larger radius than standard laminate.
- Resistant to most common solvents, hot solder and fluxes.
- Micastat is guaranteed to maintain its static control properties.

### Product Description

Standard Nominal Sizes				
Type	Thickness	Width	Length	Colors*
A28 (in)	0.028	30, 36, 48, 60	96, 120, 144	Solids Only
(mm)	0.7	762, 914, 1219, 1524	2438, 3048, 3658	
A38 (in)	0.036	30, 36, 48, 60	96, 120, 144	Solids Only
(mm)	0.9	762, 914, 1219, 1524	2438, 3048, 3658	

\*Due to the unique composition of this product, Micastat colors and corresponding colors in standard Pionite are not exact matches. Sample evaluation is recommended.

### Finish

Micastat is available in Suede finish only. Suede finish is a low gloss, textured finish with a 60 degree gloss meter reading of  $8 \pm 3$  gloss units.

### Typical Uses

Micastat laminate was developed specifically for surfacing workstations where static-sensitive electronic components are manufactured. They also work well in hospitals, medical facilities, and clean rooms as they provide a surface that will not attract dust or dirt particles.

MICASTAT® is a registered trademark of Desco Industries, Inc. and manufactured under one or more of the following U.S. patents: 4,455,350, 4,589,945, 4,645,717, 4,454,199. For information about additional static dissipative products contact Charleswater Desco Industries, Inc. at (617) 821-8370. Tempilaq is a registered trademark of Tempil Division of Big Three Industries, INC., South Plainfield, NJ

### Postforming Tips

When working with Micastat, these techniques will produce a quality application.

1. Proper conditioning of the laminate, substrate, and backing sheet minimizes possible warping, shrinking, or expansion of assembled panels. Ideally, all components should be conditioned at 70° F to 75° F (21° C to 25° C) and 45 to 50 percent relative humidity for 48 hours prior to assembly.
2. The radiused edge of substrate must be smooth, rounded, and free of irregularities and loose particles.
3. Lead-in cracks may be minimized by ensuring a smooth cut on the edge of the laminate.
4. Always bond Micastat to a suitable substrate such as medium to high density fiberboard, or particleboard. It should not be glued directly to plaster walls, gypsum wallboard, concrete, or metals.
5. Recommended adhesives include postformable solvent or water-based contact cement, white glue (PVA), and epoxy. Consult your adhesive supplier for specific application requirements.
6. The use of a backing sheet is recommended to minimize warpage. The thickness of the backing sheet should be relatively equal to the thickness of the decorative laminate on the face of the assembly.
7. The decorative surface to be formed should be heated to a temperature of 325° F to 375° F (165° C to 190° C).
8. The desired heat-up rate to 325° F (165° C) should be one second for every 0.001" of thickness (i.e., 28 seconds for A28, 36 seconds for A38).
9. Forming should be accomplished within 5 seconds of achieving proper surface temperature.
10. Heat-up rates of laminate are affected by thickness, color, and finish. Temperatures should be verified by temperature-indicating wax (Tempilaq®).

### Fabrication Tips

1. All saw blades and router bits used for cutting should be carbide tipped. Feed rate should be slow and tool speed should be high. To minimize the development of surface scratches caused by router bits, lubricating the laminate edge with a wax stick is recommended prior to tooling.
2. Inside corners of cutouts for electrical outlets, sinks, etc., should have a minimum radius of 1/8" (3 mm) and be filed smooth. This reduces the likelihood of stress cracks.
3. All edges of laminate should be filed smooth with file direction towards substrate to help prevent stress cracks and to minimize chipping.
4. When nails or screws must be used, it is advisable to first drill an oversized hole through the laminate. This reduces the likelihood of stress cracks.

## Fabrication Tips (cont.)

- Micastat is intended for interior use only, and should not be exposed to extreme humidity, continuous sunlight, or temperatures above 275° F (135° C) for extended periods of time.
- Work surfaces must be grounded for proper dissipation.

