

# Cast PLEXIGLAS® Resist for automotive glazing

## Product Description

### Product and Application

Cast PLEXIGLAS® Resist is a highly weather-resistant sheet material made of **impact-modified acrylic** (polymethyl methacrylate, PMMA).

Compared with conventional acrylic, the sheets offer **greater impact strength** during

- shipping and handling,
- the entire fabrication process,
- installation, and
- subsequent use.

PLEXIGLAS® Resist combines the positive product properties of PMMA with the toughness of other plastics like polycarbonate (PC).

Cast PLEXIGLAS® Resist is highly weather-resistant and durable, and unlike other plastics (e.g., PC, PET, PETG), requires **no additional UV protection**.

Cast PLEXIGLAS® Resist is therefore a versatile, absolutely reliable material for

- vehicle glazing, for example, windshields for motorcycles and scooters, interior glazing in buses, and trains and
- automotive glazing.

Cast PLEXIGLAS® Resist is available in **Clear and in many PLEXIGLAS® colors**, subject to certain minimum order quantities

### Chemical resistance

The chemical resistance of cast PLEXIGLAS® Resist roughly corresponds to that of cast PLEXIGLAS®. It shows **higher resistance than extruded acrylic**. We would be pleased to answer specific inquiries about its compatibility with particular substances.

### Machining

Owing to its tough behavior, cast PLEXIGLAS® Resist can be sawn, drilled, milled, sanded, polished, and laser-cut with excellent results, given the right conditions.

### Forming

The forming conditions are the same as for cast PLEXIGLAS®.

This particularly concerns the **optical surface quality** after forming.

**Cast PLEXIGLAS® Resist offers broad forming scope.**

The forming temperature should be between 160 °C and 175 °C, the range in which the material is thermoelastic. Predrying is not necessary.

**During heating, the material turns whitish, but this coloration disappears again upon cooling.**

### Screen printing

In general, the same inks are to be used as for cast PLEXIGLAS®, but we recommend conducting preliminary tests in every case.

### Coating

Surfaces can be coated by conventional means, for example, with polysiloxane systems.

### Cleaning and care

PLEXIGLAS® is easy to clean. Do not rub dry. Dusty surfaces can be wiped with warm water to which a little dishwashing liquid has been added and by using a soft cloth or sponge.

### Physical forms

Sheets of cast PLEXIGLAS® Resist with flat, brilliant, high-gloss surfaces and PE masking film on both sides are supplied for automotive glazing

- in size **3,050 mm x 2,030 mm**, and
- in thicknesses of **3, 4, 5 and 6 mm**.

We would be pleased to tell you about colors, sizes/cut-to-size sections, greater thicknesses, and other terms and conditions on request.

### Recycling

From production to recycling, the environmental impact of PLEXIGLAS® has been examined and positively rated in accordance with DIN ISO 14040ff.

Besides its durability, PLEXIGLAS® also offers convincing recyclability. It can be completely recycled, both by chemical conversion to its starting materials and by direct reuse.

### Approvals

Approval according to the ECE R43 regulation is normally required for use in automotive glazing. This is available for the use of glazing systems based on cast PLEXIGLAS® Resist for rear side windows, roofs and rear windows. Further details are available on request.



The sheet is completely protected against UV radiation by the „Naturally UV-Stable Technology.“

## Properties (typical physical properties at 23 °C/50% RH)

Properties	Cast PLEXIGLAS® Resist Clear OF01/OR01	Unit of measurement	Test standard
Density	1.19	g/cm <sup>3</sup>	ISO 1183
Impact strength (Charpy)	40	kJ/m <sup>2</sup>	ISO 179/1 fu
Notched impact strength (Charpy)	3.2	kJ/m <sup>2</sup>	ISO 179/1 eA
Tensile strength	70	MPa	ISO 527-2/1B/5
Nominal elongation at break	9	%	ISO 527-2/1B/50
Module of elasticity (short-term value)	3,000	MPa	ISO 527-2/1B/1
Flexural strength	105	MPa	ISO 178
Coefficient of linear thermal expansion (0 to 50°C)	7·10 <sup>-5</sup> (-0.07)	1/K (mm/m°C)	DIN 53752-A
Vicat softening temperature	113	°C	ISO 306, method B50
Light transmittance (380–780 nm)	92	%	DIN 5036, Part 3
UV transmission	no	–	–

\* = 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® trademark on the European, Asian, African and Australian continents and under the ACRYLITE® trademark in the Americas.

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