



LuxNIL® P285

High refractive index UV curable dispersion in PGMEA

FEATURES: High Refractive Index, EXCELLENT adhesion to plastic and glass substrates, OPTICALLY Clear

PRODUCT DESCRIPTION:

- LuxNIL® P285 is a UV-curable inorganic organic dispersion in PGMEA that is suitable for AR/VR/MR applications.
- Base chemistry: Inorganic nano particles in acrylate binder.

PRODUCT USE:

- Diffractive Optical Elements (DOE)
- AR/VR/MR
- Photo Nano-Imprint Lithography (P-NIL)

PROCESS FLOW



LuxNIL® P285 OPTICAL PROPERTIES

Properties	LuxNIL®P285
n_{589}	1.91
Transmission* [§]	88%
Haze*	0.2%
Clarity*	100%

*1 micron film on borosilicate glass.

§No correction for surface reflection

TYPICAL PROPERTIES

Uncured resin

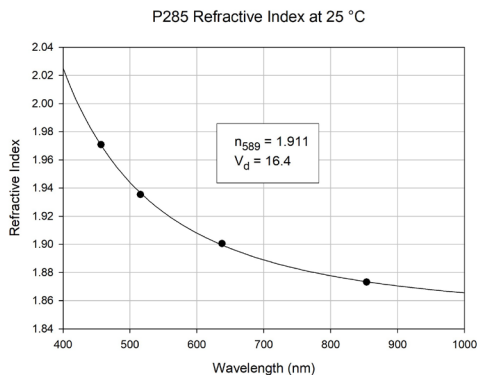
Solid content:	50%
Viscosity at 25 °C, mPa.s or cps	2-4
Shelf life (20 - 30°C):	6 months
Pot life or working life (20 - 30°C):	3 months

Cured film

Shrinkage (volume, %)	<1
Refractive index of cured film (25 °C) @589 nm	1.90

Operating temperature: -40 to 100 °C

LuxNIL® P285 RI vs wavelength



GENERAL USAGE INFORMATION:

Storage: After receipt in amber HDPE bottles, room temperature storage (15-30°C) in the original container is required

APPLICATION NOTES:

PROCESS:

- 1) Coating step for film forming: LuxNIL® P285 is used as a nano imprint lithography resin. LuxNIL® P285 can be applied by spin coat, roll coat, ink-jetting, etc.
- 2) Solvent removing step: after coating, heat is applied at 70 to 100 °C for 60 sec to remove PGMEA
- 3) Nano-imprint-lithography: replication of nano features with a working stamper is conducted.
- 4) UV cure: UV cure to fix the nano features
- 5) Working stamp is removed

Coating thickness for LuxNIL® P285: 300 to 2000 nm

PRE-CURE (for solvent removal): 70 to 100 °C for 60 sec

UV CURING CONDITIONS:

*Metal halide/medium or high Mercury UV: UV-A (320-400 nm), intensity: 100-1,000 mW/cm²

*or LED-365 nm, UV light intensity: 100 to 1,000 mW/cm²

LuxNIL® P285 should be cured between two substrates or in an inert atmosphere. If cured in air, the integrity of the film is reduced.

RECOMMENDED UV Conditions: LED-365 nm, 250 mW /cm² x 100 to 200 sec. Cure is done between 2 substrates or in an inert atmosphere.

The information presented here represents our best available information and is believed to be reliable, but it does not constitute any guarantee or warranty. Inasmuch as Addison Clear Wave has no control over the exact manner in which others may use this information, it does not guarantee the results to be obtained. Nor does the company make any expressed or implied warranty of merchantability, or fitness for a particular purpose concerning the effects or results of such use. Purchasers are further responsible for determining the suitability of the product for its intended use and the appropriate manner of utilizing the production processes and applications so as to ensure safety, quality and effectiveness. Addison Clear Wave makes no warranties and assumes no liability in connection with the use or inability to use this product.

Addison Clear Wave Coatings, Inc., 3555 Legacy Blvd, St. Charles, IL 60174 USA

Tel: +1 630-444-1658, AddisonCW.com