



PLEXIGLAS®
for Electronics & Communication

PLEXIGLAS® 



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Brilliant picture, brilliant technology

Everyone wants a perfect picture on their TV screen, mobile phone display and laptop. All over the world, equipment manufacturers are working to make their customers' dreams come true. In a rapidly growing market, the perfect picture is a recipe for success.

To obtain the best optical quality, it takes the right material. The solution is PLEXIGLAS®. Using PLEXIGLAS®, manufacturers and designers can already realize ideas that will revolutionize our everyday lives. Take cars, for example. How about projecting vehicle data onto the windscreen? Innovative head-up displays will open up promising fields of application. PLEXIGLAS® is the ideal material for everyone who wants to help shape the future of electronics and communications.

The Acrylic Polymers Business Line of Evonik Industries is one of the world's leading suppliers of PMMA and acrylic products, which were invented in 1933 by Dr. Otto Röhm and his team. The products we market under the PLEXIGLAS® trademark (and as ACRYLITE® in the Americas) are available everywhere, as is our expertise: either directly via our global sales network, via regional distributors or qualified fabricators. We also enter into development partnerships with our customers, and help them to design innovative solutions for tomorrow's world.

Join us in creating top quality images, at home and on the move.



A specialized material that is reliable and durable

PLEXIGLAS® is one of the world's highest-quality and most versatile plastics. It can be provided with many different functional properties and surfaces. Are you looking for a material that is highly light-transmitting, light-diffusing or light-focusing? One that is sight-screening, heat-reflective or heat-shielding? Or do you need one that offers heat insulation, sound reduction or scratch resistance? Take your pick.

Lighter in weight than glass and with 11 times its impact strength, PLEXIGLAS® offers a very hard surface for a plastic material. It can take rough treatment, is easy to machine and therefore cost-efficient. PLEXIGLAS® is easy to fabricate by means of all thermoplastic processes and offers extremely accurate mold surface reproduction of even the most minute structures.

PLEXIGLAS® remains as clear as on day one, even after years of service. The material neither yellows nor becomes brittle. Our clear-transparent PLEXIGLAS® sheets and films come with a 30-year non-yellowing guarantee. Because PLEXIGLAS® remains virtually unchanged, it does not have to



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be replaced at some time, unlike other plastics. What's more, PLEXIGLAS® can be completely recycled by chemical conversion to its starting materials or by direct reuse. These aspects, together with environmentally sound production, contribute to the material's sustainability.

To prove this sustainability, we have performed an extensive life cycle assessment of the material from cradle to grave.

From production to recycling, the different environmental impacts of PLEXIGLAS®, including its greenhouse gas-reducing effect due to its longevity, were determined and confirmed in a life cycle assessment in accordance with DIN ISO 14040ff.

PLEXIGLAS® is also a good choice in terms of safety. It burns with almost no smoke, does not release any acutely toxic smoke gases and is easy to extinguish with water.

PLEXIGLAS® exists in many forms, as solid sheet, films, multi-skinned and corrugated sheets, blocks, tubes, rods and molding compounds. Ultra high purity sheets, specialty molding compounds and a special coating system are available for use in electronics and communications.

PLEXIGLAS® offers the highest possible light transmission, true color rendition and a positive eco-balance. It renders top-quality messages and images on televisions, tablet PCs and mobile phones.



PLEXIGLAS® a good choice

PLEXIGLAS®
PLEXIGLAS® Optical
PLEXIGLAS® Resist
PLEXIGLAS® Film
CoverForm®

There are a number of obvious features that make mobile phones and the like top sellers that are suitable for everyday use. Obviously, the displays must be scratch-resistant, withstand being dropped without cracking — and every detail of photos and apps must be clearly visible.

In PLEXIGLAS®, manufacturers have a material that meets all these requirements. It offers the best possible protection for the display. It withstands everyday wear and tear and keeps its good looks. The surface is insensitive to scratching. And if the phone gets dropped, breakage is unlikely. Because this highly transparent material absorbs and diffuses hardly any light, the display shows images and data in sharp contrast, much to the user's delight. Light guide plates made of PLEXIGLAS® offer even illumination of displays, which enhances the good optical impression. Specialty films make it possible to light up the display even better and help to use energy more efficiently. In a highly cost-sensitive environment, manufacturing costs play an important role. Being easy to fabricate, the material helps reduce costs. It is suitable for CNC routing, laser and die-cutting.

The CoverForm® system solution also cuts out time-consuming process steps by producing parts with a scratch-resistant coating during the injection molding process. The resulting components have surfaces that are extremely resistant to scratches and chemicals, without any further treatment. While meeting the most stringent requirements, they are produced at much lower cost than by standard processes.



