

PLEXIGLAS® Resist zk40

Röhm GmbH
PMMA-I

Processing

Injection molding, Film extrusion, Profile extrusion, Sheet extrusion, Other extrusion, Thermoforming

Delivery Form

Pellets

Additives

Release agent

Special Characteristics

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

Features

Amorphous

Chemical Resistance

Environmental stress crack resistance

Product Text

Product Information

Productprofil:

PLEXIGLAS® Resist zk40 is an amorphous, impact-modified thermoplastic molding compound (PMMA-I).

Typical properties of impact-modified PLEXIGLAS® molding compounds are

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

PLEXIGLAS® Resist zk40 is characterized by the following special properties:

- very good break resistance and impact strength
- improved resistance to stress cracking
- AMECA listing.

Application:

Used for injection molding. Profile extrusion or coextrusion are also possible.

Example:

lighting fixtures, writing and drawing utensils, domestic appliances and sanitaryware

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PLEXIGLAS® Resist zk40 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, packaged in 25kg polyethylene bags or 500kg boxes with PE lining; other packaging on request.

Processing/Physical Characteristics	Value	Unit	Standard
Melt volume-flow rate, MVR	0.7	cm ³ /10min	ISO 1133
Temperature	230	°C	
Load	3.8	kg	
Density of melt	1040	kg/m ³	
Thermal conductivity of melt	0.19	W/(m K)	
Spec. heat capacity of melt	2438	J/(kg K)	
Eff. thermal diffusivity	7.494E-8	m ² /s	
Ejection temperature	75	°C	

Mechanical Properties	Value	Unit	Standard
Tensile modulus	1600	MPa	ISO 527
Yield stress	42	MPa	ISO 527
Yield strain	4.5	%	ISO 527
Nominal strain at break	30	%	ISO 527
Poisson's ratio	0.35		ISO 527
Tensile creep modulus, 1h	1400	MPa	ISO 899-1
Tensile creep modulus, 1000h	1000	MPa	ISO 899-1
Charpy impact strength, +23°C	80	kJ/m ²	ISO 179/1eU

Thermal Properties	Value	Unit	Standard
Glass transition temperature, 10°C/min	115	°C	ISO 11357-1/-2
Temp. of deflection under load, 1.80 MPa	85	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	92	°C	ISO 75-1/-2
Vicat softening temperature, B	94	°C	ISO 306
Coeff. of linear therm. expansion, parallel	120	E-6/K	ISO 11359-1/-2
Burning behav. at 1.5 mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	1.57	mm	
Oxygen index	17.5	%	ISO 4589-1/-2

Electrical Properties	Value	Unit	Standard
Relative permittivity, 100Hz	3.8		IEC 62631-2-1

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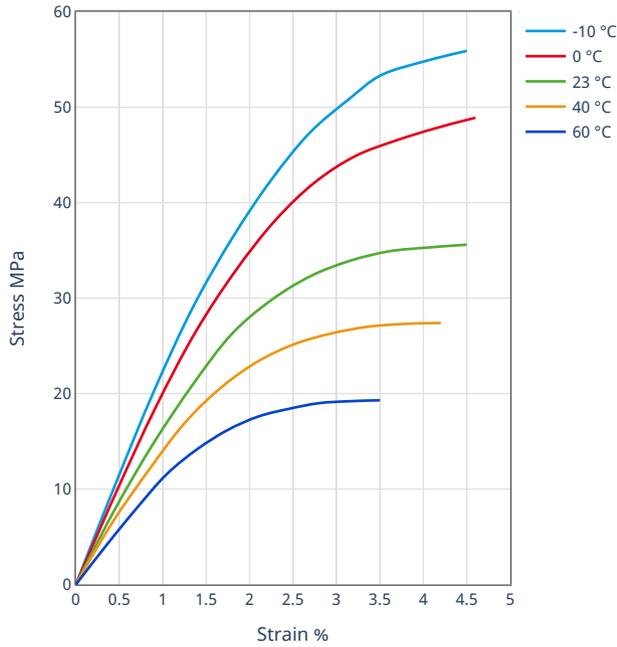
Electrical Properties	Value	Unit	Standard
Relative permittivity, 1MHz	2.9		IEC 62631-2-1
Dissipation factor, 100Hz	400	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	300	E-4	IEC 62631-2-1
Volume resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface resistivity	1E13	Ohm	IEC 62631-3-2
Comparative tracking index	600		IEC 60112
Optical Properties	Value	Unit	Standard
Luminous transmittance	90	%	ISO 13468-1, -2
Other Properties	Value	Unit	Standard
Water absorption	1.5	%	Sim. to ISO 62
Humidity absorption	0.5	%	Sim. to ISO 62
Density	1130	kg/m ³	ISO 1183
Test Specimen Production	Value	Unit	Standard
Injection molding, melt temperature	260	°C	ISO 294
Injection molding, mold temperature	50	°C	ISO 294
Injection molding, injection velocity	195	mm/s	ISO 294

