RIBS MVTR

Reactive Intercept™ Barrier System

Description:

RIBS MVTR is a combination of two inventions that provides a reusable package with permanent electrostatic protection (ESD and EMI Shielding), full MVTR protection, and a self contained de-ionizer for corrosive gases. This heavily metallized laminated co-extruded film contains a single layer of two distinctly different properties. One side of the extruded film is a matrix of polymer and conductive carbon. The inside layer of the film is a static dissipative, non-sloughing, polymer with a backbone of reactive Copper that provides a membrane over the carbon layer. The resulting film provides 4 functions:

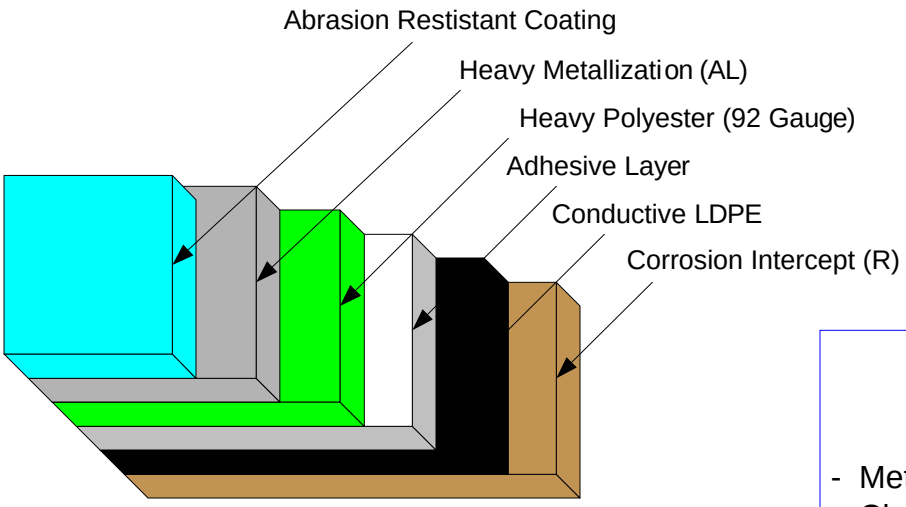
(1) A pathway for electrical charges to flow through the membrane to the conductive layer.
(2) A pathway for free organic ions to flow through the membrane to be absorbed by the carbon.
(3) A pathway for free inorganic ions to react with and be neutralized by the Copper in the membrane
(4) A metallized polyester to provide EMI and ESD shielding and moisture barrier protection.

Physical Properties	Test Method	Specification
Color		Silver / Copper
Thickness	PST #001	3.5 mil
Yield	PST# 002	7500 Sq in./Lb
Tensile Strength	ASTM D-882	25 Lb/In.
Puncture Resistance	FTMS 101C Method 2065	> 19 Lbs.
Tear Initiation	ASTM D-1004	> 2.5 Lbs
Mullen Burst	ASTM D-774	100 Lbs
Seam Strength	ASTM D-882	> 14Lbs
Optical Density		Photo Opaque
Heat Seal		375°F .05 sec 60 PSI
Blocking	None	None

Electrical Properties	Test Method	Specification
Surface Resistivity	ASTM D-1003 15% RH	PE<10^{11} Ω/ Sq PET<10^{6} Ω / Sq
Energy Test	S11.31	< 5 nJ
Charge Retention	20,000 volts applied	< 5 volts measured
MVTR	ASTM –1240P100F 100 Sq in/24 Hrs	< .02 gms
EMI Shielding	(mil 81705 Rev C)	> 45 dB between

Chemical Properties	Test Method	Specification
Contact Corrosivity	FTMS 101C Method 3005	Pass – No Corrosion
Total Organic outgassing	Dynamic Headspace	< 220 ug/g
Total Inorganic outgassing	Dynamic Headspace	non detectable
NVR (Total Residue)	< .5 ug/cm^2	Std Method 2540C

