

Nanolok™ Technology

For High Barrier Applications

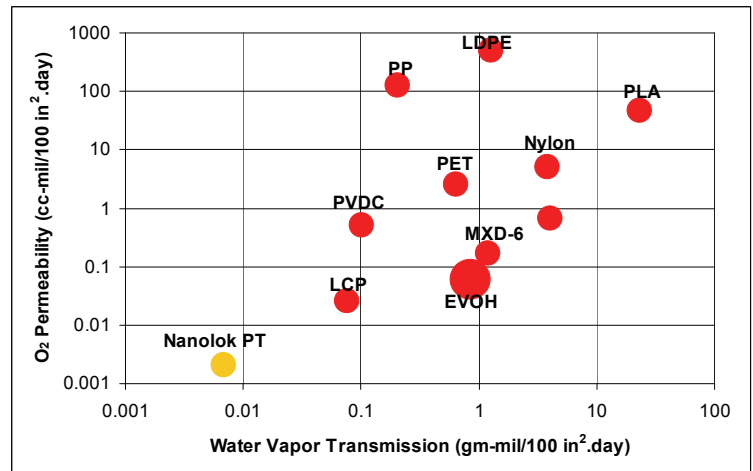
What is it?

Pioneered by InMat® Inc., Nanolok™ coatings start as aqueous suspensions of nanodispersed silicates in a polymer matrix. They are environmentally friendly, and can be applied via gravure coating processes to polyester film (or other substrates using appropriate adhesives). Nanolok™ technology provides the highest gas barrier of any polymeric coating available on the market today.

A butyl rubber based coating (Air-Defense 2000) was first used commercially in Wilson's Double Core Tennis Balls. These balls last twice as long because they retain air longer. A thin layer of Nanolok™ on the inner rubber lining of these balls increases air retention compared to the uncoated rubber. The same technology, in a polyester matrix can be used in packaging application to significantly increase oxygen barrier.



InMat Nanolok™ Coatings Provide the Highest Oxygen Barrier of Any Polymeric Coating Available on the Market Today



What are the benefits?

- Reduced material/structure costs
- Same level of barrier achieved with coatings on different substrates (OPP same as PET)
- Cost effective vs. EVOH, PVDC
- High transparency (see-through clarity)
- Can be gravure applied
- Thin coating - maintains physical properties of the substrate
- Recyclability
- Environmentally friendly



Packages that can keep foods fresher longer

How does it work?

The Nanolok™ aqueous suspension is applied via roll (or dip, or spray) coating process onto a polyester film or other substrate. Once dry, a very thin coating (0.25-2 microns or 0.01-0.08mils) of Nanolok™ forms on the substrate. This coating contains hundreds of nanodispersed platelets per micron of coating thickness. These platelets form a tortuous path for molecules such as oxygen and aromatics, dramatically increasing the barrier properties of the substrate. Nanolok™ coatings form an extremely efficient barrier which can be 100's of times less permeable than the uncoated substrate. In addition, these coatings are transparent, thus useful for see-through packaging applications. Thin coatings are applied, making these coatings highly cost-effective: approximately 1-2 microns (0.04-0.08 mil) of Nanolok™ coating, for example can replace 12 microns (0.5 mil) of EVOH to achieve the same level of oxygen barrier.

