

**PLEXIGLAS® Resist zk4HC**

PMMA-I

Evonik Industries AG

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

PLEXIGLAS® Resist zk4HC 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 zk4HC is characterized by the following special properties:

- improved break resistance and impact strength
- best resistance to stress cracking of all impact-modified PLEXIGLAS molding compounds
- AMECA listing.

**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 luminare covers for industrial plants that come into contact with aggressive media.

**Processing:**

PLEXIGLAS® Resist zk4HC can be processed on machines with 3-zone general purpose screws for engineering thermoplastics.

**Physical Form / Packaging:**

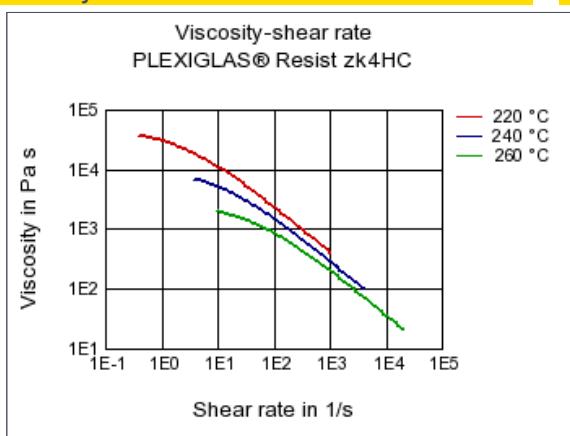
PLEXIGLAS® Resist zk molding compounds are supplied as pellets of uniform size in 25kg polyethylene bags or in 500kg boxes with PE lining; other packaging on request.

Rheological properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Melt volume-flow rate, MVR	1.1	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	2900	MPa	ISO 527-1/-2
Yield stress	68	MPa	ISO 527-1/-2
Yield strain	4.5	%	ISO 527-1/-2
Nominal strain at break	17	%	ISO 527-1/-2
Charpy impact strength (+23°C)	25	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	102	°C	ISO 306
Coeff. of linear therm. expansion, parallel	80	E-6/K	ISO 11359-1/-2
Burning behav. at 1.5 mm nom. thickn.	HB	class	IEC 60695-11-10

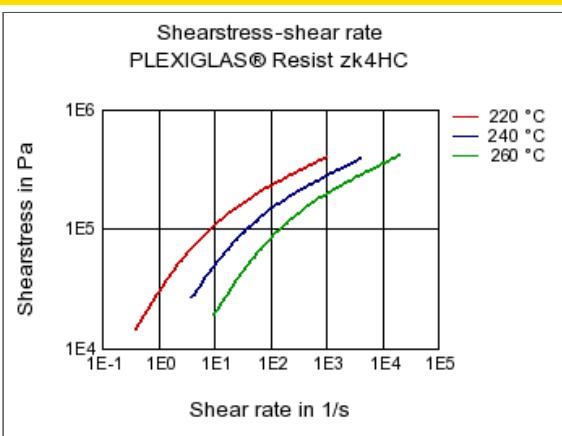
<b>PLEXIGLAS® Resist zk4HC</b>			
PMMA-I			
Evonik Industries AG			
Thickness tested	1.6	mm	IEC 60695-11-10
UL recognition	UL	-	-
Oxygen index	17.5	%	ISO 4589-1/-2
Electrical properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Relative permittivity, 100Hz	3.7	-	IEC 60250
Relative permittivity, 1MHz	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
Other properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Water absorption	2	%	Sim. to ISO 62
Humidity absorption	0.6	%	Sim. to ISO 62
Density	1180	kg/m <sup>3</sup>	ISO 1183
Material specific properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Luminous transmittance	92	%	ISO 13468-1, -2
Rheological calculation properties	Value	Unit	Test Standard
<b>ISO Data</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	-
Test specimen production	Value	Unit	Test Standard
<b>ISO Data</b>			
Injection Molding, melt temperature	250	°C	ISO 294
Injection Molding, mold temperature	62	°C	ISO 10724
Injection Molding, injection velocity	195	mm/s	ISO 294

