



# Owensboro Specialty Polymers, Inc.

Chemistry that Connects, People that Care

## Technical Data Sheet

### SERFENE™ 2010

#### PVdC Latex Barrier Adhesive & Extrusion Primer

##### Description

Serfene 2010 is a polyvinylidene chloride (PVDC) emulsion which exhibits excellent adhesion and barrier properties. It was designed for use as a barrier-type adhesive or primer, and will bond plastic films to paper or to another film. It was specifically designed for adhesion to polyolefins. Serfene 2010 is well suited for OPP, MDPE and LDPE.

Serfene 2010 dries to a clear film which exhibits good humidity resistance and gas barrier properties.

##### Typical Emulsion Properties\*

Solids	50%
Weight/Gallon	10.45 LBS
Viscosity	10 cps (Brookfield RVT, #1 @ 20 rpm)
Surface Tension	46 dynes/cm (Krüss Tensionometer)
pH	1.8
Color	Creamy white
Alcohol Tolerance	Yes – 10% maximum
Freeze/Thaw Stability	None
Recommended Shelf Life	70 days @ 77°F (25°C) (unopened containers)
Storage Conditions	>40° F (5° C), <85° F (30° C)

\*These items are provided for general information only. They are approximate values and are not considered part of a production specification.

Sediment may start to form in approximately four months from date of manufacture, and after this time, should not be used.

##### Application Methods

Serfene 2010 may be applied by the standard coating methods of air knife, wire wound metering rod (Mayer rod), or gravure roll. Even though Serfene 2010 is water-based, there should be no tendency to foam. Alcohol should be added when coating by gravure as this seems to aid in release from the gravure cylinder and wetting of the substrates. Serfene latex is acidic, therefore metal surfaces that are in contact with the wet latex need to be fabricated from corrosion resistant materials such as 316 stainless steel or plastic.

##### Coating Weight

The coating weight should be applied at 2 lbs/ream (3,000 sq ft) or more. The actual amount will depend on the specific end use. Serfene 2010 tends to block if wound up in contact with itself or other treated films. It is best used in an “in-line” operation or else should be formulated for “out-of-line” use. Recommendations are available.

##### Base Films

Polyolefin film should be corona treated to 38-44 dynes/cm. This will result in acceptable levels of adhesion. If the film is at the low end of the recommended treatment level or contains some slip additives, addition of 2-10% of isopropanol will improve wetting and flow.

## Nip Temperature

The nip temperature at which this material is nipped has an effect on the initial bond. Initial bonds are generally modest but improve with age. A general recommendation is to nip at 210-230°F. If the substrate can take higher temperatures, then the initial bond will be excellent. An example would be a 235°F nip temperature for paper to polypropylene giving 400-600 g/li with paper tear.

## Barrier Properties

A minimum of 2 lbs/ream is recommended in order to provide good adhesion and barrier. The oxygen transmission rate is dependent upon the amount of coating that is applied. The following data was generated for Serfene 2010 applied onto MDPE and laminated to MDPE.

Coat Weight lb/Ream	OTR (ccO <sup>2</sup> 100 in <sup>2</sup> /24hrs)	
	Ambient	Aged*
2.0	1.6	1.3
4.4	0.8	0.6
6.5	0.5	0.3

\*Lamination aged at 60°C for 1 hour prior to testing

## Bond Strengths

gms/linear inch puled on Instron at 10" minute

Laminate	Initial	2 Weeks Ambient	1 Week @ 100°F/90% RH
MDPE/MDPE	150	250	350
OPP/OPP	300	450	400
OPP/MDPE	150T	560T	600T
K-Cello/MDPE	125*	200*	150*
PVDC-coated Glassine/OPP	450T	550T	450T

T = Film Tear

\* = "K" coating lifts from cellophane