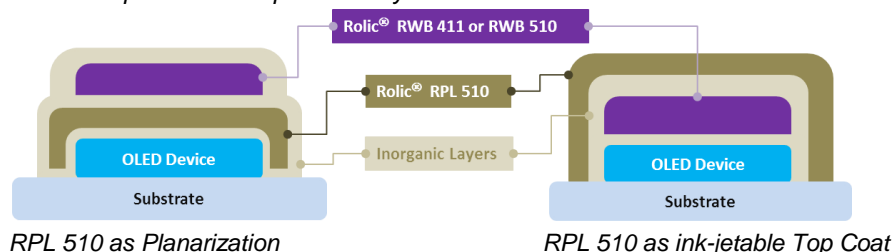


Technical Data Sheet Rolic® RPL 510

Description Rolic® RPL 510 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). The version 510 is optimized for fast curing. Planarization is essential for subsequent inorganic layers; it can also be used as top-coat.

Two examples of OLED protected by the Rolic® Barrier Materials



- 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	32 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	~110°C	(DMA)
	Surface energy	~35 mN/m	(Contact angle method)
	Transparency	>98% of glass reference	(T @420-650nm, 20µm on glass)
	Haze	<1%	(H @420-650nm, 20µm on glass)

Processing Preferred printing technology for Rolic® RPL 510 is ink-jet printing with print head 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 510.

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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