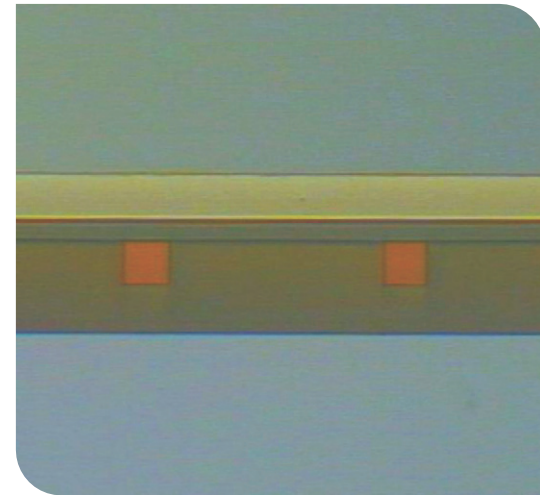


Multimode Waveguide Resins

Optical materials, Devices & Technical services

08

ChemOptics



Description

The WIR30-RI series are photoactive UV curable resins based on fluorinated acrylate. In particular, they are very useful for optical multimode waveguide device applications such as 1 x n optical splitter and optical interconnections with UV embossing (Imprinting) technology. UV imprinting technology has good advantages for simple fabrication of optical waveguide devices due to its photolithography and dry etching free process for waveguide patterning. These resins have low optical loss at near 830 and 1310 nm wavelengths, small birefringence, and excellent environmental stability. To obtain the best film quality, a nitrogen environment should be recommended during the UV exposure time.

Model Number

- WIR series

Features

- UV curing type
- Low optical loss
- Environmental stability
- Controllable refractive index
- Low shrinkage
- Solvent free

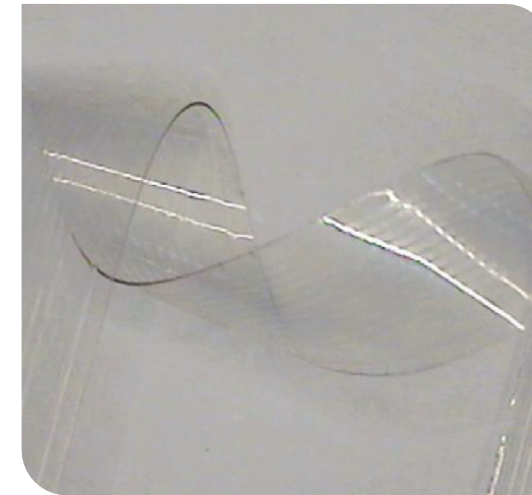
Applications

- Optical planar lightwave circuits
- Multimode optical devices
- Multimode splitter
- Optical interconnections
- Polymer optical bench
- Micro optical elements

Performance Specifications

Exguide™		WIR30-500	WIR30-480	WIR30-450
Liquide	Viscosity (cps @ 25°C)	150 ~ 180	180 ~ 240	210 ~ 270
	UV-exposure (under N ₂)	> 2,500 mJ/cm ² (160 ~ 200 °C/30 min, post baking)		
Film	Propagation Loss* (dB/cm)	0.83μm	< 0.05	
		1.31μm	< 0.11	
		1.55μm	< 0.42	
	Refractive Index @ 1.55μm	1.50	1.48	1.45
	Birefringence (n _{TE} - n _{TM})	0.001 ± 0.0005		
	Linear shrinkage (solid to solid)	< 5%		
Glass Transition Temp. (Tg)	Not Detectable			
Degradation Temp. (1 wt%)	310 ± 20°C			

- *Measured from slat waveguide (prism coupling method)
- Refractive index is precisely tunable from 1.45 to 1.50 by request.



Description

The FOWG series are photoactive UV curable resins based on acrylate. They are applicable to flexible optical waveguide devices. UV curing technology has good advantages for simple fabrication of optical waveguide devices due to its photolithography and dry etching free process for waveguide patterning. These resins have low optical loss at near 830nm wavelength, small birefringence, and excellent environmental stability. To obtain the best film quality, a nitrogen environment should be recommended during the UV exposure time.

Model Number

- FOWG series

Applications

- Flexible optical PCB

Features

- UV curing type
- Low optical loss
- Environmental stability
- Low birefringence

Performance Specifications

Exguide™		FOWG-116	FOWG-115
Liquide	Viscosity (cps @ 25°C)	40 ~ 120	
	UV-exposure (under N ₂)	> 1400 mJ/cm ² (160°C/30min, post baking)	
	Propagation Loss* (dB/cm)	< 0.1 dB/cm @ 0.83μm	
	Refractive Index @ 0.83μm	1.547	1.506
Film	Birefringence (n _{TE} - n _{TM})	< 0.0001	
	Linear shrinkage (solid to solid)	< 5%	
	Glass Transition Temp. (Tg)	30 ~ 50°C	
	Degradation Temp. (1 wt%)	280 ± 20°C	270 ± 20°C

- *Measured from slat waveguide (prism coupling method)