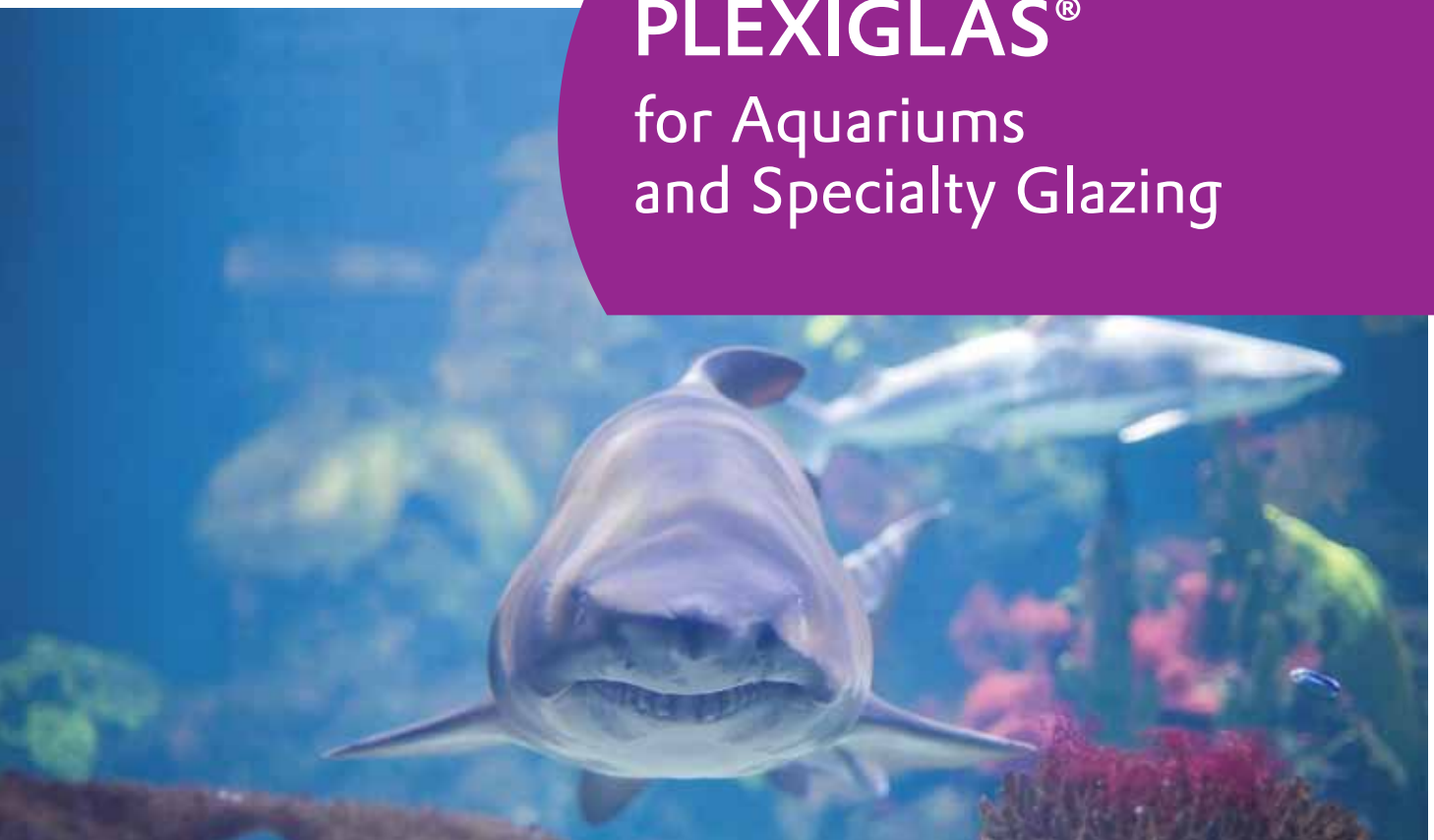


# PLEXIGLAS®

for Aquariums  
and Specialty Glazing



PLEXIGLAS® 



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# Insights into new dimensions

Gone are the days when large aquariums offered only a glimpse of the magnificent animals inside them. Today's spectacular constructions let visitors come eye to eye with exotic animals in many different locations. Undreamed-of insights and outlooks are also possible in other areas too. Swimmers underwater can see through the walls of a swimming pool; engineers can look into cross-sectional models of machines; doctors can observe patients inside hyperbaric chambers; researchers dive down to the ocean's depths in submersibles with transparent canopies.

