PLEXIGLAS® and EUROPLEX® Films
Always on Top.
You meet PLEXIGLAS® every day in all parts of life. It provides a clear view and adds brilliance to a variety of objects. It protects against rain, hail and stormy weather. It can withstand extreme pressure and strong solar irradiation. It is impact-resistant and reflects the world in its all true colors.

PLEXIGLAS® is environmentally friendly and can be recycled after careful separation from other materials. Thanks to its high functionality and many specialty grades, PLEXIGLAS® is exceptionally adaptable to new applications that call for novel properties. The brand has made a name for itself in products that make life easier, safer, diverse and exciting, as well as in meeting very stringent requirements.

Capitalizing on all these features, Röhm offers a wide product portfolio of PLEXIGLAS® and EUROPLEX® films. EUROPLEX® HC* Films combine excellent weatherability with outstanding chemical resistance due to a PVDF layer on top.

* HC = higher chemical resistance
PLEXIGLAS® and EUROPLEX® chill roll films are produced between 50 μm and 150 μm. The films manufactured by using this process show a high-glossy surface. Matt-surface films are also available using the same process.

Röhm can deliver custom-length rolls, as well as cut-to-size sheets, thanks to its state-of-the-art cutting facility.

PLEXIGLAS® pure PMMA films in thicknesses between 175 μm and 1000 μm are made using a calender stack. As melt leaves die, film is formed at roll nip, transferring mirror-like gloss of calender rolls onto film surface. This process results in PLEXIGLAS® films with high-gloss surfaces, which are mainly used in the graphics industry. From a thickness of 175 μm, decorated surfaces which have brilliant depth effects can be achieved with the help of PLEXIGLAS® films and a back printing.
PLEXIGLAS® and EUROPLEX® HC films protect glass-fiber reinforced polyester sheets against yellowing.

Thanks to their excellent UV absorption, PLEXIGLAS® and EUROPLEX® HC films offer protection against yellowing and degradation of glass-fiber reinforced polyesters (GFRP).

The excellent UV stability and weatherability of films protects glass-fibers from delaminating from surface, even after years of use in outdoor applications. This ensures an attractive visual appearance and high light transmission over an entire life cycle of GFRP sheets.

EUROPLEX® HC films have an additional PVDF layer as part of the co-extruded film; this provides high chemical resistance to aggressive substances and makes it dirt-repellent. It also yields an easy-to-clean surface on which even graffiti can be easily removed.

EUROPLEX® HC films are co-extruded with PMMA layer on back side ensuring excellent bonding to glass-fiber reinforced polyesters as PLEXIGLAS® films.

**Why do you need improved exterior material performance?**

- There is a clear drive in the market for longer warranties.

**What can you do?**

- Boost performance of your products.
- Outperform competition.

**How can you do it?**

- Protect your products with PLEXIGLAS® or EUROPLEX® films.

UV-protective films improve weatherability of polymeric substrates when laminated on top.
EUROPLEX® HC Film 99710

is a PMMA film co-extruded with PVDF, which has excellent weather resistance and can be used in different climate zones. The PVDF layer ensures excellent chemical resistance as well as a dirt-repellent effect due to its low surface tension.

The PMMA side allows good bonding to suitable substrates and printing inks. All of the protective films described above meet the requirements of RAL GZ 716.

Processing

Laminating PLEXIGLAS® or EUROPLEX® films onto polymeric substrates – films or sheets – is easy. The most common technology for bonding them to other substrates is in-line heat lamination (heat-fusing). The bond between PVC/ABS/ASA and PMMA is a melt bond. Typical lamination temperatures are between 140 °C – 180 °C. Bonding to polyolefins is possible by using adhesives.

PLEXIGLAS® and EUROPLEX® HC films provides longterm weatherability for printed and colored PVC substrates.

The excellent weatherability of Röhm’s UV protective films significantly improves the service life of decorative films in outdoor applications.

PLEXIGLAS® Film 0F011

is an impact-modified PMMA film. It is transparent, glossy and weather resistant. It protects polymer substrates, particularly PVC decorative films against environmental effects and UV radiation.

PLEXIGLAS® Film 0F032, matt

If a matt surface is required for a laminate, PLEXIGLAS® Film 0F032 offers a silky smooth surface that remains unchanged even after forming. Weatherability is at the same level as PLEXIGLAS® Film 0F011.

Fig 1: Transmission spectrum of PLEXIGLAS® Film 0F011 before and after accelerated weathering as in DIN EN ISO 4892-2, method A, cycle 1.
PLEXIGLAS® Film 99836
is a standard UV protective film for exterior grade compact laminates. It absorbs over 98% of UV radiation and shows optimal performance in long-term outdoor weathering. Its standard thickness is 50 μm and is available in widths of up to 2800 mm. The film can also be produced in 75 μm and 90 μm thicknesses and in widths of up to 2800 mm.
PLEXIGLAS® Film OF043
is our adhesive film that has been developed with a special formulation that makes it chemically compatible with melamine on both of its sides. It is available in 50 μm and 75 μm and in a width up to 2800 mm.

EUROPLEX® HC Film 99716
is a premium film for the HPL market. Virtually exceeding the UV protection performance of PLEXIGLAS® Film 99836, it has a PVDF top layer. The PVDF provides superior chemical resistance and an anti-soiling/easy-to-clean surface. Even graffiti can be easily removed using suitable cleaning agents. Its standard thickness is 50 μm, widths of up to 2800 mm are available.

All of the above products include tailored formulations of PMMA base layer to chemically bond them onto panels.