Diagrams

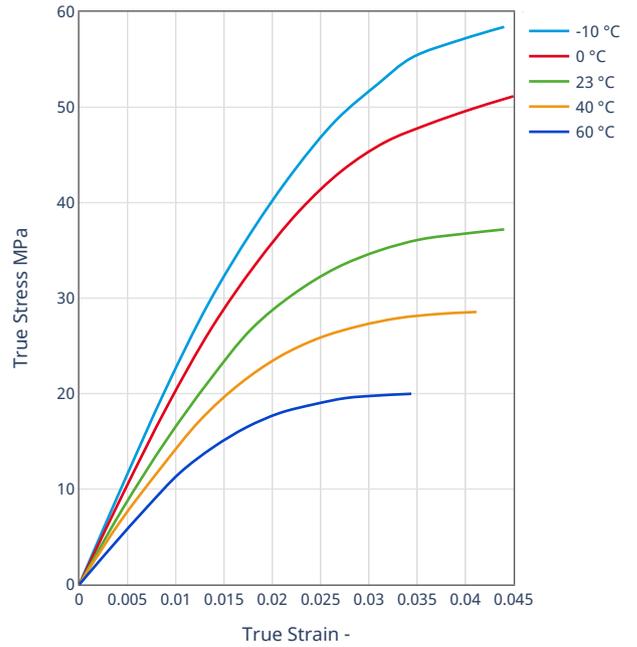
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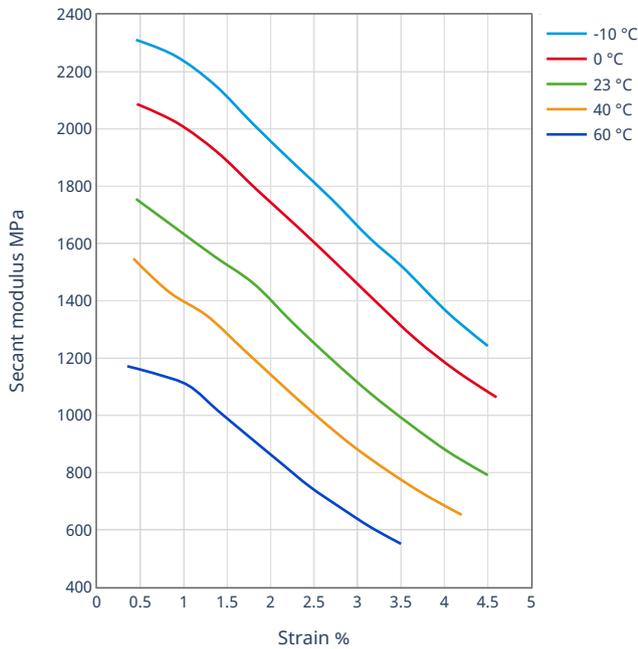
Stress-strain



