LNP™ SLX1271D RESIN FOR EXTERIOR DIFFUSIVE AUTO LIGHTING EFFECTS

CHEMISTRY THAT MATTERS™

LNP™ ELCRES™ SLX1271D RESIN WELL-SUITED FOR EXTERIOR DIFFUSIVE AUTO LIGHTING EFFECTS

Automotive OEMs are continuously looking for eye-catching designs and iconic branding. Illuminated grilles and emblems with welcome lighting are new examples of this. Integrating these can be difficult, particularly into complex geometries. For example, when combining mixed chrome/illumination effects. Transparent polycarbonate (PC) has excellent mechanical properties, but articles may require additional ultraviolet light protection (UV) if a high level of color and gloss durability is required after weathering. This can be achieved by applying a UV-coating, but this adds cost, complexity and limitations for intricate designs.

The new LNP ELCRES SLX1271D resin provides a weatherable, diffusive solution that allows selective plating on PC/ABS providing OEMs a route to design and produce intricate, cost effective, innovative illuminated signature features for the exterior of their cars, making them instantly recognizable.

REMARKABLE WEATHERING PERFORMANCE OF ELCRES SLX RESINS

For outdoor applications, weathering performance is a critical factor. The reason why LNP SLX resins are such a good option for exterior applications is that our polycarbonate copolymer creates a self protecting layer when exposed to UV light. This significantly improves the retention of the aesthetics compared to parts based on UV stabilized polycarbonate.

WEATHERING MECHANISM

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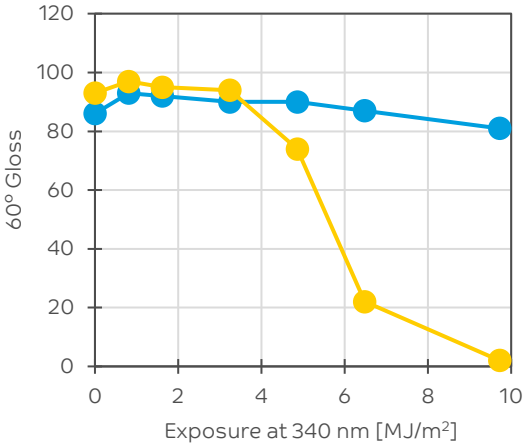
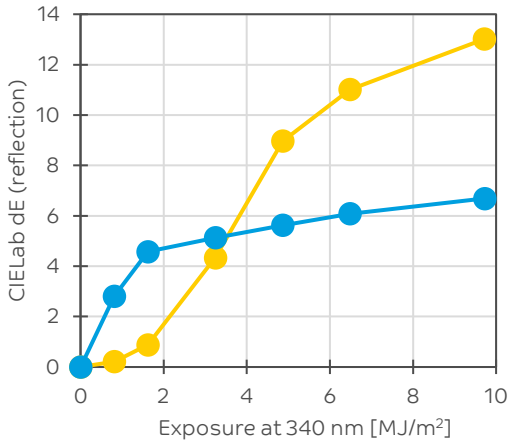
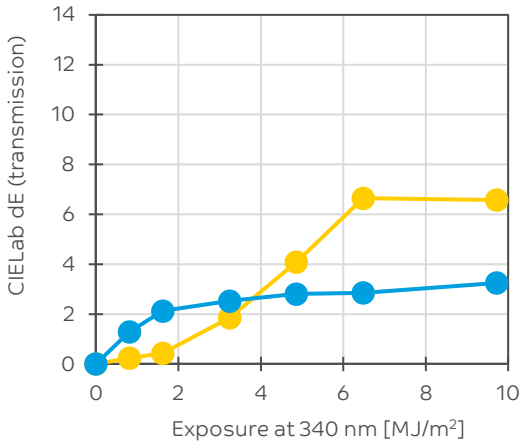
So, while the change in appearance continues in UV stabilized PC after long term exposure, SLX benefits from the protective layer enabling a much smaller change in the color and gloss in the diffusive SLX1271D, compared with the UV stabilized, diffusive PC.



