

LED | LUMISIL® 590/591

HIGH PERFORMANCE HRI SILICONE

LUMISIL® 590/591 – HRI Silicones for LEDs

WACKER has extended its LUMISIL® product portfolio to meet the demanding requirements of the LED industry. The LUMISIL® HRI silicones offer high refractive index and high performance in LED encapsulations including high light efficiency and outstanding reliability.

Product Description

The LUMISIL® series for HRI is a transparent, addition-curing and two-part silicone LED encapsulant.

Features of LUMISIL® HRI Silicones

- Excellent processability due to low viscosity
- Dry, non-stick surface after cure
- Excellent optical performance resulting in high LED light efficiency
- High adhesion force on PPA, W-EMC and silver
- Remarkably high protection against heat, moisture and sulfur corrosion leading to outstanding reliability
- Excellent thermal stability over long time

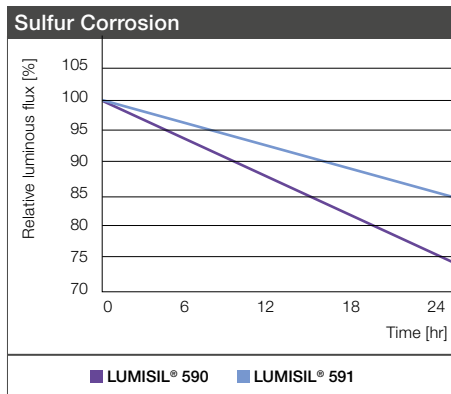
Applications

- Encapsulation of optical components
- LED lens production

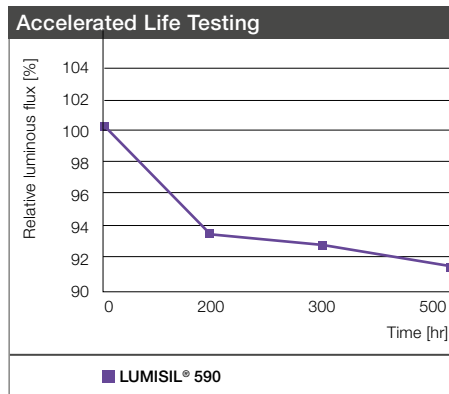
Product Information				
Property	Test Method	Unit	LUMISIL® 590	LUMISIL® 591
Description			Medium hardness LED encapsulant	High hardness LED encapsulant
Uncured				
Viscosity: comp. A at 25 °C	ISO 3219 D = 0.5 /sec	[mPa·s]	7,500	7,500
Viscosity: comp. B at 25 °C		[mPa·s]	900	2,300
After Mixing A and B				
Mixing ratio (parts by weight)		A : B	1 : 2	1 : 9
Viscosity: catalyzed, at 25 °C	ISO 3219 D = 0.5 /sec	[mPa·s]	2,000	2,500
Platinum catalyst in component			A	A
Cured				
Appearance			Transparent	Transparent
Hardness, Shore 4 h / 150 °C	ISO 868		A 65	D 40
Refractive index	nD ²⁵		1.53	1.53
Transmittance (1 mm thickness)	400 – 700 nm	[%]	> 91	> 91



Accelerated Life Testing

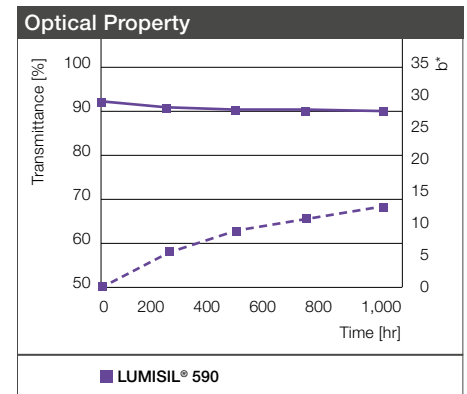


Test condition Sulfur Corrosion:
70 °C storage with sulfur powder (0.2 g / 100 ml jar)



Test condition Accelerated Life Testing:
Current 150 mA; temperature 85 °C

Thermal Stability



Test condition Optical Property:
235 °C storage for 1000 hr



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