TECHNICAL DATA SHEET

PLEXIGLAS® Heatresist hw55

Röhm GmbH

PMMA

Processing

Injection molding

Delivery Form

Pellets

Special Characteristics

Light stabilized or stable to light, U.V. stabilized or stable to weather, Heat stabilized or stable to heat, Transparent

Features

Copolymer

Chemical Resistance

Environmental stress crack resistance

Product Text

Product Information

Productprofil:

PLEXIGLAS® Heatresist hw55 clear is a copolymer based on methyl methacrylate (MMA) with comonomer constituents.

Besides showing the familiar properties of standard PLEXIGLAS® molding compound, such as

- high light transmission,
- good flowability,
- high mechanical strength, surface hardness and abrasion resistance, as well as
- excellent weatherability,

PLEXIGLAS® Heatresist hw55 clear offers the additional benefits of

- increased heat deflection temperature under load and
- improved resistance to stress cacking
- optimised inherent color,
- AMECA listing.

Application:

PLEXIGLAS® Heatresist hw55 clear is particularly suitable for injection molding of technical items.

Example:

lighted keys, luminaire covers, fiber optics.

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Processing:

PLEXIGLAS® Heatresist hw55 clear can be processed on injection molding machines with 3-zone general purpose screws for thermoplastics.

Physical Form / Packaging:

PLEXIGLAS® Heatresist hw55 is supplied as pellets of uniform size, packaged in two-ply, 25kg polyethylene bags; other packaging on request.

Processing/Physical Characteristics	Value	Unit	Standard
Melt volume-flow rate, MVR	1.2	cm³/10min	ISO 1133
Temperature	230	°C	
Load	3.8	kg	
Density of melt	1080	kg/m³	
Thermal conductivity of melt	0.19	W/(m K)	
Spec. heat capacity of melt	2438	J/(kg K)	
Eff. thermal diffusivity	7.216E-8	m²/s	
Ejection temperature	100	°C	

Mechanical Properties	Value	Unit	Standard
Tensile modulus	3600	MPa	ISO 527
Stress at break	80	MPa	ISO 527
Strain at break	3.5	%	ISO 527
Poisson's ratio	0.35		ISO 527
Tensile creep modulus, 1h	3300	MPa	ISO 899-1
Tensile creep modulus, 1000h	2700	MPa	ISO 899-1
Charpy impact strength, +23°C	20	kJ/m²	ISO 179/1eU

Thermal Properties	Value	Unit	Standard
Glass transition temperature, 10°C/min	122	°C	ISO 11357-1/-2
Temp. of deflection under load, 1.80 MPa	106	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	109	°C	ISO 75-1/-2
Vicat softening temperature, B	119	°C	ISO 306
Coeff. of linear therm. expansion, parallel	70	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	
Yellow card available	yes		
Oxygen index	18	%	ISO 4589-1/-2

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Electrical Properties	Value	Unit	Standard
Relative permittivity, 100Hz	3.5		IEC 62631-2-1
Relative permittivity, 1MHz	2.9		IEC 62631-2-1
Dissipation factor, 100Hz	400	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	200	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	2.2	%	Sim. to ISO 62
Humidity absorption	0.6	%	Sim. to ISO 62
Density	1190	kg/m³	ISO 1183

Material Specific Properties	Value	Unit	Standard
Viscosity number	60	cm³/g	ISO 307, 1157, 1628

Test Specimen Production	Value	Unit	Standard
Injection molding, melt temperature	250	°C	ISO 294
Injection molding, mold temperature	82	°C	ISO 294
Injection molding, injection velocity	195	mm/s	ISO 294

