

Corrosion Intercept®

Contamination Free Barrier Packaging Without Oils or Solvents

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Description

Corrosion Intercept® is a revolutionary new technology developed and patented by Bell Labs. Corrosion Intercept is the state of the art in corrosion protection with unparalleled ability to replace volatiles and oils in protecting metals. The corrosion protection is for Ferrous and Non-Ferrous metals. The Intercept Technology allows for simplicity in inventory control, use, application and in performance. Simply better protection.

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No other product protects like Intercept

- Intercept acts a gas barrier to corrosive gases.
- Does not outgas
- Contains no volatile chemicals.
- Will not contaminate what it protects
- Scavenges air trapped within the closed bag cleansing it of gases.
- Extremely low ionic contamination
- Intercept is fully recyclable
- Meets or exceeds PRF131J foil in salt fog testing

Physical Properties

Typical Values

Test Method

Thickness	3 mils	
Tensile Strength		
Machine Direction	16.5 Lbs/in	ASTM D882
Transverse Direction	12.0 Lbs/in	ASTM D882
Elongation		
Machine Direction	321 %	ASTM D882
Transverse Direction	512 %	ASTM D882
Puncture Resistance	11.0 Lbs	FTMS 101, MTH 2065
Dynamic Coefficient of Friction	0.27 (on own surface)	
Moisture Permeation	0.1 g/m ² (40oC per 24 hrs)	
Sulfur and Chlorine Permeation	0 cc/m ² (for 15 years)	DuPont and AT&T Test
Ozone Permeation	0 cc/m ² (for 15 years)	DuPont and AT&T Test
Heat Seal Strength	9.0 lbs/in	Instron

Chemical Properties

Typical Values

Test Method

Outgassing		
Total Mass Loss	.12 %	ASTM E595
Volatile Condensable Material	.002%	NASA SP-R-0022A
Polycarbonate Compatibility	Pass	EIA 564
Corrosion Test		
Steel	Pass	
Copper	Pass	
Galvanic Couple	Pass	Steel/Copper/Brass

Metals corrode (tarnish) by reaction with common gases in the atmosphere. These corrosive gases react with both Ferrous (Iron based) and Non-Ferrous metals, however these gases are the primary cause for Non-Ferrous metal (Silver, Tin, Copper, Brass, etc.) corrosion. The Intercept Technology is a revolutionary product reacting solid state reactive materials into a polymer matrix. These reactive materials react with and neutralize these corrosive gases trying to pass through or come in contact with the film. The protection against these corrosive gases is 10 years per mil of Intercept, at standard NAR levels of corrosive gas.

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Corrosion Intercept® Foam

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CORROSION INTERCEPT® Foam

Open-cell Foam made from Virgin Polyurethane (PU) Protection from atmospheric corrosion with indicator function due to changing colour. Foam will require to be dry and applied in dry environment (Desiccants are advised) Standard Manufacturer's Application recommendations must be adhered to.

Nominal size of the foam pads: 200 x 160 mm; 1.000 x 1.200 mm
 Nominal thickness mm: 10

Composition/ Information on ingredients

Substance: CORROSION INTERCEPT Coating
 Range in % < 4 (according to MSDS)
 CAS number: 7440-50-8, EINECS/ELINCS: 231-159-6
 Colour: Copper
 Printing: Without
 Warranty: According written conditions
 Quality control: According to ISO 9001 requirements

Mechanical properties

Test method

Unit

Mechanical properties	Test method	Unit
Density	ISO 845	kg /cbm netto
Compression Resistance at 40%	ISO 3386/1	kPa
Ultimate Elongation	ISO 1798	%
Tensile Strength	ISO 1798	kPa
Cell Diameter		micron

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Corrosion Intercept® Stretch Film®

