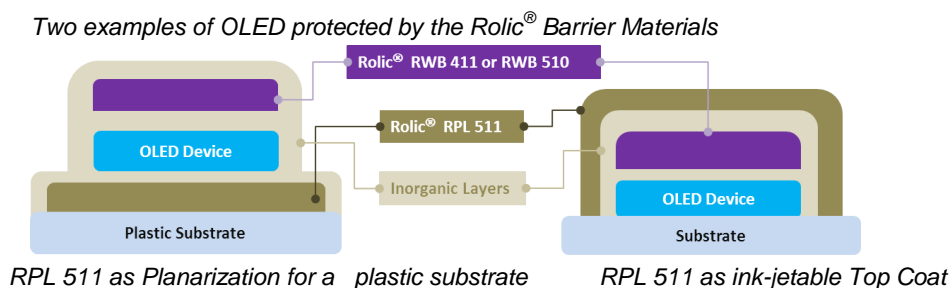


Technical Data Sheet Rolic® RPL 511

Description Rolic® RPL 511 is a photo curable resin used as planarization layer or interlayer in a high performance barrier stack for foils or thin film encapsulation (TFE), e.g. in organic photo-voltaic (OPV) and organic light-emitting diode (OLED). Planarization is essential for subsequent inorganic layers; it can also be used as top-coat.



- Features**
- VOC-free (volatile organic compound – free)
 - Suitable for coating in vacuum
 - UV-curable (<395nm)
 - Fast crosslinking in oxygen free atmosphere
 - Formulation developed for ink-jet and slot die coating

Properties of liquid

Appearance	Clear yellowish liquid	
Viscosity @ 25°C/55°C	28 mPa.s / 11 mPa.s	(Brookfield DVII-CP40)
Density	0.96 g/cm ³	
Surface tension	~34 mN/m	
Water content	<0.05%	(Karl Fischer)
Refractive Index	1.47	(n _D 20°C)

Properties of film

E _{modulus}	>1'000 MPa / >200 MPa	(DMA @ 25°C/120°C)
T _g	~120°C	(DMA)
Surface energy	~35 mN/m	(Contact angle method)
Transparency	>95% of glass reference	(T @420-650nm, 20µm on glass)
Haze	<1%	(H @420-650nm, 20µm on glass)

Processing Preferred printing technology for Rolic® RPL 511 is either slot die coating or ink-jet printing with printhead heated at 50°C-60°C, and should be applied in a thickness range from 5 to 20µm. It is a UVA-curable material with a strong UVA-absorption up to 395nm, with fast cross-linking in an oxygen-free atmosphere. The typical UV dose level is between 1J/cm² to 3J/cm². It is anyhow recommended to conduct a ladder study for optimization of the curing conditions. For optimal interface adhesion, a surface treatment (e.g. O₂ plasma) of the organic or inorganic substrate is recommended before processing of Rolic® RPL 511.

Handling and Storage

Storage temperature	20°C – 25°C
Storage container	product must be protected from light (store in original packaging only)
Shelf life	6 months

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