Materials like PLEXIGLAS® help to push back the boundaries of these developments and projects. The machining possibilities offered by the material are virtually endless. Creative professionals in architecture, prototype building, design, and the fine and decorative arts can give free rein to their imagination when shaping and coloring their projects with PLEXIGLAS®.

We at Evonik are among the world's leading suppliers of PMMA and acrylic products, invented 1933 by Dr. Otto Röhm and his team. The products we market under the PLEXIGLAS® brand (and under the ACRYLITE® brand in the Americas), as well as our know-how, are available everywhere, either directly via our global distribution network, via regional distributors or qualified fabricators.

**Be inspired to think in new dimensions!**



## A specialized material that is reliable and durable

PLEXIGLAS® is one of the world's highest-quality and most versatile plastics. It can be manufactured with many different functional properties and surfaces: highly light-transmitting, light-diffusing, light-focusing, sight-screening, heat-reflective, heat-shielding, heat-resistant, heat-insulating, noise-reflecting and scratch-resistant.

Though it weighs only about half as much as glass, it has eleven times its impact strength, making it the ideal material for withstanding high pressures. Another benefit is the material's machining and fabrication behavior: it is tough during handling and installation, can be routed, drilled and sawed, as well as durably thermoformed. In addition, it is easy-care and highly suitable for permanent use.



Source: aquatonic

PLEXIGLAS® offers optimum transparency and retains its original clarity for many years to come. There is no embrittlement or yellowing. We guarantee our clear-transparent blocks, solid, multi-skin and corrugated sheets against yellowing for 30 years. So exciting insights will keep their attraction in the long term. What is more, PLEXIGLAS® offers excellent resistance to weathering and aging, making it the perfect choice for permanent service.

PLEXIGLAS® can be manufactured in color and with a satin appearance. This gives architects, aquarium and swimming pool builders and all other creative professionals an almost unlimited selection of colors. The blocks are available in different sizes and thicknesses with good thickness tolerances. Special processes make it possible to combine individual elements to form larger structures without visible joints.



Source: Heinz Fritz Kunststoffverarbeitung

## PLEXIGLAS® for unusual insights

Water that appears to be suspended in the air in the shape of a block - PLEXIGLAS® enables very special effects, and offers a perfectly clear view. It is the ideal material for aquariums, pools, zoos and water parks.

Water structures are becoming ever more spectacular, from aquariums and enclosures where visitors come face to face with animals, to pools with see-through walls. PLEXIGLAS® is the ideal choice for these applications. It is absolutely colorless and provides an undistorted view. The bodies of swimmers and animals keep their true appearance under water, in the right colors and proportions. There is no greenish tinge or clouding, even when thicker material is used.

But structures like aquariums and pools make high demands on the material, as well as setting high optical standards. The material has to withstand immense water pressure. Where glass comes up against its technical limits, the special properties offered by PLEXIGLAS®

give visitors a look below the water surface. This innovative plastic can be manufactured in thicknesses that safely withstand tons of water pressure (in monolithic blocks up to 150 mm thick). The largest size that can currently be produced is 7,800 x 3,000 mm. To obtain greater thicknesses or larger sizes, individual PLEXIGLAS® components can be combined. Our specialty adhesives (ACRIFIX®) create an invisible joint, making a perfect, homogeneous impression.

The components retain their stability even under enormous permanent load and show no deflection. Once it has been correctly installed, the design remains just as it is.

Temperature differences on both sides of the water structure are no problem for PLEXIGLAS® either. The material offers excellent insulation. No chance for condensation and fogging. The visual experience remains an undiluted pleasure.