PLEXIGLAS® always in the picture

PLEXIGLAS®

PLEXIGLAS® Hi-Gloss

PLEXIGLAS® Optical HC

Having advanced from square boxes to shapely design elements, modern televisions have to meet a growing number of requirements. Appliances are meant to be as flat as possible, have the biggest possible screen and the most brilliant picture. And if the TV set is energy-efficient as well, all the better. As the light guide in the backlight unit, PLEXIGLAS® conjures up images of fascinating precision on flat-panel monitors. It also cuts energy consumption by as much as 30 percent because it enables the use of efficient LEDs.

Since the optical molding compound grades are extremely pure, the LED light that is fed in at the sides is ideally distributed across the entire screen and provides uniform illumination. The optical purity of the material means that there are virtually no losses due to light absorption or diffusion. The scenes displayed on the screen make viewers feel they are part of the action, and give them a first-hand experience of exciting sports events and adventurous journeys, without any disturbing reflections. This is possible thanks to light guide plates that are only a few millimeters thick. They support the use of energy-saving LEDs and help make televisions even slimmer and more elegant.

We want to watch movies, play games and communicate with other people online. All the time and anywhere. In our mobile world, laptops, tablet PCs and computers are indispensable companions.

PLEXIGLAS® brings vivid colors to the screen in all their glory. Since there are no light losses and no irregular diffusion, the images are of impeccable quality. That is in the interest of users and kind to the eyes.

More light, please? No problem. Evonik supplies micro-structured PLEXIGLAS® films that make displays brighter, at the same energy consumption.

Brilliant screens, a decorative appearance and a pleasant feel — these are key criteria when buying electronic equipment. PLEXIGLAS® offers manufacturers many creative options for making consumer wishes come true and encouraging new purchases. The material is a source of inspiration for designers, who create attractive and stylish decor items with a great depth of color — colored and high-gloss TV frames or deep black pedestals, for instance. The hard-wearing material makes sure they look like new even after years of service.

Tablet PCs and smart phones need to have surfaces that people want to touch — after all, they communicate with them all the time. As developments advance still further, slightly roughened PLEXIGLAS® surfaces will not only feel good, but will also prevent unsightly stains. Irritating reflections are already a thing of the past, thanks to the clear coating on the plastic surface.



PLEXIGLAS® offers a clear view

Pictures that are thrilling to look at even in daylight? Rear projection screens made of PLEXIGLAS® offer high quality with excellent contrast. The systems can be used flexibly because they work even in interiors with little shading. This plastic material also offers brilliant projections in television studios and control rooms. The added bonus is that it is 3D and multitouch-enabled.

Functional optical films made of PLEXIGLAS® facilitate innovations. Drivers can see the speedometer display straight in front of them on the windscreen, without taking their eyes off the road. They can check their fuel level on the head-up display, which is clearly visible.



PLEXIGLAS® Resist
CoverForm®
PLEXIGLAS® Optical
PLEXIGLAS® Film

PLEXIGLAS® for control panels

Innovations are also gaining ground in the household. Electronics is taking over a number of functions and makes washing machines and dishwashers into high-tech helpers that are controlled by sensitive computers. Clear-transparent PLEXIGLAS® with its scratch resistance and impact strength offers the best possible protection for control panels and displays that are designed for permanent service. The material's high transparency and perfectly smooth, low-maintenance surface make the nameplate look both hygienic and decorative.

PLEXIGLAS® is the perfect showcase for electrical equipment and communication systems.

		Sheet				Film
		PLEXIGLAS® Optical (HC)	PLEXIGLAS® Optical (RP)	PLEXIGLAS® Optical (Superclear)	PLEXIGLAS® in OQ Quality	PLEXIGLAS® Resist
Mobile phone	Cover lens display	•		•		•
	Lightguide for BLU					•
	Mobile phone housing					
Laptop, Tablet PC	Lightguide for BLU	•				
	Touchscreen	•				
TV / PC-Monitor	Lightguide for BLU				•	
	Housing					
White goods	Front cover	•		•		•
Rear projection	Multi-touch, 3D-cinema		•			
Touchscreen	Smartphone, Tablet-PCs	•				
Housing	Electronic devices					

Products, properties and applications

Molding Compounds

PLEXIGLAS® Resist, microstructured	PLEXIGLAS® Hi-Gloss (PFE)	PLEXIGLAS® Basic	PLEXIGLAS® Resist	PLEXIGLAS® Optical (POQ 62)	PLEXIGLAS® Optical (POQ 64)	PLEXIGLAS® Optical (POQ 66)	CoverForm®
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® = 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.

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based on our present knowledge and experience.
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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
does it imply that similar products could not be used.



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