



## ***Makrolon® FAQ's***

### **How do I clean Makrolon® polycarbonate sheet?**

The best way to clean Makrolon® polycarbonate sheet is to use mild soap and water with a soft microfiber cloth, followed by a lukewarm water rinse. For detailed information, please refer to the cleaning instructions for polycarbonate located under our Products Properties, Use and Care webpage:

<http://www.sheets.covestro.com/Technologies/Americas/Product-Properties-Use-and-Care.aspx>

### ***How do I cut Makrolon® polycarbonate sheet or Hygard® laminated sheets?***

Makrolon® polycarbonate sheet can be cut using conventional carpentry tools. Always use proper safety equipment when working with power tools. For best results use sharp cutting tools and minimize vibration of the material. For specific instructions on cutting polycarbonate, please refer to the Makrolon® Fabrication Guide: <http://www.sheets.covestro.com/Technologies/Americas/Fabrication-Manual.aspx>

### ***Is Makrolon® the same as Lexan® Polycarbonate?***

Makrolon® and Lexan® are trade names for polycarbonate resin and sheet. Makrolon® is the trade name used by Covestro and Lexan® is the trade name used by SABIC for their polycarbonate materials.

### ***Is Makrolon® the same as Hyzod®?***

The Makrolon® trade name replaced the Hyzod® designation when Covestro Corporation acquired Sheffield Plastics in 1999.

### ***What types of sealants should be used with Makrolon® polycarbonate sheet?***

For specific instructions on glazing sealants, please refer to the Makrolon® Fabrication Guide: <http://www.sheets.covestro.com/Technologies/Americas/Fabrication-Manual.aspx>

### ***How do I bond two pieces of Makrolon® polycarbonate sheet together?***

Makrolon® polycarbonate material can be bonded using various techniques including adhesive bonding, solvent bonding or mechanical fastening. For specific instructions on bonding polycarbonate, please refer to the Makrolon® Fabrication Guide: <http://www.sheets.covestro.com/Technologies/Americas/Fabrication-Manual.aspx>

### ***How can I get a declaration statement on:***

***RoHS ?***

***REACH?***

***Conflict Metals?***

For product declaration statements, please refer to the appropriate links under our Agency and Compliance webpage: <http://www.sheets.covestro.com/Technologies/Americas/Agency-and-Compliance.aspx>

Questions concerning FDA food contact and polycarbonate approved sheet can be addressed here: <http://www.plastics.covestro.com/Library/Certificates/Food-Contact.aspx>

A letter confirming our ISO certification is located here:

<http://www.sheets.covestro.com/Technologies/Americas/Agency-and-Compliance.aspx>

### ***Where can I find information on the UV light transmission of your polycarbonate?***

Makrolon® polycarbonate sheet is essentially opaque to UV light from 385 nanometers and below. A copy of the UV/VIS Light Transmission Curve is located under our Products Properties, Use and Care webpage:

<http://www.sheets.covestro.com/Technologies/Americas/Product-Properties-Use-and-Care.aspx>

### ***How should I store my polycarbonate?***

Makrolon® sheets and reels should be stored in a well-protected, ventilated area with no direct exposure to sunlight or harsh weather conditions. If temporarily stored outside, in the natural environment, sheets and reels should be covered with a heat reflecting opaque cover.

### ***How do I remove old masking from the back of the polycarbonate sheet?***

Old masking is difficult, if not impossible to remove without damaging the sheet's surface. The protective masking has aged and bonded directly onto the polycarbonate making removal challenging.

### ***How do I remove a label or sticker or grease from Makrolon® polycarbonate?***

To remove labels, stickers, glazing compounds or grease, rub gently with a soft cloth wetted in VM&P naphtha or isopropyl alcohol. Wash with mild soap and rinse thoroughly with water. Do not use razor blades, scrapers, or squeegees as they items will scratch the sheet. Another method that may be employed is to gently heat the label with a hairdryer (not a heat gun) to soften the label's glue prior to removal.