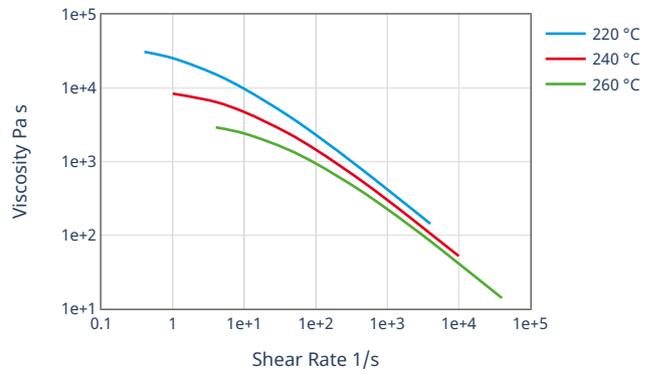
True stress-true strain



Secant modulus-strain



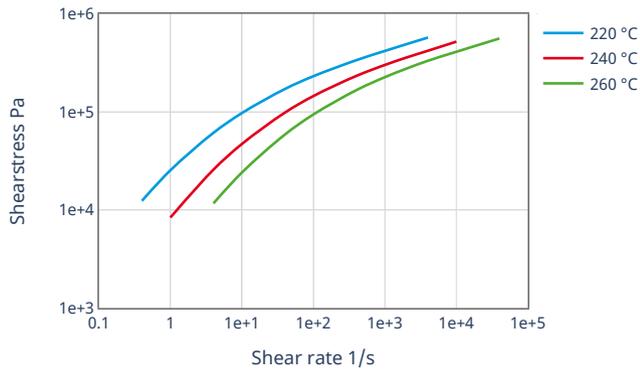
Viscosity-shear rate



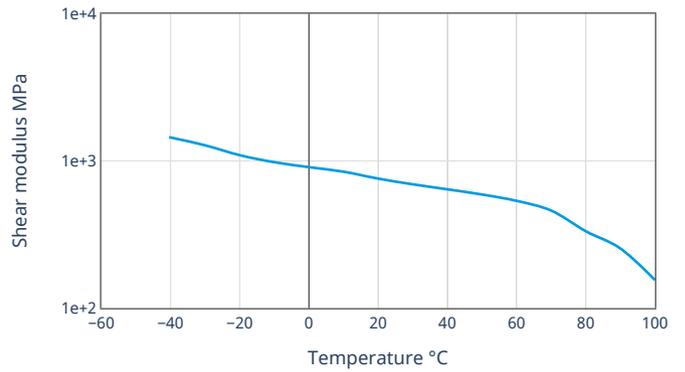
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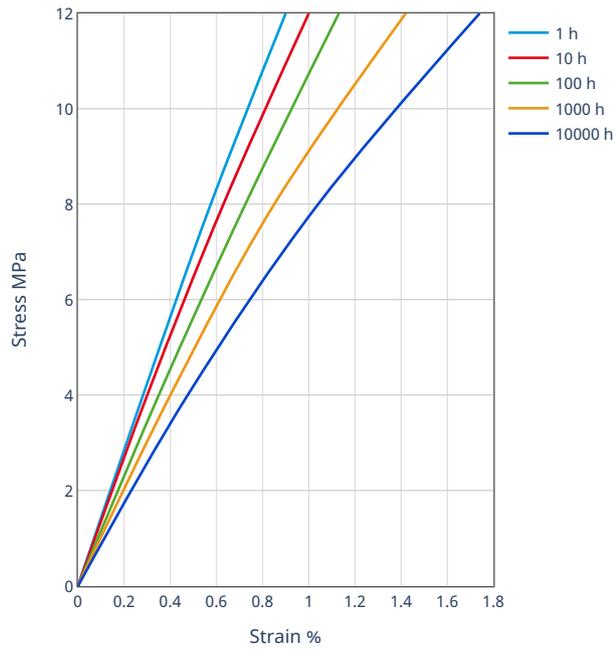
Shearstress-shear rate



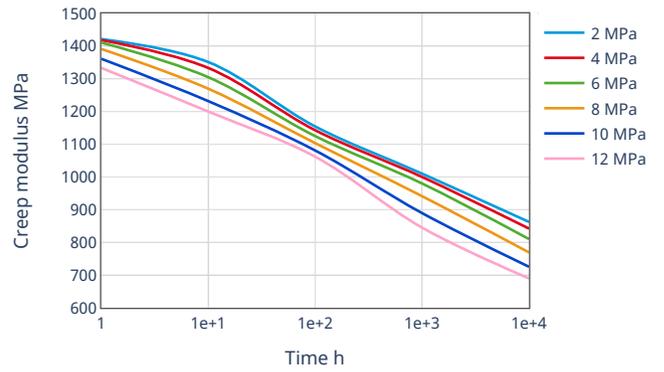
Dynamic shear modulus-temperature



Stress-strain (isochronous) 23°C



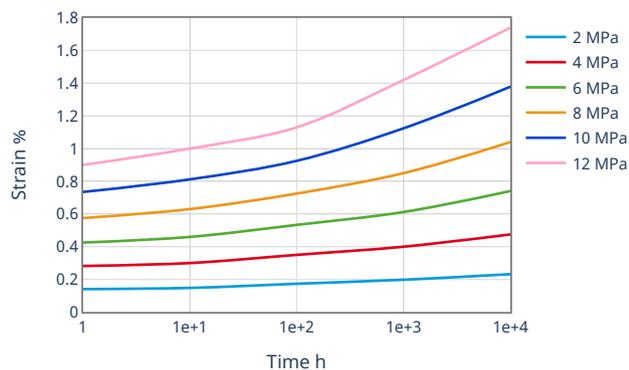
Creep modulus-time 23°C



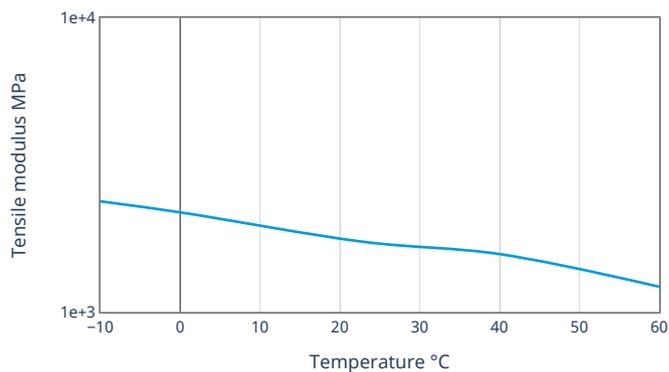
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Creep curve 23°C



Tensile modulus-temperature



Processing Information

Injection molding

PREPROCESSING

Predrying temperature: max. 85 °C

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

PROCESSING

Melt temperature: 230 - 240°C

Mold temperature: 50 - 70°C

Profile extrusion

PREPROCESSING

Predrying temperature: max. 85 °C

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

PROCESSING

Melt temperature: 230 - 240 °C

Die temperature: 230 - 240 °C

Sheet extrusion

PREPROCESSING

Predrying temperature: max. 85 °C

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

PROCESSING

Melt temperature: 230 - 240 °C

Die temperature: 230 - 240 °C