Material Cleanliness	Values	Test Method
Ammonium	< 30 ng/cm^2	Ion Test
Bromide	< 30 ng/cm^2	ASTM D 5542-94
Calcium	< 30 ng/cm^2	
Chloride	< 30 ng/cm^2	
Fluoride	< 30 ng/cm^2	
Lithium	< 30 ng/cm^2	
Magnesium	< 30 ng/cm^2	
Nitrate	< 30 ng/cm^2	
Nitrite	< 30 ng/cm^2	
Phosphate	< 30 ng/cm^2	
Potassium	< 30 ng/cm^2	
Sodium	< 30 ng/cm^2	
Sulfate	< 30 ng/cm^2	



RIBS MVTR
Moisture Barrier Bag

Metal Out Design
For the Best Protection

RIBS MVTR
Moisture Barrier Bag

- Metal Out Design for true shielding protection
- Charge Retention: < 5 Volts
- Energy Test (Shielding)
  - New < 5 njoules
  - Used < 5 njoules
- Electrical Properties
  - Independent of time, temperature, storage (in normal storage conditions), or use conditions -- truly permanent!

Permanent
ESD
Protection

RIBS Technology
Combining Contamination Free Corrosion / Oxidation Protection
With Permanent ESD Protection

INTERCEPT Technology

Contamination Free Barrier Packaging Without Oils or Foil

INTERCEPT TECHNOLOGY™ SHRINK FILM

Description:

A truly new breakthrough in clean packaging, clean protection. Normally companies turn to foil barriers, or oil coatings, or oil impregnated films and papers (VCI, VPI, etc.) for corrosion protection. Foil bags, as well as all normal barriers require hermetic seals and completely intact packaging. Also, if it is a barrier to get in, it is a barrier to get out; so all gases trapped within a normal barrier bag remain inside to attack what is trying to be preserved. Only Intercept, with its patented protection of a matrix of Copper reacted into the polymer itself provides both a barrier from the outside in (protecting for up to 10 years per mil) as well as providing a preferential corrosion site on the inside of the bag, cleaning the closed bag of corrosive and reactive gases within hours or minutes. Intercept does not need to be hermetically sealed, simply fold over the bag and use clear case sealing tape or heat seal will provide adequate protection. In addition, Intercept products use no oils or other contaminates that leave residues on surfaces and can attract dust. VCI products can even help accelerate corrosion under certain conditions. That is why the US military tested and approved Intercept as a replacement for foil bags in their VCI Free Barrier System Testing and Qualification program. Only Intercept can protect the product being stored, clean the environment around the product all with no contamination. In addition to corrosion protection the inside layer of Static Intercept® also provides permanent, humidity independent ESD protection. The outer layer is white UVI protected to withstand outer storage for up to 3 years (or more depending on location)

Physical Properties	Test Method	Specification
Color		White/Dark Brown
Surface Resistivity	Voyager, < 5% RH	10^{6-7} Ohms/Sq
Static Decay	Mil 81705-C	<0.01seconds
Tribo Charging	ESD 20.20	< 20 volts
Thickness	PST #001	8 mil
Tensile Strength	ASTM – D882	2000 PSI
Elongation (MD%)	ASTM – D882	500%
Moisture Permeation		0.0167 g/m^2 (40^{o}C per 24 hrs)

Chemical Properties	Test Method	Specification
Contact Corrosivity	FTMS 101C Method 3005	Pass – No Corrosoion

Material Cleanliness	Values	Test Method
Bromide	< 30 ng/cm^2	Ion Test
Calcium	< 30 ng/cm^2	ASTM D 5542-94
Chloride	< 30 ng/cm^2	
Fluoride	< 30 ng/cm^2	
Lithium	< 30 ng/cm^2	
Magnesium	< 30 ng/cm^2	
Nitrate	< 30 ng/cm^2	
Nitrite	< 30 ng/cm^2	
Phosphate	< 30 ng/cm^2	
Potassium	< 30 ng/cm^2	
Sodium	< 30 ng/cm^2	
Sulfate	< 30 ng/cm^2	

Non Volatile Residue	Values	Test Method
Total Residue	< I µg/cm2	Std Method 2540C

Volatile Organics, Headspace	Values	Test Method
Total Hydrocarbons	< I µg	ASTM F1982-99
Total Outgassing	< I0 µg	Method B