

# PixNIL® Titania Formulation

## Target Applications

Nanoimprint Lithography (NIL) and Thin Films for a wide variety of AR/VR, Display, and Sensor applications

## Broad Compatibility with

- » Polymer-Based Photonics
- » Diffractive Optical Elements

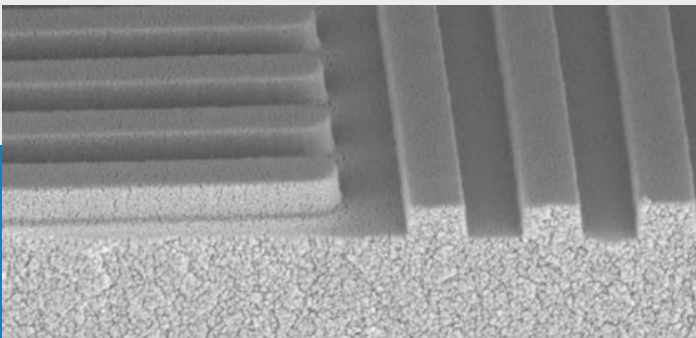
## Benefits of PixClear® Enabled HRI Nanoimprintable Product

- » Refractive index (RI) of  $> 1.9$
- » Particle Size 10-20nm
- » Highest transparency across all visible wavelengths
- » Very low haze
- » Large FOV = fully immersive AR experience with PixClear®
- » Low shrinkage
- » Excellent structural fidelity
- » Cost effective and scalable process with nanoimprinting

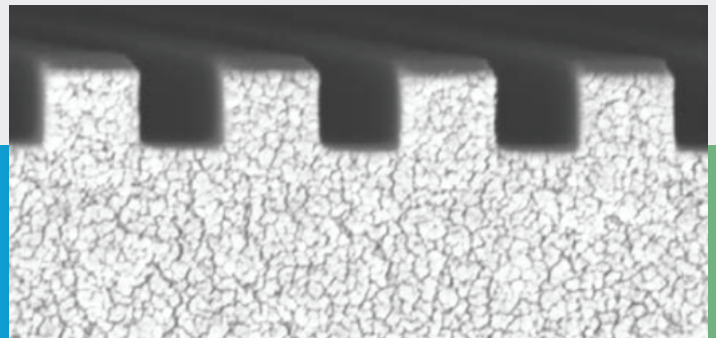
### NANOIMPRINT PROCESS



### PIXCLEAR® ENABLED NIL STRUCTURES



scale: 200nm



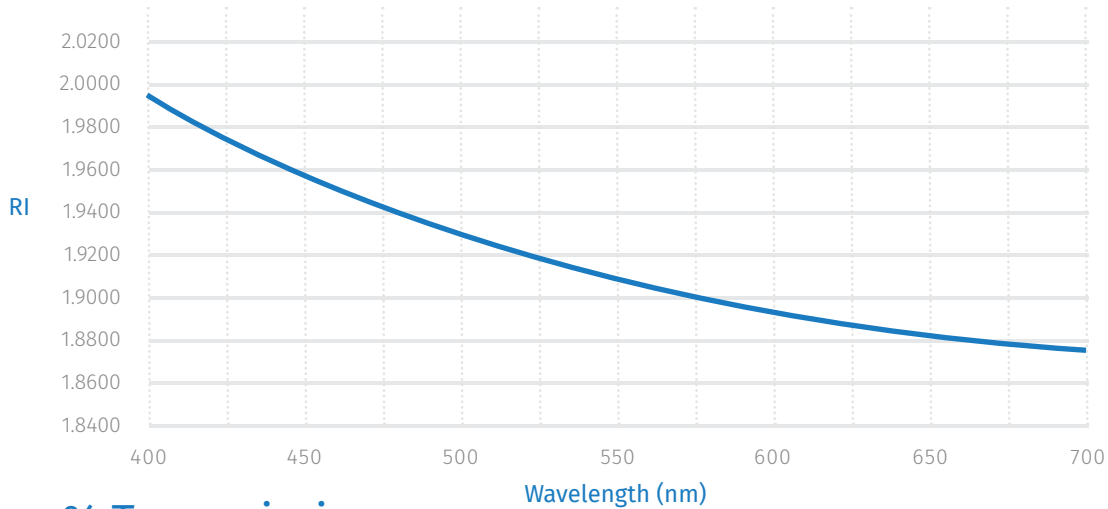
scale: 100nm

Results Courtesy of NIL Technology

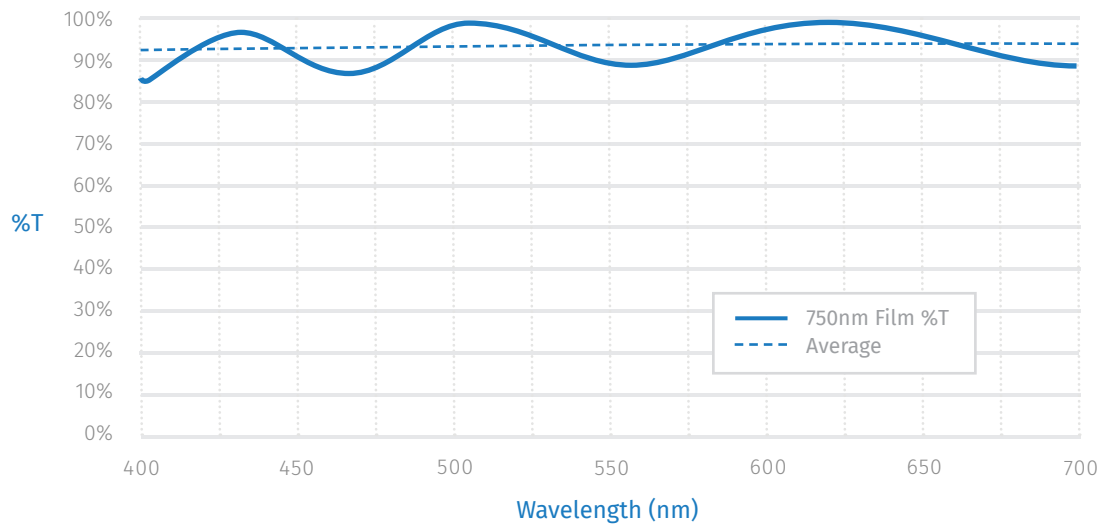
# Technical Data

PIXNIL™ TiO<sub>2</sub> FORMULATION

## Refractive Index



## % Transmission



## Specification

FORMULATION	Solvent Type	PGMEA
COATING PROCESS	Dispensing Method Viscosity (cP)	Spin Coated Thin Film/Slot Die Coat/Inkjet 4
FILM PROPERTIES Measured at 750nm Thick Film	RI (550 nm) Haze (%)	>93% <0.2%
CURING	UV Condition	385 UV LED, 320 mJ/cm <sup>2</sup>
CONSISTENT NANOCRYSTAL SIZE	Size (nm)	10-20nm