



**HIGH PERFORMANCE VpCI® PACKAGING**

# EcoShield® VpCI®-144

## 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 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 repulpable: made into or mixed with pulp to make new paper products.

EcoShield VpCI-144 paper is made from the highest quality recycled 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 film doesn't influence physical properties of most sensitive electrical and electronic components, including conductivity and resistivity.

### TYPICAL APPLICATIONS

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 as 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, tube, pipe, jewelry, silverware, etc.
- Finished products: engines, machinery, equipment, tools, hardware, appliances, instruments, motors, etc.
- Electrical and electronic: components, controls, printed circuit boards, etc.

### 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
- Conforms to military specifications MIL-P-3420E
- Conforms to NACE Standards TM0208-2008 and RP0487-2000
- Protective film does not need to be removed prior to further surface finishing or coating application



## 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.

Use approximately 1 square foot (0.09 m<sup>2</sup>) of EcoShield VpCI 144 paper for every 3 square feet (0.28 m<sup>2</sup>) of surface to be protected; and 1 square foot (0.09 m<sup>2</sup>) of EcoShield VpCI-144 paper for every 0.5 cubic foot (0.01 m<sup>3</sup>) of void space. For long-term storage of up to ten years, enclose the wrapped product in an airtight package.

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

## METALS PROTECTED

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

## FOR INDUSTRIAL USE ONLY

### KEEP OUT OF REACH OF CHILDREN

### KEEP CONTAINER TIGHTLY SEALED

### NOT FOR INTERNAL CONSUMPTION

### CONSULT SAFETY DATA SHEET FOR MORE INFORMATION

## TYPICAL PROPERTIES

Property	TAPPI Method	Unit	Cortec
Basis Weight	T-410	lbs/3000 ft <sup>2</sup> (g/m <sup>2</sup> )	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/m <sup>2</sup> )	3.6 (38.8)
TEA-MD	T-494	ft-lbs/ft (J/m <sup>2</sup> )	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-nonprint	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	Polycoated Paper	Waxed Paper
WVTR** (g/hour•m <sup>2</sup> )	0.61-0.69	0.47-0.71	6.5-6.9

## 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 100" (2.5 m) wide.

\*\* Tested according to ASTM E-96, 73°F, 50%RH, example test ranges for EcoShield VpCI-144, a comparable polyethylene coated paper, and commercial wax paper.

## LIMITED WARRANTY

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4119 White Bear Parkway, St. Paul, MN 55110 USA  
Phone (651) 429-1100, Fax (651) 429-1122  
Toll Free (800) 4-CORTEC, E-mail [info@cortecvci.com](mailto:info@cortecvci.com)  
Internet <http://www.cortecvci.com>

Distributed by:

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