



**CORTEC**  
CORPORATION

Environmentally Safe VpCI®/MCI® Technologies

# EcoShield® Barrier Coating for Paper and Corrugated

## DESCRIPTION

EcoShield® Barrier Coating is a waterborne barrier coating that is recyclable and 100% repulpable, effectively eliminating the need to use traditional wax and polyethylene papers. In addition, the coating can be utilized on kraft and recycled paper to seal the surface from contaminants that could cause corrosion. The combination of a contaminant sealant and a repulpable coating for kraft paper makes EcoShield® Barrier Coating a pioneer in the packaging industry. This material can also be used as a coating on liners for corrugated boxes to provide a water repellent moisture barrier. EcoShield® Barrier Coating also gives excellent oil and grease resistance.

Historically, polyethylene and wax coatings have been used to seal porous paper, corrugated boxes, and sheets to provide a water and/or water-vapor barrier to these substrates. The resulting paper product is an environmental problem and cannot be recycled through normal channels.

## PACKAGING & STORAGE

EcoShield® Barrier Coating is available in 5 gallon (19 L) plastic pails, 55 gallon (208 L) metal drums, liquid totes, and bulk. Mix well before use.

To ensure best product performance, store in original packaging, indoors, and out of direct sunlight at 40-100 °F (4-38 °C).

Shelf life: 1year

## HIGH PERFORMANCE PACKAGING SOLUTIONS



## FEATURES

- Water Vapor Transmission Rate (WVTR) comparable to polycoated paper and much superior to waxed paper
- Barrier properties at the end of the line ASTM F 1249
- Oil and grease resistance TAPPI T-559 KIT Test
- Certified repulpable according to TAPPI T 240 om-12 Repulpability Testing **(See Table 1)**
- Formulated in compliance with FDA Code of Federal Regulations Title 21:
  - §176.170-Components of paper and paperboard in contact with aqueous and fatty foods
  - §176.180-Components of paper and paperboard in contact with dry food
- UNI 11743:2019
- Certified recyclable according to System of Evaluation Aticelca 501:2019 **(See Table 2)**

**Note: Coated papers will produce better physical properties such as burst, tear, tensile strength, elongation, folding endurance, coefficient of friction, and smoothness.**

## TYPICAL PROPERTIES

Appearance	Milky White to Off-White Viscous Liquid
Non-Volatile Content	55-65%
pH	8.8-10 (Neat)
Density	8.5-9.1 lb/gal (1.02-1.09 kg/L)
Solvent Composition	100% Water

**Note: Heavier coating weights are suggested for lower WVTR (Water Vapor Transmission Rate)**

## TYPICAL APPLICATIONS

EcoShield® Barrier Coating can be applied by most common paper roll coaters, including gravure, flex, air-knife, reverse-roll, etc. Drying temperature is 180-200 °F (82-93 °C). Suggested weights are 8-11 lb/ream (3000 sq.ft.) (13-18 g/m<sup>2</sup>).

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## WATER VAPOR BARRIER PROPERTIES (ASTM E 96)

	EcoShield® Barrier Coating for Paper	Polycoated Paper	Waxed Paper
WVTR* (g/hour•m <sup>2</sup> )	0.61-0.69	0.47-0.71	6.5-6.9

\*Tested according to ASTM E-96, 73 °F (23 °C), 50% RH

Example test ranges for EcoShield® Barrier Coated Paper (45# 3msf natural kraft paper, 10# coating), a comparable polyethylene coated paper (40# 3msf paper, 6# PE coating), and commercial waxed paper.

**TABLE 1. REPULPABILITY ANALYSIS**

Results*	Trial 1	Trial 2
% of Rejects	13.9	13.6
% Fiber Yield of Sample (85%)	86.1	86.4
Observe and note deposition on vessel walls, screens, moving parts, etc.	No	No
Deposition Observed? No If yes, detail below	N/A	N/A
SUMMARY		
Operational Impact	Pass	Pass
Yield	Pass	Pass

### \*Methods and Notes:

TAPPI T 240 om-12 Consistency (concentration) of pulp suspensions

For dry/semi-dry sheet pulps, samples aren't diluted or filtered. Consistency is determined after equilibrating the entire sample (cut into specimens) in a sealed plastic bag for a minimum of one hour, two specimens are removed from the plastic bag and dried for a minimum of four hours.

FBA Voluntary Standard for Repulping and Recycling  
The final pH for Trial 2 fell below 6.5

**TABLE 2. RECYCLABILITY ASSESMENT SYSTEM RESULTS\***

Recyclability Assesment System Aticelca 501:2019	EcoShield® Barrier Paper Recyclable with Paper				Polyethylene Coated Paper
	Level A+	Level A	Level B	Level C	Not Recyclable with Paper
Coarse Reject (%)	<1.5	1.5-10.0	10.1-20.0	20.1-40.00	>40.0
Area Macrostickies ø<2000 µm. (mm <sup>2</sup> /kg)	<2.500	2.500-10.000	10.001-20.000	20.001-50.000	>50.000
Fibre Flakes (%)	<5.0	5.0-15.0	15.1-40.0	>40.0	
Adhesiveness	Absent	Absent	Absent	Absent	Present
Optical Inhomogeneity	Level 1	Level 2	Level 3	Level 3	

\*Results when applied at 10 pounds per ream dry coat weight to 35 pounds per ream kraft paper.



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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  
info@cortecvci.com  
<https://www.cortecvci.com>  
<https://www.cortecpackaging.com>

**Valdamark Limited**  
Unit 13,  
30 The Downs  
Altrincham, Cheshire, WP14 2PX,  
United Kingdom.  
valdamark@live.com  
Tel: +44 (0) 161 706 0388