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DESCRIPTION	Packing film made from PE-LD
NOMINAL THICKNESS (µm)	35
TICKNESS TOLERANCE	average = nominal +- 10 % at any point of film = nominal +- 15%
COLOR	Lichtdurchlässig (light copper colour)
ITEM DESCRIPTION	1 side with adhesives (outside), 1 side with CI (inside)
WARRANTY	according to written conditions
QUALITY CONTROL	according to ISO 9001 requirements

MECHANICAL PROPERTIES	Test Method	Unit	Typical Values
Density	ASTM D1505	g/cm ³	0.940
Tensile stress at yield	DIN ISO EN 527-1		
- Machine Direction		N/mm ²	10.0
- Transversal Direction		N/mm ²	11.0
Elongation at Break	DIN ISO EN 527-1		
- Machine Direction		%	600
- Transversal Direction		%	700
Tear resistance (Elmendorf)	ISO 6383/2-1983E		
- Machine Direction		Elm.,kj/m ²	31
- Transversal Direction		Elm.,kj/m ²	16
Dart Drop (FEM)	ISO 7765-1	N	46

The typical values refer to results obtained in our laboratory during Quality Control of various production batches



Corrosion Intercept® Translucent™

Contamination Free Barrier Packaging Without Oils or Solvents

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Physical Properties	Test Method	Specification
Colour		Copper
Thickness	PST#001	3 mil
Tensile Strength	ASTM-D882	2000 PSI
Elongation (MD%)	ASTM-D882	500%
Dart Impact	ASTM-D3420	To 250gms
Chemical Properties	Test Method	Specification
Contact Corrosion	FTMS 101C Method 3005	Pass – No Corrosion
Material Cleanliness	Values	Test Method
Ammonium	<30ng/cm ²	Ion Test ASTM D 5542-94
Bromide	<30ng/cm ²	
Calcium	<30ng/cm ²	
Chloride	<30ng/cm ²	
Fluoride	<30ng/cm ²	
Lithium	<30ng/cm ²	
Magnesium	<30ng/cm ²	
Nitrate	<30ng/cm ²	
Phosphate	<30ng/cm ²	
Potassium	<30ng/cm ²	
Sodium	<30ng/cm ²	
Sulphate	<30ng/cm ²	
Non Volatile Residue	Values	Test Method
Total Residue	<1ug/cm ²	Std Method 2540C
Volatile Organics, Headspace	Values	Test Method
Total Hydrocarbons	<1ug	ASTM F1982-99
Total Outgassing	<10ug	Method B

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Static Intercept® Shrink film

Anti-Corrosive Polyethylene

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Physical Properties	Typical Values	Test Method
Thickness	200um (2 layers 3.4 mil each LDPE white shrinkfilm; 1 layer 1.2-mil Static Intercept resin). Tolerance average = nominal +/- 10 %	
Colour	White opaque (outside), black INTERCEPT® (inside)	
Elongation at Break		
- Machine Direction	450 %	ISO 1184
- Transverse Direction	550%	ISO 1184
Tensile Strength		
- Machine Direction	0.5 Mpa	ISO 1184
- Transverse Direction	19.5 Mpa	ISO 1184
Elmendorf Tear Strength		
- Machine Direction	43.5 N/mm	ISO 6383/2
- Transverse Direction	50.0 N/mm	ISO 6383/2
Shrink Percentage		
- Machine Direction	50-55%	130°C, 30s
- Transverse Direction	10-15%	130°C, 30s
UV-Stabilisation	400 kLy	ASTM G 154-00a
Puncture Resistance	< 25.0 Lbs	FTMS 101, MTH 2065
Dynamic Coefficient of Friction	.27 (on SI surface)	
Moisture Permeation	0.34 (g/(m ² *d))	DIN 53122-1
Sulfur and Chlorine Permeation	0 cc/m2 (for 15 years)	DuPont and AT&T Test
Heat Seal Strength	10.0 lbs/in	Instron
Density	0.950 g/cm ³	ASTM D1505
Melt Flow Index	0.300 g/10 min	ASTM D1238