ISO4892-2 Accelerated weathering *

● Diffusive SLX ● Diffusive UV PC





* 3.1 MJ/m² of exposure at 340 nm compares to ~ 1 year of outdoor weathering in Florida

The formation of this protective layer additionally limits bulk degradation in the parts. This can enable better retention of the mechanical properties in SLX resins versus UV polycarbonate parts after weathering.

Classification: Internal Use

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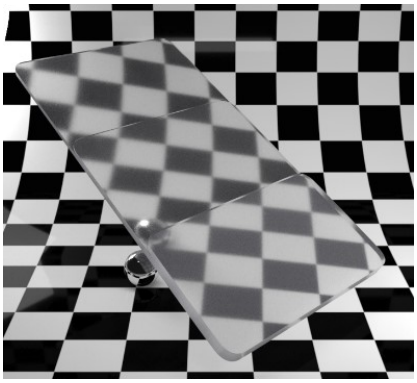
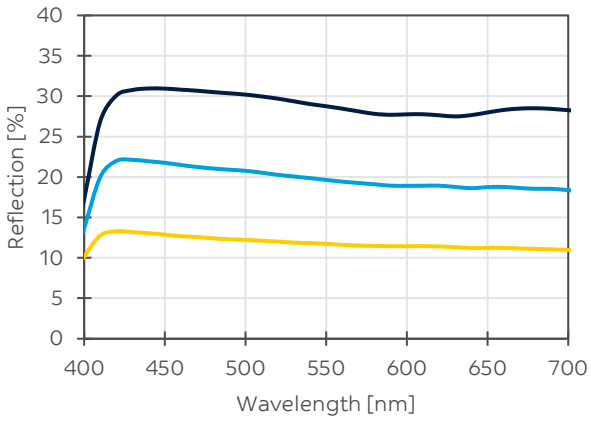
The LNP ELCRES SLX1271D resin base is transparent with a refractive index of n_D = 1.590, which is very close to that of polycarbonate (n_D = 1.586). As such the same diffuser technologies that are used to achieve light diffusion in polycarbonate can be used in the SLX1271D resin. The final diffusion effects are determined by the type and loading of the diffuser technology used, which can be customized.



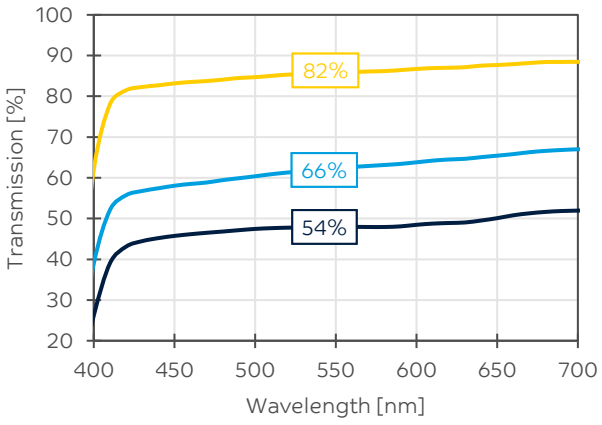
The table and spectra below indicate the potential optical properties of three, different light diffusion levels, ranging from low, medium to high diffusion power, as characterized by the transmission and half power angle (HPA).

