

**PLEXIGLAS® Resist zk5HC**

PMMA-I

Evonik Industries AG

**Product Texts**
**Productprofil:**

PLEXIGLAS® Resist zk5HC is an amorphous, impact-modified thermoplastic molding compound (PMMA-I).

Typical properties of impact-modified PLEXIGLAS® molding compounds are

- high weather resistance
- excellent transmission and clarity
- brilliant appearance
- the pleasant feel and sound of the moldings.

PLEXIGLAS® Resist zk5HC is characterized by the following special properties:

- high break resistance and impact strength
- best resistance to stress cracking of all impact-modified PLEXIGLAS® molding compounds.

**Application:**

Used for extruding and coextruding sheets and profiles.

**Example:**

extruded/coextruded sheets and profiles for automotive bodies and the sanitaryware sector (bathtubs and shower trays) or crystal-clear luminaire covers for industrial plants that come into contact with aggressive media.

**Processing:**

PLEXIGLAS® Resist zk5HC molding compound can be processed on machines with 3-zone general purpose screws for engineering thermoplastics.

**Physical Form / Packaging:**

PLEXIGLAS® Resist zk5HC molding compounds are supplied as pellets of uniform size in 25kg polyethylene bags or in 500kg boxes with PE lining; other packaging on request.

Rheological properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Melt volume-flow rate, MVR	0.7	cm <sup>3</sup> /10min	ISO 1133
Temperature	230	°C	ISO 1133
Load	3.8	kg	ISO 1133
<b>Mechanical properties</b>			
<b>ISO Data</b>			
Tensile Modulus	2500	MPa	ISO 527-1/-2
Yield stress	63	MPa	ISO 527-1/-2
Yield strain	5	%	ISO 527-1/-2
Nominal strain at break	28	%	ISO 527-1/-2
Charpy impact strength (+23°C)	55	kJ/m <sup>2</sup>	ISO 179/1eU
<b>Thermal properties</b>			
<b>ISO Data</b>			
Glass transition temperature, 10°C/min	108	°C	ISO 11357-1/-2
Vicat softening temperature, 50°C/h 50N	100	°C	ISO 306
Coeff. of linear therm. expansion, parallel	90	E-6/K	ISO 11359-1/-2
Burning behav. at 1.5 mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	1.6	mm	IEC 60695-11-10
UL recognition	UL	-	-

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Oxygen index	17.5	%	ISO 4589-1/-2
<b>Electrical properties</b>			
<b>ISO Data</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Relative permittivity, 100Hz	3.7	-	IEC 60250
Relative permittivity, 1MHz	2.9	-	IEC 60250
Dissipation factor, 100Hz	500	E-4	IEC 60250
Dissipation factor, 1MHz	300	E-4	IEC 60250
Volume resistivity	>1E13	Ohm*m	IEC 60093
Surface resistivity	1E13	Ohm	IEC 60093
<b>Other properties</b>			
<b>ISO Data</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Water absorption	1.9	%	Sim. to ISO 62
Humidity absorption	0.5	%	Sim. to ISO 62
Density	1170	kg/m <sup>3</sup>	ISO 1183
<b>Material specific properties</b>			
<b>ISO Data</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Luminous transmittance	92	%	ISO 13468-1, -2
<b>Rheological calculation properties</b>			
<b>ISO Data</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Density of melt	1040	kg/m <sup>3</sup>	-
Thermal conductivity of melt	0.19	W/(m K)	-
Spec. heat capacity of melt	2440	J/(kg K)	-
Eff. thermal diffusivity	7.49E-8	m <sup>2</sup> /s	-
Ejection temperature	85	°C	-
<b>Test specimen production</b>			
<b>ISO Data</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Injection Molding, melt temperature	250	°C	ISO 294
Injection Molding, mold temperature	60	°C	ISO 10724
Injection Molding, injection velocity	195	mm/s	ISO 294