Diagrams

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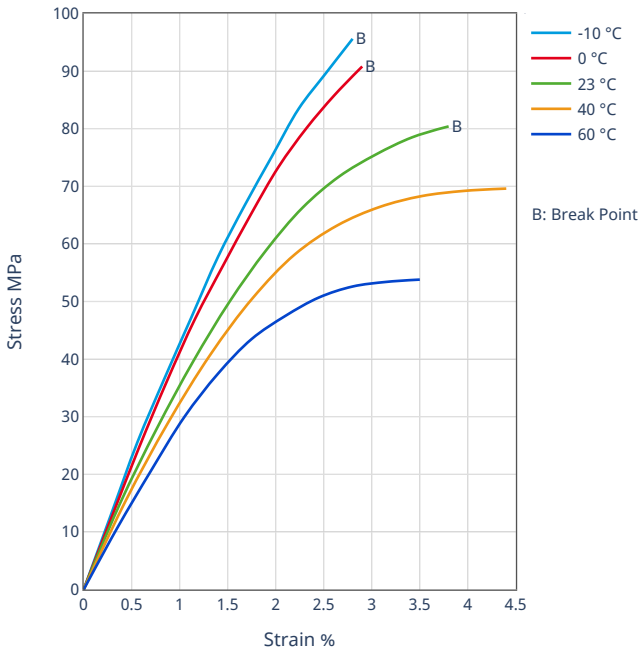
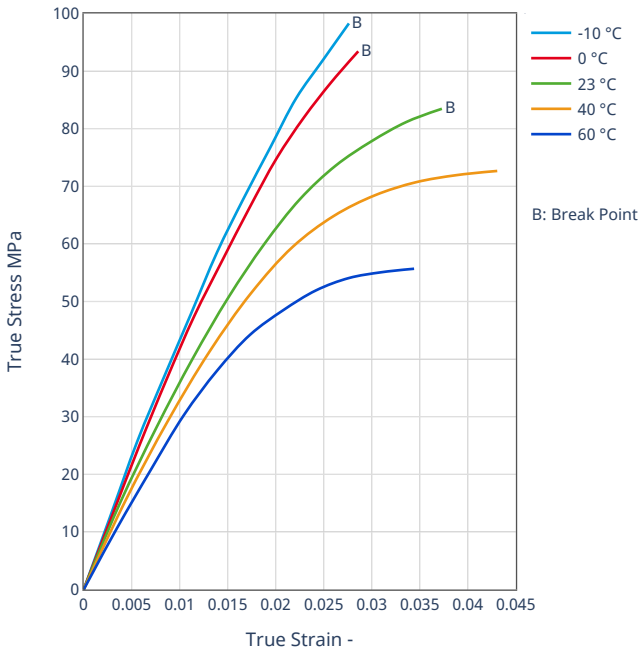
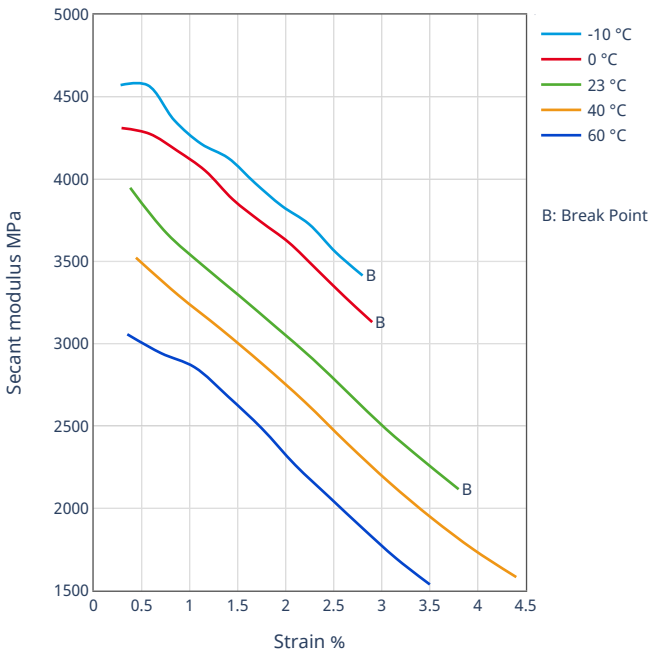
Stress-strain



