EcoShield® VpCI®-144/VpCI®-144 Super Barrier

Environmentally Friendly Moisture Barrier Paper

Powered by Nano-VpCI™, Patented (US 5,894,040)

PRODUCT DESCRIPTION

EcoShield® VpCI®-144 is the premium moisture barrier corrosion inhibiting paper in the industry. Our patented Vapor phase Corrosion Inhibiting technology has revolutionized the way metals are protected in an enclosed package. EcoShield® VpCI®-144 paper provides superior corrosion protection for both ferrous and non-ferrous metals, which eliminates the need to inventory a variety of papers for all the different types of metal you need to protect. This product also shows excellent oil and grease resistance.

Our EcoShield® VpCI®-144 paper is coated with a water-based barrier coating. Historically, polyethylene and wax coatings have been used to seal porous paper to provide a moisture barrier and/or moisture-vapor barrier. When coated this way the resulting paper product is an environmental problem and cannot be recycled through normal channels. EcoShield® VpCI®-144 paper provides an environmentally friendly alternative to polyethylene and wax paper, with water vapor barrier properties that are comparable to polyethylene coated paper.

EcoShield® VpCI®-144 Super Barrier is a high gloss version of EcoShield® VpCI®-144. Its shiny moisture-barrier side offers increased water resistance by reducing the paper's water vapor transfer rate. This gives VpCI®-144 Super Barrier even better water barrier properties than typical polycoated and waxed papers.

EcoShield® VpCI®-144 is environmentally safe, non-toxic, and fully recyclable/repulpable. That means EcoShield® VpCI®-144 can be recycled into other types of paper products such as boxes, cardboard, and other corrugated materials. It also means that EcoShield® VpCI®-144 can be made into or mixed with pulp to make new paper products.

EcoShield® VpCI®-144 paper is made from the highest quality neutral natural kraft paper—our paper is made without the use of any chlorine or other bleaching chemicals. This eliminates package contamination found with other competing VCI/VPI papers. Parts protected with EcoShield® VpCI®-144 can be painted, welded, and soldered.

The thin protective coating doesn't influence physical properties of most sensitive electrical and electronic components, including conductivity and resistivity.

FEATURES

- Combines corrosion protection, moisture barrier properties, oil and grease resistivity into one step
- Fully repulpable according to Fibre Box Association Voluntary Standard
- Contains no nitrites, phosphates, silicones, chromates, other heavy metals, or toxic products
- Natural grade paper eliminates package contamination
- One product protects against corrosion of ferrous and non-ferrous metals
- Commercially equivalent to military specifications MIL-P-3420E
- Conforms to NACE Standards TM0208-2008 and RP0487-2000
- Protective coating does not need to be removed prior to further surface finishing or coating application

TYPICAL APPLICATION

EcoShield® VpCI®-144 paper can be used to protect products for storage and shipment in a wide variety of ways: end closures for shipping tubes, insert strips for recessed areas in large packages, and sheet liners or separators between products.
The typical applications are

- Metal production: coils, wire reels, plate, bar, etc.
- Metal forging and die casting: raw and machined forgings and castings
- Metalworking: stamping, sheet metal work, springs, bearings, fasteners, tubes, pipes, jewelry, silverware, etc.
- Finished products: engines, machinery, equipment, tools, hardware, appliances, instruments, motors, etc.
- Electrical and electronic: components, controls, printed circuit boards, etc.

METALS PROTECTED

- Carbon Steel
- Stainless Steel
- Galvanized Steel
- Cast Iron
- Aluminum Alloys
- Copper
- Brass (≤30% Zn)
- Solder

METHOD OF APPLICATION

Products should be packaged as soon after cleaning as possible. Keep the EcoShield® VpCI®-144 paper as close to the surface of the product as practical, leaving no barrier between the EcoShield® VpCI®-144 paper and the metal surface to be protected.

One square foot (0.09 m^2) of EcoShield® VpCI®-144 paper for every 3 square feet (0.28 m^2) of surface provides enough volatile corrosion inhibitor to protect approximately 0.5 cubic foot (0.01 m^2) of void space. For long-term storage of up to 10 years, enclose the wrapped product in an airtight package.

Standard construction of EcoShield® VpCI®-144: Neutral natural paper coated on one side with a blend of water-barrier coating and VpCI® material and with the barrier coating on the reverse side.

PACKAGING AND STORAGE

Standard sizes: Converter rolls 48" x 26,000 feet (1.22 m x 7,925 m), roll stock 36" x 200 yards (0.91 m x 183 m), and 48" x 200 yards (1.22 m x 183 m). Custom sizes also available up to 98" (2.5 m) wide.

TYPICAL PROPERTIES

Property	TAPPI Method	Unit	Cortec
Basis	T-410	lbs/3000 ft^2 (g/m^2)	54.8 (89.2)
Caliper (thickness)	T-411	mils (micrometers)	5 (125)
Tear-MD	T-414	g	47.5
Tear-CD	T-414	g	58.5
Dry Tensile-CD	T-494	lbs/in (kg/mm)	17.68 (0.315)
Dry Tensile-MD	T-494	lbs/in (kg/mm)	47.14 (0.8418)
TEA-CD	T-494	ft-lbs/ft (J/m2)	3.6 (38.8)
TEA-MD	T-494	ft-lbs/ft (J/m2)	1.9 (20.5)
Stretch-CD	T-404	%	4.26
Stretch-MD	T-404	%	1.47
Ink floa	T-530	seconds	15
Smooth-nonprint	T-538	sheffield	240
Smooth-VCI	T-538	sheffield	231
Internal Bond	T-541	ft-lbs/in (J/cm)	0.165 (0.064)
Abrasion-non-print	T-476	g loss/100 rev	0.007
Abrasion-VCI	T-476	g loss/100 rev	0.002

CD=Cross Direction

MD=Machine Direction

WATER VAPOR BARRIER PROPERTIES**

	VpCI®-144 Super Calendered	VpCI®-144	Polycoated Paper	Waxed Paper
WVTR** (g/hour•m2)	0.32-0.37	0.61-0.69	0.47-0.71	6.5-6.9

** Tested according to ASTM E-96, at 73°F, 50%RH; EcoShield® VpCI®-144 compared with a comparable polyethylene coated paper, and a commercial wax paper.

STANDARD TEST METHODS

NACE TM0208-2008	Vapor Inhibiting Ability
NACE RP0487-2000	Selection of Rust Preventatives
MIL-PRF-3420H	VCI Treated Wrapping Materials, Opaque

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KEEP CONTAINER TIGHTLY CLOSED
NOT FOR INTERNAL CONSUMPTION
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