Processing
UV protective films PLEXIGLAS® Film 99836, EUROPLEX® HC Film 99716 and our adhesive film PLEXIGLAS® Film OF043 are directly applied during panel manufacturing process. No additional equipment, process step or adhesive is necessary. Standard process temperatures of 145 °C to 155 °C as well as standard process pressures of 70 bars to 100 bars are sufficient in order to incorporate Röhm’s films and achieve proper chemical bonding. Technical support is provided in preparation and application-oriented investigation of customers’ high-pressure laminates (HPL). All films can be supplied as cut-to-size sheets.
Whether light-diffusing or light-guiding, PLEXIGLAS® films offer the best light to your applications.

PLEXIGLAS® Film White 99532

is an impact modified, light-diffusing PMMA film for lighting applications that aim to offer optimal ratio of light transmission to light diffusion.

In contrast to other films used in lighting applications, this film is distinguished by a pure white color and provides excellent weatherability and UV resistance.

Whereas white PVC, PET, and PC films show color changes from the effects of UV radiation even after brief exposure, no yellowing is seen in PLEXIGLAS® Film 99532. This lighting film is resistant to weak acids and alkalis as well as nonpolar solvents. In backlit applications, it ensures uniform illumination without hotspots from light source.

PLEXIGLAS® Film Clear OF058

is based on pure PMMA without any additives; thanks to its high purity and low optical damping it is particularly suitable for light guiding applications.

Edge lighting this film results in an almost loss-free and color-neutral light guiding even over long distances, resulting in high light yield compared to other plastics. Light extraction structures required for front- and backlit applications can be produced by all common used methods, such as hot embossing, printing, and laser engraving.

One particular method is embossing of micro and nanostructures in a UV-curable coating. This allows for production of structures almost invisible to naked eye, such as UV-curable lacquer used commonly in front lighting of e-readers.

PLEXIGLAS® Film OF058 is supplied as rolls in standard thicknesses of 200 μm, 375 μm, and 500 μm and can be efficiently processed in a roll-to-roll process.

Thanks to Röhm’s advanced film cutting and winding capabilities, it is possible to produce rolls for processing in clean rooms.
PLEXIGLAS® for tamper-evident labels

Brand protection gains more importance in many applications because counterfeit products negatively impact sales figures, brand perception and product value. Due to their brittleness, labels based on easily torn, destructible PLEXIGLAS® films are irreparably destroyed by any attempt to remove them.

The degree of brittleness can be adjusted almost without restrictions, both in transparent, clear and in white, high-reflective film variants. This allows for serving the entire range of applications in the security sector.

In addition, PLEXIGLAS® films consist of acrylic polymers and therefore, they are odorless and free of halogens and plasticizers.

PLEXIGLAS® an EUROPLEX® Films for Microfluidic Applications

With our wide range of PLEXIGLAS® and EUROPLEX® COC Films, we are offering the solution for your microfluidic device. Our products provide excellent light transmission and brilliance due to low intrinsic absorption. EUROPLEX® COC Films exhibit outstanding chemical resistance against a variety of solvents, e.g. acetone, ethanol, isopropanol, ethyl acetate, as well as very good acid and base resistance. Röhm offers a full range of services from film extrusion to converting of the films to your required dimensions, all in-house.

The films can be bonded via thermal or solvent bonding and laser or ultra sonic welding. To meet the special temperature requirement for polymerase chain reaction (PCR) applications, our EUROPLEX® COC Film OF305 with a Tg (glass transition temperature = Tg) of 142°C is recommended.
PLEXIGLAS® and EUROPLEX® HC films combine precision in optics and design.

Our PLEXIGLAS® films and the PMMA-based reverse side of EUROPLEX® HC films are easily printed by screen, digital and flexographic processes. Images of the highest resolution can be realized on these high-quality surfaces. In addition to PLEXIGLAS® films with smooth and glossy surfaces, others with matt surface structures, such as PLEXIGLAS® Film 0F032, are also available.

PLEXIGLAS® Film 99524 and PLEXIGLAS® Film OF03 are calendared films, well suited for film insert molding. With PLEXIGLAS® Film 99524 in particular, high-gloss surfaces with a brilliant depth of image effect can be obtained.

The excellent compatibility of PMMA allows these films to be combined with other plastics by lamination. In addition, PLEXIGLAS® and EUROPLEX® HC films can be easily formed into many different shapes using high-pressure forming or deep drawing processes. The smooth surface of PLEXIGLAS® films is suitable for scratch-resistant coatings and conforms to the highest visual requirements. PLEXIGLAS® films for graphic applications, as well as pure PMMA films, can be processed using common dies or cut with a CO₂ laser to produce extremely precise cuts and stamped edges of high visual quality.
PLEXIGLAS® films for retro-reflective laminates contribute to security.

The excellent weathering resistance of PLEXIGLAS® films ensures that color changes or yellowing do not occur, even after many years of outdoor use.

Used as an overlay in retro-reflective laminates, PLEXIGLAS® Film OF072 protects less weathering-resistant underlying substrates. The base film material can be easily colored allowing precise conformity with legally prescribed color coordinates.

The colorants are special selections for high light- and weather-fastness.

The available colors are transparent blue, yellow, green, red, orange, and brown. For lettering applications, films in black color are available as well.
United Nations Sustainable Development Goals: How PLEXIGLAS® supports sustainable action

The United Nations’ 2030 Agenda for Sustainable Development aims to shape global economic progress in a socially just manner and within the Earth’s environmental limits. At the heart of this agenda are 17 Sustainable Development Goals (SDG). These goals are to be achieved by 2030 through the joint efforts of states, companies and civil society. We at Röhm GmbH are also contributing toward this necessary change – through both our PLEXIGLAS® products and our company’s sustainability strategy.

Find out which SDGs are particularly relevant for us and how PLEXIGLAS® supports sustainable action at www.plexiglas.de/eco.