Diffusion Power		Low	Medium	High
Parameter	Thickness (mm)	8G7B2594X	8G7B4487X	8G8B6703X
Transmission	1.0	88.7%	86.%2	76.0%
HPA	1.0	2.5°	18.7°	33.8°
Transmission	3.0	79.7%	61.3%	50.2%
HPA	3.0	24°	42.3°	57.1°

REFLECTION SPECTRA (2.5 mm) Lighting off mode



TRANSMISSION SPECTRA (2.5 mm) Lighting on mode



Low diffusion Medium diffusion High diffusion

Classification: Internal Use

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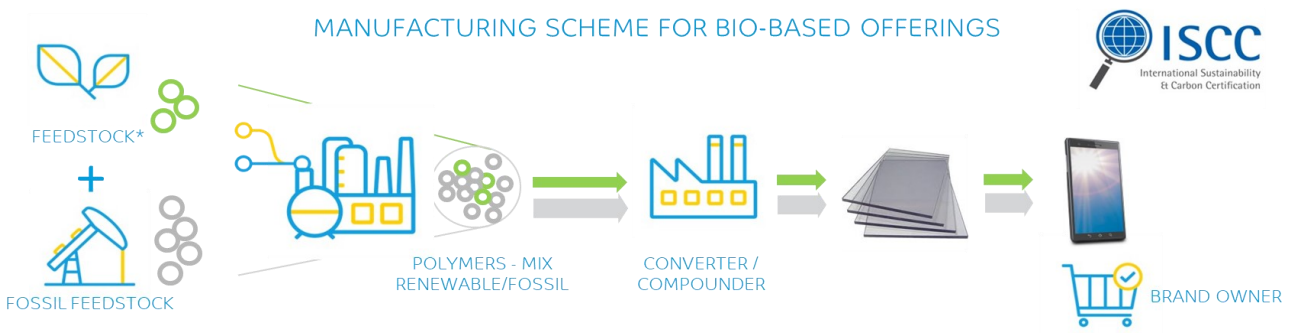
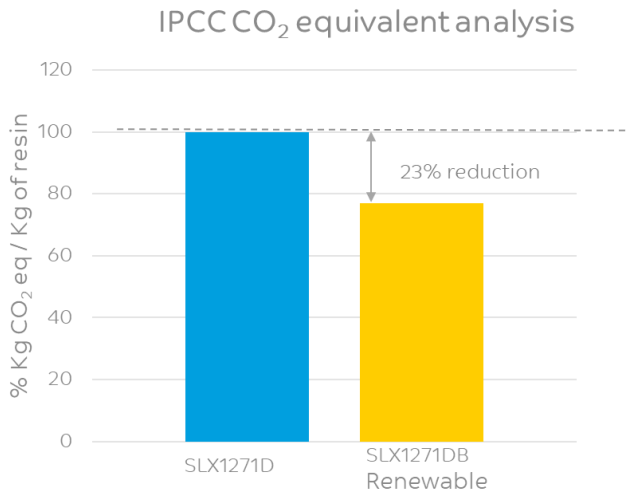
SUSTAINABILITY

While the elimination of secondary operations such as painting and coating can contribute positively to sustainability, the new diffusive SLX resin is also available in a version that utilizes renewable feedstock derived from waste or residue (e.g. crude tall oil from the wood industry). A 23% reduction in the carbon footprint is achieved via an ISCC+ certified, mass balance approach in the renewable LNP ELCRIN SLX1271DB resin.



RENEWABLE COMPOUNDS COMPARED WITH CONVENTIONAL COMPOUNDS

- Same product, same properties: Drop in solution with no tooling changes
- Better carbon/energy footprint
- Equivalent color space
- Requalification not required



SLX1271D compared with Renewable SLX1271DB

Bio-based resins of cracker feedstock:

- Virgin equivalent properties
- Mass balance approach
- Bio content certified by ISCC+

ISCC www.iscc-system.org contributing to responsible sourcing of bio-based materials

Certificates available upon request

CONTACT INFORMATION

SABIC SPECIALTIES BUSINESS

AMERICAS
E: Specialties.Americas@sabic-hpp.com
T: +1 800 845 0600

ASIA PACIFIC
E: Specialties.Asia@sabic-hpp.com
T: +86 400 833 1033

EUROPE
E: Specialties.EMEA@sabic-hpp.com
T: +36 1 288 3040

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LNP RESINS & COMPOUNDS

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