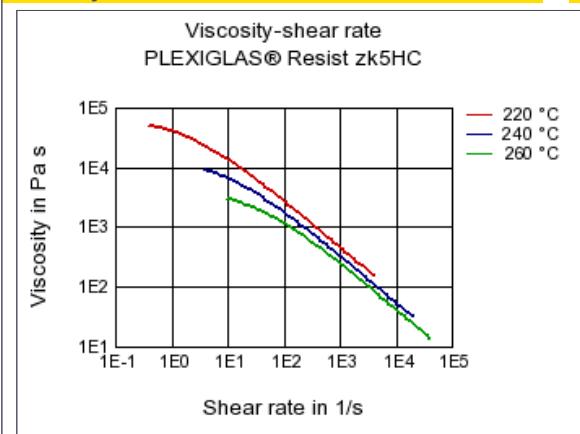
# PLEXIGLAS® Resist zk5HC

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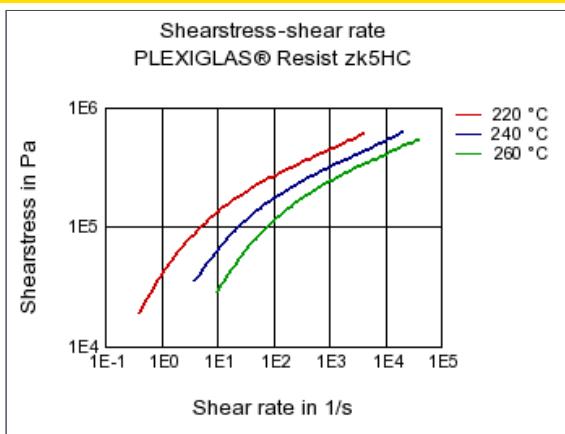
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## Diagrams

