

TBF™ Coatable Retarders: Negative C-plate CN-LT-1000

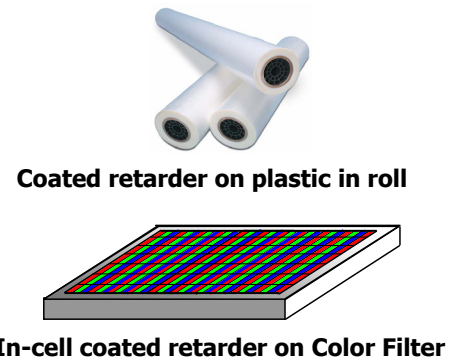
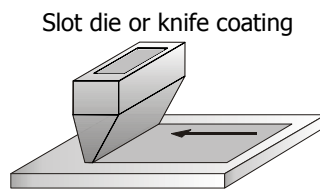
In-cell

On-plastic

Description

Crysoptix negative C-plate Thin Birefringent Film™ (TBF™) CN-LT-1000 is produced by coating liquid organic materials on glass or plastic substrate via printing process, such as slot die (roll-to-roll or flat-bed) with subsequent drying. TBF™ coating technology does not require pre-formation of alignment layer on the substrate surface. The coatable retarder possesses high birefringence and can be applied as a 0.3-5 μm thick coating for optical compensation of LCD. The TBF retarder can be used as an efficient low-cost internal or external patterned retarder for 3D LCD TV. The retarder can be laminated with dichroic polarizer.

How To Do



Liquid coating material

Deposition process

Coated retarder

Note: the alignment process is determined by intrinsic material properties and not affected by coating conditions

Solution Properties

Solvent	water
Typical pH level	7.0
Typical concentration	7.2 wt. %
Viscosity, Pa·s	~0.15

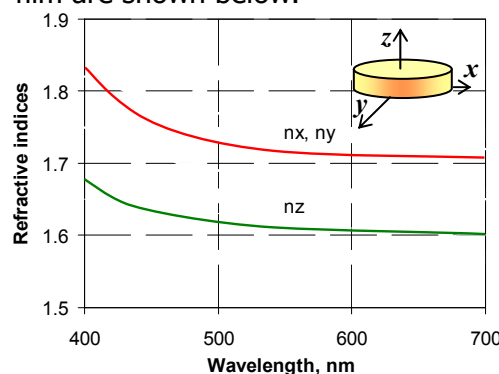
Coating Requirements

Parameter	Recommendation
Substrate preparation	no alignment layer no rubbing only cleaning procedure
Solution/substrate/temperature	25-60 °C
Coating speed	Not critical
Drying Condition	normal (drying in open air) or hot air stream
Lab sample wet thickness range*	1-60 μm
Lab sample dry thickness range*	0.3-5 μm
Coating methods	Mayer rod, slot die, spin coating, spray coating

* For TBF coated by Mayer Rod or applicator technique

Film Properties

The refraction indices of negative C-plate TBF CN-LT-1000 retardation film are shown below.



Optical characteristics
(at λ=550 nm)

TBF parameter	Value
n_x	1.71
n_y	1.71
n_z	1.59
Δn_{yz}	0.12
Δn_{xz}	0.12
Depolarization	< 0.01%

Note: Principal refraction indices measured using Axometrics Axoscan Mueller Matrix Polarimeter

Environmental Stability

The TBF™ CN-LT-1000 retarder has been subjected to the wet environmental test (temperature 60 °C, and relative humidity 90%) for 1000 hours. The retarder demonstrates the high temperature stability (230 °C), strong adhesion to TAC and glass substrates, and high durability.

Crysoptix KK is a leading material technology company developing, manufacturing and marketing products based on a molecular design of organic components. Crysoptix manufactures a set of unique liquid inks, which are used to produce optical films for LCD. Crysoptix technology is covered by an extensive patent portfolio and is currently being applied to product improvements and cost reduction opportunities in LCD industry.



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