



Innovative Nanocomposite Materials

May 7, 2009
News Release
For Immediate Release

Ultrahigh barrier coating breakthrough from InMat[®] reduces food packaging costs and environmental impact.

Hillsborough, New Jersey, May 7, 2009. InMat[®], the leader in environmentally friendly, high barrier nanocomposite coatings, announces its new Nanolok[™] PT ADV-7 water-based coating formulation providing a more sustainable, cost effective option for transparent, high oxygen and/or moisture barrier food packaging. By reducing the amount of barrier material needed and using only non-hazardous materials, this technology enables food companies to produce long shelf life products with reduced carbon footprint and environmental impact.

Nanolok[™] PT ADV-7 reduces both material and process costs when compared with the lowest cost transparent high oxygen barrier material, EVOH. Coating thicknesses in the range of 0.5-0.8 micron provide better oxygen barrier than 10-20 microns of EVOH, and provide much better oxygen and moisture barrier when compared with PVDC coated PET. These transparent coatings can be applied using commercial roll coating equipment while providing performance competitive with more expensive vacuum and plasma deposited coatings. Coatings speeds of up to 900 ft/minute have already been achieved.

Nanolok[™] PT coatings do not contain halogens, VOC's, or other hazardous materials and are compliant with food contact regulations in the US and Europe. Alternative barrier materials such as EVOH and PVDC negatively impact the ability of packaging material to be recycled. The very small amount of Nanolok[™] barrier material needed to achieve the required shelf life will improve the recyclability of barrier packaging. Nanolok[™] technology will also reduce the total amount of material sent to landfills. In addition, Nanolok[™] PT ADV-7 coated bio-derived polymer films meet compostibility standards.

“What is unique is that our Nanolok[™] coatings can be applied at low thickness and high speed using standard roll coating equipment while achieving high barrier levels at lower cost.” says InMat CEO Harris Goldberg. “This provides new options for film producers, converters, and end users to design and produce more sustainable, cost effective, high barrier packaging.”

Samples of coating formulation and coated packaging film (48 gauge PET) are immediately available and can be purchased for evaluation. If you have a commercial application for this coating, please see the technical data sheet available on InMat's website www.inmat.com, email contact@inmat.com, or call Dr. Harris A. Goldberg at 908-874-7788.

Since 1999 InMat[®] Inc., The Innovative Nanocomposite Materials Company, has led the development and commercialization of nanocomposite barrier coating technology. The company is committed to providing environmentally friendly coatings to improve product performance for both industrial and consumer product applications.



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Nanolok™ PT ADV-7

Product Data Sheet

Product Description

High Barrier, Water Based, Environmentally Friendly, Nanocomposite Barrier Coating for Transparent Sustainable Packaging

Coating Formulation Properties

Property	Typical Value	Units
Oxygen Permeability	0.2 - 0.6	cc- μ /m ² -day-atm
	0.0005 - 0.0015	cc-mil/100 in ² -day-atm
Solid Content	6.5 - 7.5	%
pH	6 - 8	
Viscosity	10 - 20	cP (100 rpm, 132 sec ⁻¹)

- Provides source reduction and/or improved sustainability relative to EVOH & PVDC
- More cost effective than EVOH
- Excellent barrier up to 80% RH
- Large enhancements of moisture barrier when coated on flexible packaging films
- Meets compostibility standards on bio-derived films
- Compliant with US and European food contact standards
- Targets dry food applications such as salty snacks, nuts, coffee
- Can be applied at high speeds using standard gravure coating methods
- No halogen, VOC's, or hazardous materials



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Coated Film Properties

Base Film			PET 48 gauge		PET 200 gauge	
Property	Units	RH				
Coating Thickness	micron		0.55 ± 0.1		0.55 ± 0.1	
OTR 23C	cc/m ² -day-atm (cc/100 in ² -day-atm)	0%	0.3	(0.02)	0.4	(0.03)
		50%	0.3	(0.02)	0.3	(0.02)
		65%	0.7	(0.05)	0.8	(0.06)
		80%	6	(0.4)	5	(0.3)
MVTR 38C	gm/m ² -day (gm/100 in ² -day)	55%*	0.5*	(0.03)*	0.2*	(0.015)*
		85%	12	(0.8)	4.5	(0.3)
Adhesion	gm/inch	23C	>300		>300	

* 55% RH MVTR data taken at 23C – i.e. air conditioned environment

Comparison of Coated and Uncoated Film

Film	Nanolok PT ADV-7 coating thickness (microns)	OTR 23C 50% RH (cc/m ² -day-atm)	MVTR 38C, 85% RH (gm/m ² -day-atm)
PET 48 gauge	None	120	40
	0.55	0.4	12
PET 200 gauge	None	30	9
	0.4	0.3	4.5
BOPP 80 gauge	None	2150	7
	0.6	0.9	2
PLA 80 gauge	None	1000	270
	0.5	0.7	54

Available for evaluation:

48 gauge PET coated with 0.55 μ Nanolok PT ADV-7 in 5000 ft, 36” wide rolls.