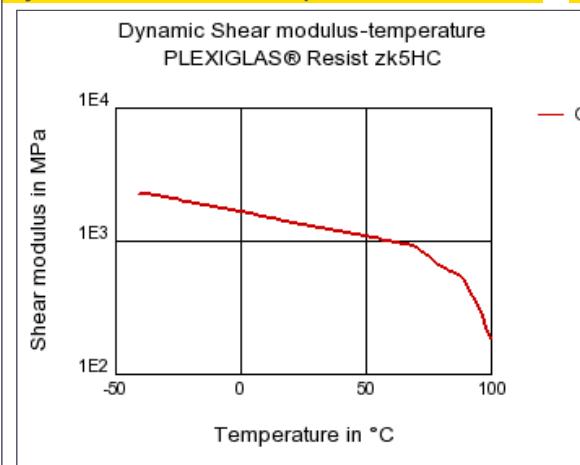
### Viscosity-shear rate



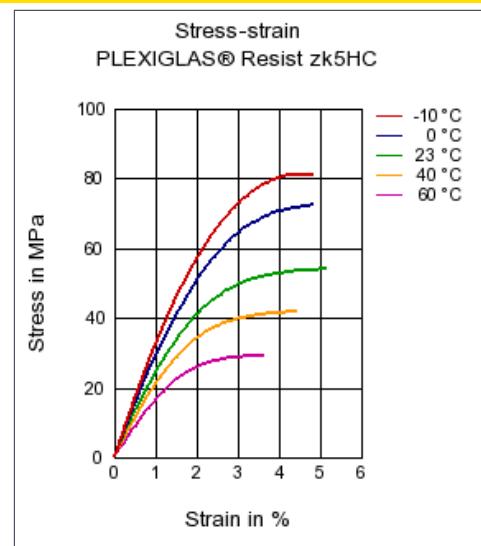
### Shearstress-shear rate



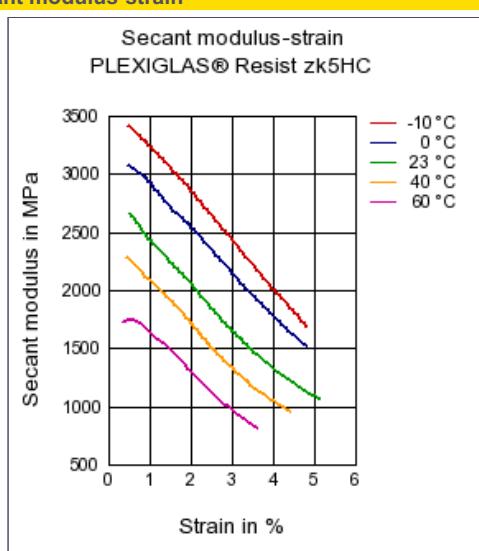
### Dynamic Shear modulus-temperature



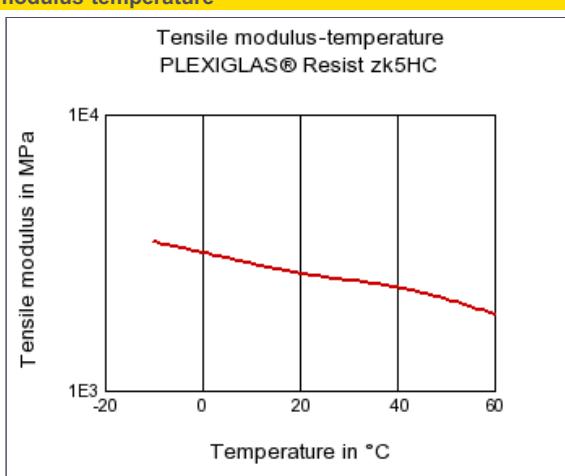
### Stress-strain



### Secant modulus-strain



### Tensile modulus-temperature



### Characteristics

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## PLEXIGLAS® Resist zk5HC

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### Processing

Film Extrusion, Profile Extrusion, Sheet Extrusion, Other Extrusion

### Additives

Release agent

### Delivery form

Pellets

### Special Characteristics

High impact or impact modified, Light stabilized or stable to light, U.V. stabilized or stable to weather, Transparent

### Other text information

#### Profile extrusion

##### PREPROCESSING

Predrying temperature: max. 90 °C

Predrying time in a desiccant-type drier: 2 - 3 h

##### PROCESSING

Melt temperature: 220 - 260 °C

Die temperature: 220 - 260 °C

#### Sheet extrusion

##### PREPROCESSING

Predrying temperature: max. 90 °C

Predrying time in a desiccant-type drier: 2 - 3 h

##### PROCESSING

Melt temperature: 220 - 260 °C

Die temperature: 220 - 260 °C

### Chemical Media Resistance

#### Acids

-  Acetic Acid (5% by mass) (23°C)
-  Citric Acid solution (10% by mass) (23°C)
-  Lactic Acid (10% by mass) (23°C)
-  Hydrochloric Acid (36% by mass) (23°C)
-  Sulfuric Acid (38% by mass) (23°C)
-  Sulfuric Acid (5% by mass) (23°C)

#### Bases

-  Sodium Hydroxide solution (35% by mass) (23°C)
-  Sodium Hydroxide solution (1% by mass) (23°C)
-  Ammonium Hydroxide solution (10% by mass) (23°C)

#### Hydrocarbons

-  n-Hexane (23°C)
-  iso-Octane (23°C)

#### Mineral oils

-  SAE 10W40 multigrade motor oil (23°C)

#### Standard Fuels

-  Standard fuel without alcohol (pref. ISO 1817 Liquid C) (23°C)
-  Standard fuel with alcohol (pref. ISO 1817 Liquid 4) (23°C)

#### Salt solutions

-  Sodium Carbonate solution (20% by mass) (23°C)
-  Sodium Carbonate solution (2% by mass) (23°C)

#### Other

-  50% Oleic acid + 50% Olive Oil (23°C)
-  Water (23°C)