## Diagrams

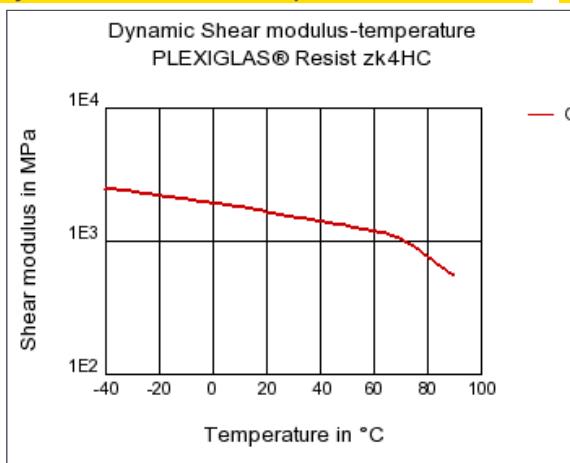
## Viscosity-shear rate



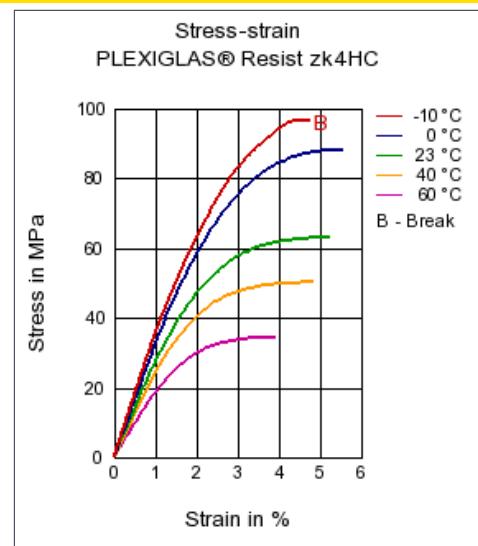
## Shearstress-shear rate



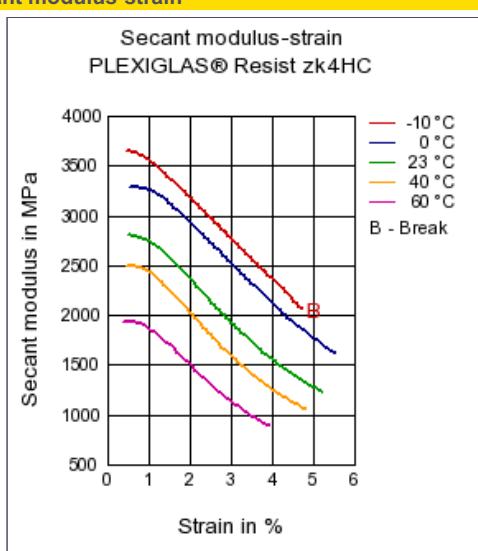
## Dynamic Shear modulus-temperature



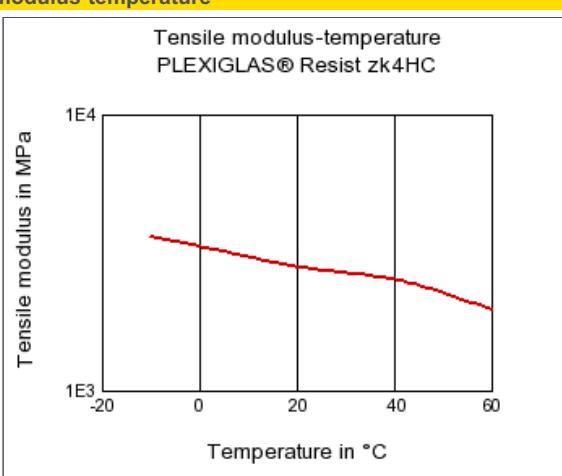
## Stress-strain



## Secant modulus-strain



## Tensile modulus-temperature



## Characteristics

<b>PLEXIGLAS® Resist zk4HC</b>	
PMMA-I	Evonik Industries AG
<b>Processing</b>	<b>Additives</b>
Film Extrusion, Profile Extrusion, Sheet Extrusion, Other Extrusion	Release agent
<b>Delivery form</b>	<b>Special Characteristics</b>
Pellets	High impact or impact modified, Light stabilized or stable to light, U.V. stabilized or stable to weather, Transparent
<b>Other text information</b>	
<b>Profile extrusion</b>	
PREPROCESSING	
Predrying temperature: max. 95 °C	
Predrying time in a desiccant-type drier: 2 - 3 h	
PROCESSING	
Melt temperature: 220 - 260 °C	
Die temperature: 220 - 260 °C	
<b>Sheet extrusion</b>	
PREPROCESSING	
Predrying temperature: max. 95 °C	
Predrying time in a desiccant-type drier: 2 - 3 h	
PROCESSING	
Melt temperature: 220 - 260 °C	
Die temperature: 220 - 260 °C	
<b>Chemical Media Resistance</b>	
<b>Acids</b>	
( 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)	
<b>Bases</b>	
( Sodium Hydroxide solution (35% by mass) (23°C)	
( Sodium Hydroxide solution (1% by mass) (23°C)	
( Ammonium Hydroxide solution (10% by mass) (23°C)	
<b>Hydrocarbons</b>	
( n-Hexane (23°C)	
( iso-Octane (23°C)	
<b>Mineral oils</b>	
( SAE 10W40 multigrade motor oil (23°C)	
<b>Standard Fuels</b>	
( Standard fuel without alcohol (pref. ISO 1817 Liquid C) (23°C)	
( Standard fuel with alcohol (pref. ISO 1817 Liquid 4) (23°C)	
<b>Salt solutions</b>	
( Sodium Carbonate solution (20% by mass) (23°C)	
( Sodium Carbonate solution (2% by mass) (23°C)	
<b>Other</b>	
( 50% Oleic acid + 50% Olive Oil (23°C)	
( Water (23°C)	