***How do I remove scratches from Makrolon® polycarbonate sheet/window?***

Deep scratches and gouges made by sharp objects such as keys, screwdrivers, and knives cannot be repaired. Fine scratches may be reduced in severity or cosmetically hidden by using a buffing compound such as NOVUS 2 Plastic Fine Scratch Remover, followed by a cleaning and polishing agent like NOVUS 1. However, for abrasion resistant coated products such as Makrolon® AR, Mak 15 or Makrolon® FC, buffing the coated surface is not recommended since doing so further damages and thins the coating which worsens the condition. Once removed, the coating cannot be repaired.

***How much weight can polycarbonate hold?***

Weight loading is a complex subject that is affected by many variables, such as gauge, sheet dimension, edge engagement, and whether the weight is from a single point or is evenly distributed across the sheet. Covestro recommends contacting a qualified structural engineer for advice on this matter.

***Where can I find information regarding Florida building codes, for Makrolon® polycarbonate, as it relates to the Miami-Dade County hurricane zone?***

Miami-Dade County's Notification of Approval (NOA) can be located here:

<http://www.sheets.covestro.com/Technologies/Americas/Agency-and-Compliance.aspx>

***What is the normal operating temperature of polycarbonate?***

Makrolon® sheet has a heat deflection temperature of 280°F (@ 66psi), a glass transition temperature (Tg) of 297°F and a softening temperature of 320°F.

Makrolon® maintains its mechanical strength and optical properties during continuous use from -40 to 212°F, but can be used for short term or cyclical conditions up to 280°F. Depending upon strain rate, polycarbonate transitions from a ductile to a brittle material at a temperature below -40 F, affecting its impact resistance and toughness.

***How long will Makrolon® last?***

Covestro manufactures a variety of Makrolon® sheet products for numerous applications. Please review the warranty details which are located on the product information page. Our products are engineered to the highest standards, but they require proper installation and maintenance. Product claims are subject to terms on the published warranty.

***I need information on flame spread ratings for sheets being used as building material.***

Flame spread ratings can be found in our ICC-ES evaluation service report located here:

<http://www.sheets.covestro.com/Technologies/Americas/Agency-and-Compliance.aspx>

***Can Makrolon® sheets be bent or curved?***

Yes. Frequently referred to as “cold bending”, non hard-coated products such as Makrolon® GP and Makrolon® SL polycarbonate sheets can be cold-bent to a minimum radius based upon the sheet thickness. As a guideline, the material can be curved to a minimum bend radius equal to 100 times the sheet’s thickness: (R=T x100). Solid sheets can be cold-bent in either direction.

However Multiwall UV products can only be cold formed in the direction of the ribs, so that the ribs will be gently curved (lengthwise - the cold-bending must be parallel to the ribs of the sheets, never crosswise or run the risk of buckling the sheet).

Makrolon® FC may be cold-formed, whereas hard-coated Mak 15 and Makrolon® AR cannot be cold-formed.

***Do Makrolon® products have a UL 94 flame rating?***

Yes, many Makrolon® products have an associated UL 94 flame rating. Please visit the UL94 Component file for current information: <http://www.sheets.covestro.com/Technologies/Americas/Agency-and-Compliance.aspx>

***Do sheets expand in heat/contract in cold?***

Yes. Makrolon® sheets expand with heat and contract with cold. As a general guideline, applications should be designed to allow a 1/16<sup>th</sup> inch per foot of length and width for expansion or contraction.

***I’m not sure which way to install Lumen XT, smooth or texture side out?***

Makrolon® Lumen XT can be installed in either orientation based upon desired aesthetics and performance. Performance depends on the specific application but in general when used over a matrix of LED lights the texture side out will give higher luminance uniformity while the smooth side out will give more beam spread.

***I need a Material Safety Data Sheet (MSDS) for one of your products.***

For Safety-Data-Sheets please visit: [Product Safety First website - SDS search page.](#)

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