



HIGH PERFORMANCE VpCI™ PACKAGING

VpCI™ -125

Shrink Static Dissipative Film and Bags



PRODUCT DESCRIPTION

VpCI-125 Shrink Static Dissipative Film and Bags are unique in their ability to prevent corrosion and ESD damage. This film combines the latest plastic technology with the most effective corrosion protection for different metals and with the strong static dissipative properties. Cortec® VpCI films and bags replace conventional rust preventatives such as oils and desiccants. You save even more because Cortec® VpCI packaging eliminates all the degreasing or coating removal required in the past. Your product can now be used immediately. VpCI™ -125 bags effectively protect components from electrostatic discharge. VpCI-125 conforms to MIL-PRF-81705D (Static Dissipative Packaging Materials).

The static dissipative properties of VpCI-125 are humidity independent; its unique composition does not require the presence of moisture to function. VpCI-125 doesn't contain free amines, phosphates, silicones and other harmful materials. VpCI-125 is non-toxic.

ADVANTAGES

- Provides multimetal VpCI protection to ferrous and non-ferrous metals
- Prevents ESD damage
- Humidity independent - does not require the presence of moisture on the surface to provide protection against triboelectric charge generation
- Does not affect optical properties
- Does not affect plastics used in electronic industry
- Does not contain free amines or toxic compounds
- Contains Vapor phase Corrosion Inhibitors (VpCI) to protect void spaces and recessed areas
- Strong puncture resistant film

VARIETY OF SIZES

VpCI-125 bags are available in standard and custom-size bags in both heat-sealable and zipper closure form, film and tubing.

VpCI-125 bags are constructed of static dissipative polyethylene containing Vapor phase Corrosion Inhibitors in thicknesses from 2-6-mils (50-150 microns), with a maximum tube size of 50" (1.3 m). Standard bag sizes are 4" x 6" (10 x 15 cm), 6" x 8" (15 x 20 cm), 8" x 10" (20 x 25 cm), and 10" x 12" (25 x 31 cm).

PERFORMANCE

ESD Properties conform to MIL PF-81705 D (Type I, Class 1)

- Surface Resistivity (ASTM B 257) between 1×10^5 and $10^{12} \Omega/\text{sq}$.
- Static Decay Rate (Method 4046, MIL STD-3010A) - Less than 2 seconds

APPLICATIONS

VpCI-125 Shrink Static Dissipative Bags and Film are recommended for packaging of static-sensitive and non-static sensitive components where triboelectric



CORTEC
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Environmentally Safe VpCI™/MCI® Technologies

charge generation and corrosion are concerns. They are recommended for packaging of integrated circuits, printed circuit boards, PCB components, telecommunications equipment, electronic and electrical panels and enclosures.

PACKAGING AND STORAGE

VpCI-125 should be stored indoors at ambient temperatures, sealed in their original packaging. The shelf life is up to one year in original packaging. Film should be sealed to minimize air exchange.

METALS PROTECTED

VpCI-125 forms a monomolecular layer on metal substrates, which does not interfere with the physical or chemical properties of electronic components. Metals VpCI-125 protects include:

- Steel
- Copper, alloys
- Aluminum, alloys
- Brass
- Solder
- Silver
- Nickel
- Various plated substrates

For metals not specifically listed above, contact Cortec for information regarding their protection.

FOR INDUSTRIAL USE ONLY

KEEP OUT OF REACH OF CHILDREN

KEEP CONTAINER TIGHTLY CLOSED

NOT FOR INTERNAL CONSUMPTION

CONSULT MATERIAL SAFETY DATA SHEET FOR MORE INFORMATION

LIMITED WARRANTY

All statements, technical information and recommendations contained herein are based on tests Cortec Corporation believes to be reliable, but the accuracy or completeness thereof is not guaranteed.

Cortec Corporation warrants Cortec® products will be free from defects when shipped to customer. Cortec Corporation's obligation under this warranty shall be limited to replacement of product that proves to be defective. To obtain replacement product under this warranty, the customer must notify Cortec Corporation of the claimed defect within six months after shipment of product to customer. All freight charges for replacement products shall be paid by customer.

Cortec Corporation shall have no liability for any injury, loss or damage arising out of the use of or the inability to use the products.

MECHANICAL PROPERTIES

| Test Method | VpCI-125 (4-mil) | Non-corrosion Inhibiting Low Density Polyethylene Film (4-mil) |
|---|------------------|--|
| Tensile Strength at Break, ASTM D-882 (lbf) | 19.25/19.00 | 10.20/10.06 |
| % Elongation at Break, ASTM D-882A (%) | 594.4/416.0 | 378.70/350.3 |
| Tensile Strength at Peak, ASTM D-882 (psi) | 3453.20/2735.82 | 2665.26/2704.52 |
| Tear Test, ASTM D 1922 (Gf) | 1162.67/2549.33 | 437.33/608.00 |
| Puncture Resistance, ASTM D 3420 (J) | 1.41 | 1.26 |

Machine Direction/Cross Direction

ESD PROPERTIES

| Test | MIL-PRF-81705D Requirements | VpCI-125 (4-mil) |
|---|-----------------------------|--------------------------------|
| Surface Resistivity (outside surface) | <10 ¹² ohm/sq | 1.46 x 10 ¹¹ ohm/sq |
| Surface Resistivity (inside surface) | <10 ¹² ohm/sq | 1.14 x 10 ¹¹ ohm/sq |
| Static Decay (+5000 Volts outside surface, 1% cutoff) | <2 sec | 0.34 sec |
| Static Decay (-5000 Volts outside surface, 1% cutoff) | <2 sec | 0.42 sec |
| Static Decay (+5000 Volts inside surface, 1% cutoff) | <2 sec | 0.34 sec |
| Static Decay (-5000 Volts inside surface, 1% cutoff) | <2 sec | 0.36 sec |

Shrink Test (ASTM D-2732)

| VpCI-125 Shrink Film (6mil) B.U.R. = 2.5:1 | Machine Direction Shrink (%) | Cross Direction Shrink (%) |
|--|------------------------------|----------------------------|
| Sample #1 | 58 | 27 |
| Sample #2 | 60 | 33 |
| Sample #3 | 58 | 34 |
| Sample #4 | 60 | 26 |

Note: Shrink amount will depend on B.U.R.



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