## Technical Information

### Physical Properties

TEST		NEMA LD 3-1995 Test Method	TYPICAL MICASTAT VALUES A28	NEMA STD.* VGP	TYPICAL MICASTAT VALUES A38	NEMA STD.* HGP
Thickness	(in.) (mm)		0.028 ± 0.003 0.7 ± 0.08	0.028 ± 0.004 0.7 ± 0.1	0.036 ± 0.003 0.9 ± 0.08	0.039 ± 0.005 1.0 ± 0.12
Appearance		3.1	Complies		Complies	
Light Resistance		3.3	Slight effect	Slight effect	Slight effect	Slight effect
Cleanability		3.4	5	20 (max)	5	20 (max)
Stain 1-10			No effect	No effect	No effect	No effect
Stain 11-15			No effect	Moderate effect	No effect	Moderate effect
Boiling Water Resistance		3.5	Moderate effect	Slight effect	Moderate effect	Slight Effect
High Temperature Resistance		3.6	Slight effect	Slight effect	Slight effect	Slight effect
Ball Impact Resistance	(in.) (mm)	3.8	25 635	20 (min.) 508 (min.)	35 889	30 (min.) 762 (min.)
Dimensional Change		3.11				
Machine Direction	(%)		0.40	1.10 (max.)	0.40	1.10 (max.)
Cross Direction	(%)		0.80	1.40 (max.)	0.80	1.40 (max.)
Wear Resistance	(cycles)	3.13	600	400 (min)	600	400 (min)
Formability		3.14				
Outside Radius	(in) (mm)		1/2 13	1/2 (min.) 13 (min.)	5/8 16	5/8 (min.) 16 (min.)
Inside Radius (Cove)	(in) (mm)		3/16 5	Not Applicable Not Applicable	3/16 5	Not Applicable Not Applicable
Blister Resistance	(sec)	3.15	50	40 (min.)	60	55 (min.)

\*Micastat is not covered by ANSI/NEMA LD3 specifications; however, the physical properties are similar to VGP and HGP grades.

### Electrical Properties

RTG less than 3 x 10 <sup>8</sup> ohms	EOS/ESD-S4 DIN 53 276
RTT less than 1 x 10 <sup>8</sup> ohms greater than 1 x 10 <sup>5</sup> ohms at 12% RH - 50% RH	EOS/ESD-S4.1 ASTM F-150-72 NFPA-99
RVOL less than 10 <sup>8</sup> ohms	ASTM D257
Charge Decay occurs within .009 seconds	FTMS 101C METHOD 4046
Voltage Suppression = 0 (max)	ETS METHOD

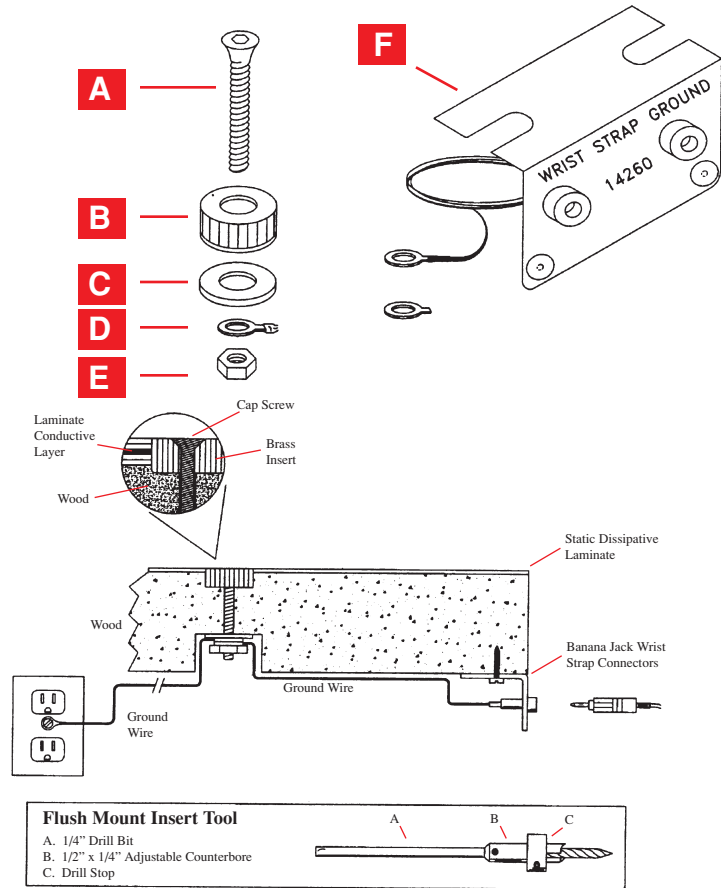
# Micastat Grounding Procedure

## Description

The flush mount insert provides an excellent “flush to surface” ground for Micastat ESD laminate. The system uses a straight knurl for optimal electrical contact with the laminate. The flush mount insert system includes all components necessary to ground the laminate. Also included is all the hardware required for the attachment of two banana jacks to the front surface. For easy installation, use the flush mount tool shown below.

## Key:

- A.** Flat socket cap screw 8-32-1, secures the brass insert into place
- B.** Brass insert, 1/2” dia. straight knurl provides electrical connection to the laminate
- C.** Washer, Flat, 1/4” ID, 1/2” OD, provides a flat surface for securing ring terminals
- D.** Terminal, ring, mechanically connects up to 16 gauge wire to the flush mount insert
- E.** Nut, 8-32, used to fasten flush mount insert system together
- F.** Dual banana jack terminals, 10’ of 22 gauge wire, provides two banana plug connections in front of work surface grounded to the flush mount insert system



## Care and Maintenance

Micastat provides a durable surface that is easy to maintain using ordinary care.