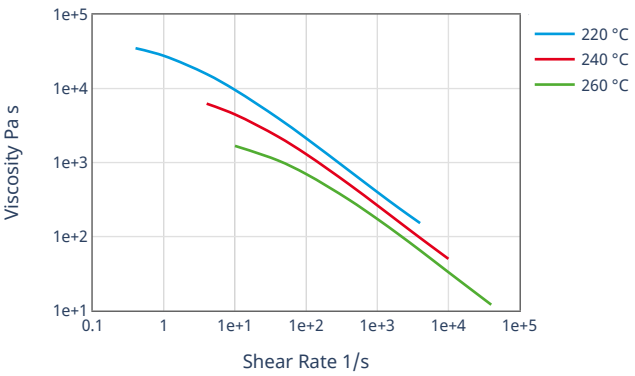
True stress-true strain



Secant modulus-strain



Viscosity-shear rate



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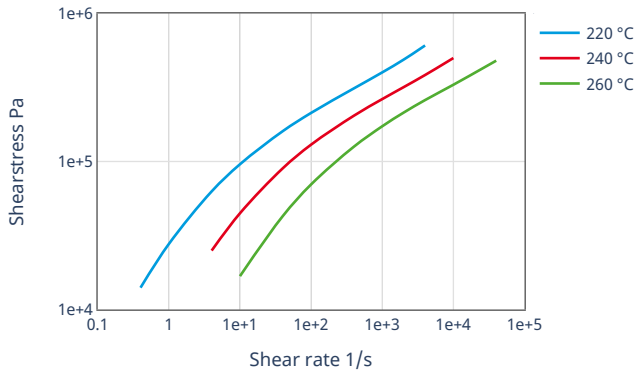
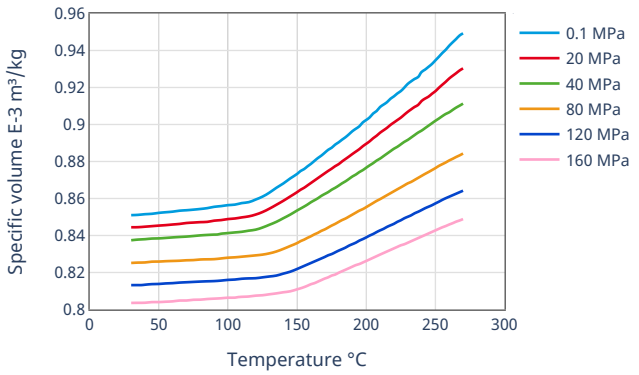
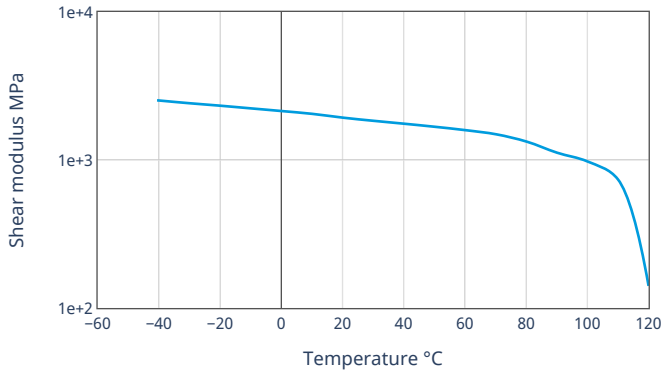
Shearstress-shear rate



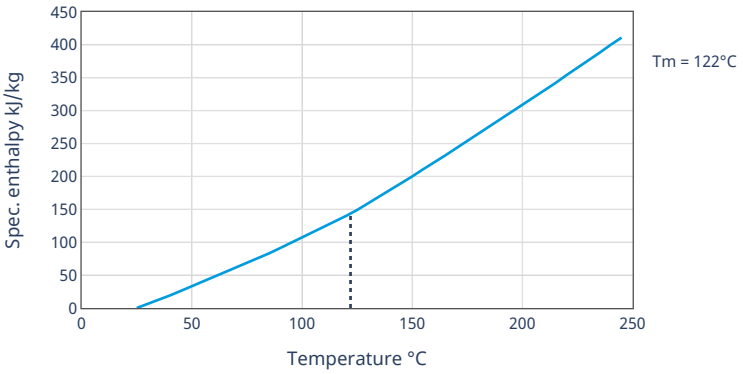
Spec. volume-Temperature (pVT)



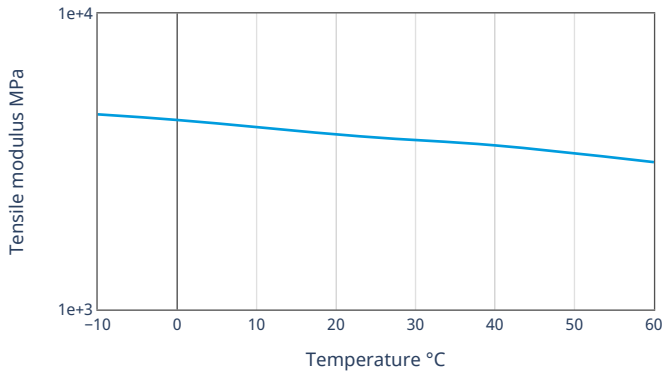
Dynamic shear modulus-temperature



Spec. enthalpy/mass-temp. (DSC)



Tensile modulus-temperature



Processing Information

Injection molding

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PREPROCESSING
Predrying temperature: max. 109 °C
Predrying time in a desiccant-type drier: 2 - 3 h
PROCESSING
Melt temperature: 220 - 250°C
Mold temperature:60 - 90°C