Electrical Properties (inside only)	Typical Values	Test Method
Surface Resistivity	106-7 Ohms/Sq	Voyager, < 5% RH
Static Decay		
- As received	.01 seconds	Mil 81705-C
- After 24 Hour Water Shower	.01 seconds	Mil 81705-C
- After 160oF Oven Aging	.01 seconds	Mil 81705-C
Tribo Charging	< 20 volts	Teflon and Quartz

Chemical Properties	Typical Values	Test Method
Outgassing		
Total Mass Loss	.02 %	ASTM E595
Volatile Condensable Material	.002%	NASA SP-R-0022A
Polycarbonate Compatibility	Pass	EIA 564
Corrosion Test Steel	Pass	
Copper	Pass	
Mil PRF 131J (for anti-corrosion)	Pass	Military Testing

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Reactive Intercept Barrier System™

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RIBS MVTR 3.5mil

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<1011 / Sq PET<106 / Sq
Energy Test	S11.31	< 5 nJ
Charge Retention	20,000 volts applied	< 5 volts measured
MVTR	ASTM -1240P100F 100 Sq in/24 Hrs	< .001 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/cm2	Std Method 2540C

Material Cleanliness	Values	Test Method
Ammonium	< 30 ng/cm2	Ion Test ASTM D 5542-94
Bromide	< 30 ng/cm2	
Calcium	< 30 ng/cm2	
Chloride	< 30 ng/cm2	
Fluoride	< 30 ng/cm2	
Lithium	< 30 ng/cm2	
Magnesium	< 30 ng/cm2	
Nitrate	< 30 ng/cm2	
Nitrite	< 30 ng/cm2	
Phosphate	< 30 ng/cm2	
Potassium	< 30 ng/cm2	
Sodium	< 30 ng/cm2	
Sulfate	< 30 ng/cm	

*Can be made to clean room 100

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Reactive Intercept Barrier System™

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RIBS MVTR 6mil

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
Colour		Silver / Copper
Thickness	PST #001	6.0 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<1011 / Sq PET<106 / Sq
Energy Test	S11.31	< 5 nJ
Charge Retention	20,000 volts applied	< 5 volts measured
MVTR	ASTM -1240P100F 100 Sq in/24	Hrs < .001 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/cm2	Std Method 2540C
Material Cleanliness	Values	Test Method
Ammonium	< 30 ng/cm2	Ion Test ASTM D 5542-94
Bromide	< 30 ng/cm2	
Calcium	< 30 ng/cm2	
Chloride	< 30 ng/cm2	
Fluoride	< 30 ng/cm2	
Lithium	< 30 ng/cm2	
Magnesium	< 30 ng/cm2	
Nitrate	< 30 ng/cm2	
Nitrite	< 30 ng/cm2	
Phosphate	< 30 ng/cm2	
Potassium	< 30 ng/cm2	
Sodium	< 30 ng/cm2	
Sulfate	< 30 ng/cm2	

*Can be made to clean room 100

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Static Intercept®

Anti-Corrosive Permanently Static Dissipative Polyethylene Bags

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Description

Static Intercept® is a revolutionary new technology developed and patented by Bell Labs. Static Intercept® combines the state of the art in ESD and corrosion protection. AT&T determined that most latent defects are the result of corrosion. Corrosion can cause solderability problems, loss of performance and premature failure in the field. Only Intercept protects against both ESD and Corrosion.