To maintain the laminate’s lasting beauty, cleaning with a solution of warm water and liquid dishwashing detergent is all that should be required in most cases.

Stains may be removed with most non-abrasive household cleaners such as FORMULA 409®, FANTASTIK®, GLASS PLUS®, or WINDEX WITH AMMONIA D®. Light scrubbing with a soft bristled brush may be necessary to remove stains from the depth of the structure on some textured surfaces.

If the stain persists, use a paste of baking soda and water and apply with a soft bristled brush. Light scrubbing for 10-20 strokes should remove most stains. Although baking soda is a low abrasive, excessive scrubbing or exerting too much force may damage the decorative surface.

Stubborn stains that resist any of the above cleaning methods may require the use of undiluted household bleach. Apply the bleach to the stain and let stand no longer than 1 1/2 minutes. Rinse thoroughly with warm water and wipe dry. This step may be repeated if the stain appears to be going away and the color of the laminate has not been affected. **WARNING:** Prolonged exposure of the laminate surface to bleach will cause discoloration.

Many commercially available products contain substances that may damage or discolor a laminate surface. **ABRASIVE CLEANERS SHOULD NOT BE USED.** Particular care should be used with any products labelled CAUTION or WARNING. Any questions or concerns should be referred to the product’s manufacturer or call 1-800-PIONITE. Do not allow harsh materials to remain in contact with the laminate surface. Examples of these are as follows:

- Toilet bowl cleaners
- Hydrogen Peroxide
- Oven cleaners
- Drain cleaners
- Metal cleaners and polishes
- Chlorine bleach
- Coffee pot cleaners
- Hard water stain removers
- Fruit and berry juice
- Tub and tile cleaners

It is important that no film or insulative barrier be left by the cleaning agent as this will reduce the grounding effect of the laminate.

Formula 409 is a registered trademark for The Clorox Company of Oakland, CA 94612; Glass Plus and Fantastik are registered trademarks for The Dow Chemical Company of Indianapolis, IN 46268-0511; Windex is a registered trademark for S.C Johnson & Sons INC. of Racine, WI 53403-5011

Pionite® Decorative Surfaces • A Subsidiary of Panolam Industries International Inc.  
One Pionite Road • Auburn, ME 04211-1014 • Phone: 800-PIONITE (746-6483) • 207-784-9111 • Fax: 207-784-0392 • www.pionite.com

## Manufacturing Headquarters

Pionite® Decorative Surfaces  
One Pionite Rd.  
P.O. Box 1014  
Auburn, ME 04211-1014  
(207) 784-9111  
800-PIONITE (746-6483)  
www.pionite.com

A Subsidiary of Panolam Industries International, Inc.

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## Limited Warranty

Subject to the limitations set forth below, Pionite® Decorative Surfaces expressly warrants that our products are reasonably free of defects in material and workmanship, and when properly handled and fabricated will conform, within accepted tolerances, to applicable manufacturing specifications as set forth in our technical brochure. This warranty shall extend to the original buyer for a period of twelve (12) months from the date of shipment of this product by Pionite® Decorative Surfaces, and shall not be assignable by the original buyer. This warranty does not cover damage resulting from accident, misuse, alteration, abuse or lack of reasonable care.

Due to the variety of uses and applications to which this product may be put, and because the manufacturer has no control over the end products fabricated, the warranty set forth above is exclusive and in lieu of all other warranties, express or implied, in fact or by operation of law or otherwise, or arising by course of dealing or performance, custom or usage in the trade, including, without limitation, the implied warranties of fitness for a particular purpose and merchantability, and Pionite® Decorative Surfaces shall have no obligation or liability to any person or entity in connection with or arising from the furnishing, sale, installation or repair, use or subsequent sale of any product supplied by it.

The buyer's sole and exclusive remedy for any noncompliance with the express warranty set forth above shall be limited to repair or replacement of the defective product, or, in the event that repair or replacement is not feasible, return of the product and refund of the purchase price.

Under no circumstances shall the manufacturer be liable in excess of the purchase price of this product, in either tort or contract or otherwise, for any loss, damage or injury in connection with or arising from the purchase, use, or inability to use this product, or for any special, indirect, collateral, incidental, consequential or exemplary damages such as, but not limited to, loss of anticipated profits or other economic loss. Because some states do not allow the exclusion or limitation of incidental or consequential damages, this limitation may not apply to you.

Retaining all documentation after purchasing laminate will significantly expedite claim resolution.