Source: GEOMAR Helmholtz, Zentrum für Ozeanforschung Kiel

# PLEXIGLAS® withstands extreme pressure

Mankind has always dreamed of exploring the world that lies underwater. Meanwhile, submersibles dive down to the depths of the oceans and offer passengers a fascinating view through transparent canopies. The deeper they venture, the greater the demands on the material, which is exposed to enormous pressure.

No problem for PLEXIGLAS®. It has eleven times the impact strength of glass but nevertheless offers a clear, distortion-free view, whether deep below the sea or in hyperbaric chambers used for medical purposes on land.

Another advantage is that the material is monolithic. It can be manufactured in large sizes to produce glazing for pressure equipment. The result is a homogenous block that is extremely stable, without joints or weak points.

When a material has to withstand extreme loads, safety has the highest priority. To meet these requirements, we provide PLEXIGLAS® GS blocks in QPA quality (internal quality inspection before delivery), with the corresponding certificates.

These cover the following, among others:

- the EU Pressure Equipment Directive
- Rules for Classification and Construction, I – Ship Technology (Underwater Technology, Diving Systems) of Germanischer Lloyd
- SAFETY STANDARD FOR PRESSURE VESSELS FOR HUMAN OCCUPANCY ASME PVHO-1-2007



PLEXIGLAS®  
**opens many doors**





Source : Heinz Fritz Kunststoffverarbeitung

PLEXIGLAS® offers undreamed-of insights due to its transparency, which is indispensable for many technical applications. If an engineer wants to examine the inside of a new machine, for example, this is the material of choice. The engineer can inspect the machine's operation through a sight glass, but is protected from its workings. The material is resistant to impact and to solvents and chemicals.

What is more, PLEXIGLAS® is very easy to machine and fabricate by mechanical and thermal processes, and can be formed into almost any required shape. It is suitable for drilling, sawing, routing, polishing and bending, making it the ideal material for building prototypes, specimens and display models.



PLEXIGLAS®  
**adding striking touches**



Source: William Price

PLEXIGLAS® displays its quality not only when it is barely visible, but also when it is meant to attract the viewer's eye. Designers can let their visions run wild and create spectacular optical effects, in elegantly curved lines, noble monoliths or scintillating colors.

Pure blocks of PLEXIGLAS® create very special touches even without being shaped. They catch the eye as architectural or artistic elements. Whether in transparent, translucent or fluorescent grades, the material's brilliance and transparency always come to the fore. In its original form, PLEXIGLAS® is absolutely colorless. Combined with light and water, it enables the creation of unique objects that underline the flowing character of the element involved.

This transparency is the foundation for boundless variety. As a colorless material, PLEXIGLAS® can be precisely colored in almost any desired hue. Architects, interior designers, furniture makers and creative professionals from the fields of art and advertising can give any conceivable color to their imaginings. Blocks can be supplied in all transparent, translucent and opaque colored grades, corresponding to the extensive range of colors for PLEXIGLAS® sheets. This is how we give you flexible support to realize your design ideas!

® = registered trademark

PLEXIGLAS is a registered trademark of  
Evonik Röhm GmbH, Darmstadt, Germany

Certified to DIN EN ISO 9001 (Quality) and  
DIN EN ISO 14001 (Environment)

Evonik Industries is a worldwide manufacturer of  
PMMA products sold under the PLEXIGLAS® trade-  
mark on the European, Asian, African and Australian  
continents and under the ACRYLITE® trademark in  
the Americas.

This information and all further technical advice is  
based on our present knowledge and experience.  
However, it implies no liability or other legal respon-  
sibility on our part, including with regard to existing  
third party intellectual property rights, especially  
patent rights. In particular, no warranty, whether ex-  
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in the legal sense is intended or implied. We reserve  
the right to make any changes according to techno-  
logical progress or further developments. The cus-  
tomer is not released from the obligation to conduct  
careful inspection and testing of incoming goods.  
Performance of the product described herein should  
be verified by testing, which should be carried out  
only by qualified experts in the sole responsibility  
of a customer. Reference to trade names used by  
other companies is neither a recommendation, nor  
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**Evonik. Power to create.**