

# CLEAR LEXAN™ EXL RESIN

Based on a proprietary technology, clear LEXAN EXL resin offers a range of potential solutions for applications that require transparent or translucent color capabilities.

## POTENTIAL BENEFITS OF CLEAR LEXAN EXL RESIN

Benefits of opaque LEXAN EXL resin have also been validated for clear LEXAN EXL resin. These benefits include:

Impact	Best-in-class ductility to $-40^{\circ}\text{C}$ with an outstanding balance of ductility and flow
Weatherability	Excellent retention of mechanical properties upon outdoor exposure
Aging	Better retention of properties vs. other polycarbonate resins
Knitline strength	A significant improvement over PC/ABS material
Flow	Very high flow offering with improved ductility over other polycarbonate resins

In the clear LEXAN EXL resin product portfolio (see figure A) a wide range of products is available, offering transparency in combination with special features such as UV-stabilized, improved release, FDA or EU-FC compliant as well as medical ISO10993 compliant.

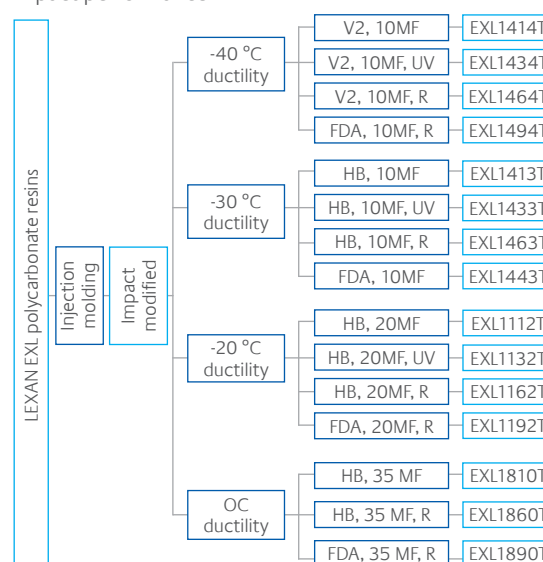
Clear LEXAN EXL resin products are offered in a wide range of viscosities and offer ductile (ASTM D256) impact performance down to  $-40^{\circ}\text{C}$  temperature conditions.

Clear LEXAN EXL resin has also been shown to outperform standard PC in dishwasher resistance (see figure B). Where regular PC, of similar viscosity, is showing brittle failures after only 150 wash cycles, LEXAN EXL resin maintains ductility through 600 cycles.

To show the potential of clear LEXAN EXL resin in applications that are exposed to frequent high heat and high humidity environments, (e.g. water cookers or autoclavable medical instruments/parts), the outstanding retention of properties under these conditions are tested. They are shown to outperform standard polycarbonate materials (see figure C), allowing for much longer lifetimes in these applications.

FIGURE A

Impact performance



Note: For healthcare grades, please refer to the SABIC Healthcare brochure

FIGURE B

INI strength @ RT as function of dishwasher cycles (0-600 Cycles)

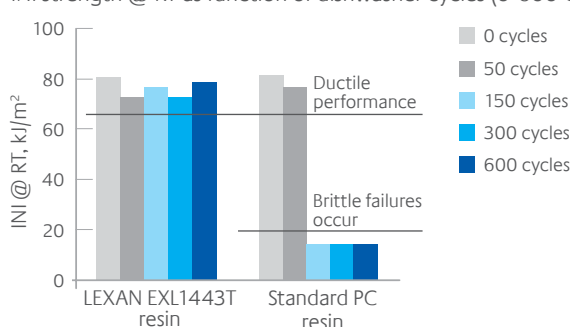
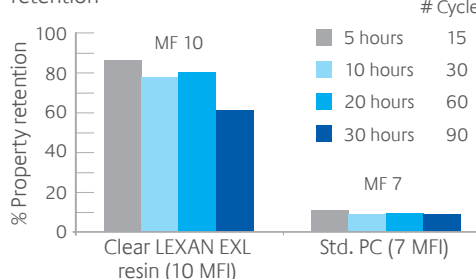


FIGURE C

Extended steam autoclaving @  $121^{\circ}\text{C}$  notched izod impact retention



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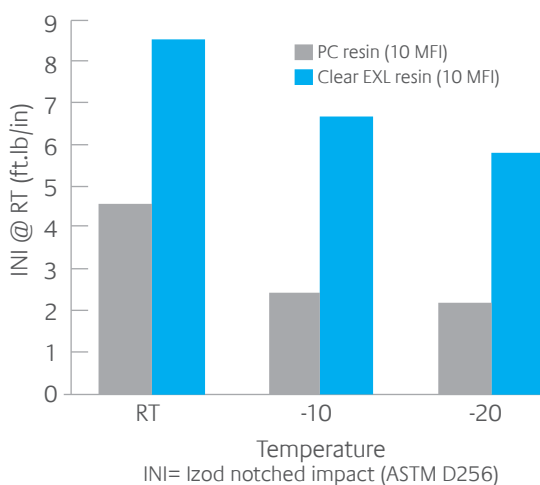
Clear LEXAN EXL resin is also an excellent base for SABIC's VISUALFX™ resin offerings. Typically, the use of special pigments - required to offer the special and unique effects - adversely affects mechanical properties. Due to the improved toughness of clear LEXAN EXL resin, these products offer a combination of aesthetic effects with much improved mechanical properties (see figure D).

For a complete overview of VISUALFX resin offerings in LEXAN EXL resin, please contact your SABIC account manager.

The copolymer structure of LEXAN EXL resins, made from polycarbonate and siloxane, results in slightly reduced transparency and somewhat higher haze than standard polycarbonate.

Clear LEXAN EXL resins are potentially suitable for applications such as mobile phone and notebooks, small appliances, safety and sports equipment and autoclavable medical devices.

**FIGURE D**  
VISUALFX resin diamond effect properties in PC matrix



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