- ESD properties are permanent and independent of humidity
- Does not outgas
- Contains no volatile chemicals (no amides or amines, no anti-stats)
- Will not contaminate components
- Tribo charging < 20 volts
- Cleanroom compatible
- Extremely low ionic contamination
- Intercept is fully recyclable
- Intercept Meets Mil Spec 81705C

Physical Properties

Typical Values

Test Method

Thickness	3 mils	
Tensile Strength		
- Machine Direction	11.5 Lbs/in	ASTM D882
- Transverse Direction	9.0 Lbs/in	ASTM D882
Elongation		
- Machine Direction	321 %	ASTM D882
- Transverse Direction	512 %	ASTM D882
Puncture Resistance	8.0 Lbs	FTMS 101, MTH 2065
Dynamic Coefficient of Friction	.27 (on own surface)	
Moisture Permeation	3 g/m ² (40oC per 24 hrs)	
Sulfur and Chlorine Permeation	0 cc/m ² (for 15 years)	DuPont and AT&T Test
Ozone Permeation	0 cc/m ² (for 15 years)	DuPont and AT&T Test
Heat Seal Strength	6.0 lbs/in	Instron

Electrical Properties

Typical Values

Test Method

Surface Resistivity	106-7 Ohms/Sq	Voyager, < 5% RH
Static Decay		
- As received	.01 seconds	Mil 81705-C
- After 24 Hour Water Shower	.01 seconds	Mil 81705-C
- After 160oF Oven Aging	.01 seconds	Mil 81705-C
Static Shielding	< 80 volts	Mil 81705-C
Tribo Charging	< 20 volts	Teflon and Quartz

Chemical Properties

Typical Values

Test Method

Outgassing		
Total Mass Loss	.02 %	ASTM E595
Volatile Condensable Material	.002%	NASA SP-R-0022A
Polycarbonate Compatibility	Pass	EIA 564
Corrosion Test		
- Steel	Pass	
- Copper	Pass	

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Static Intercept® Woven

Contamination Free Packaging without Oils or solvents

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Description Woven SI

Nominal thickness (µm):	600
Thickness tolerance:	average = nominal +/- 10 % at any point of film = nominal +/- 15%
Colour:	natural colour / cooper
Printing:	without
Warranty:	according written conditions
Quality control:	according to ISO 9001 requirements

Mechanical properties	Test method	Unit	Typical values
Density:	ASTM D1505	g/cm ³	0,9 - 1,0
Melting point/range	ASTM D1238	° C	130 -170
Fabric width		mm	205 000 (+1,5/-0,5)
Fabric weight		kg	0,20 (+/--%4)
Tensile strength warp	ISO 1184	kg	198 (-%10)
Tensile strength weft	ISO 1184	kg	165 (-%10)
Elongation on warp		%	15 - 25
Elongation on weft		%	15 - 25
UV-stabilisation:	ASTM G 154-00a	kLy	300

The typical values refer to results obtained in our laboratory during quality control of various production batches.

Static Intercept2™

Contamination Free Packaging without Oils or solvents

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Description Static Intercept2™

Description:	packaging film made of PE-LD
Nominal thickness (µm):	80
ESD (Ω) (only inside/black side)	106-1011
Thickness tolerance:	average = nominal +/- 10 % at any point of film = nominal +/- 15%
Colour:	grey (outside), black INTERCEPT® (inside)
Printing:	product type, production code, date (ink-jet)
Warranty:	according written conditions
Quality control:	according to ISO 9001 requirements

Mechanical properties	Test method	Unit	Typical values
Density:	ASTM D1505	g/cm ³	0.950
Melt flow index:	ASTM D1238	g/10 min	0.300
Tensile strength:	DIN EN ISO 527		
- Machine direction		Mpa	24,7
- Transversal direction		Mpa	24,6
Elongation at break:	DIN EN ISO 527		
- Machine direction		%	555
- Transversal direction		%	625
Elmendorf tear strength:	ISO 6383/2		
- Machine direction		N/mm	40 - 50
- Transversal direction		N/mm	60 - 70
Dart drop:	ASTM 1709/A		
		g	372
		g/µm	4,65
Moisture vapour transmission rate:	DIN 53122-1 (23°C, 85 % r.F.)	(g/(m ² *d))	1,14

The typical values refer to results obtained in our laboratory during quality control of various production batches.