PLEXIGLAS® Heatresist FT15

PMMA — Evonik Industries AG

Product Texts

Productprofil:

PLEXIGLAS® Heatresist FT15 is a special acrylic-based polymer.

With regard to its

- good weather resistance and
- high light transmission,

PLEXIGLAS® Heatresist FT15 shows comparable properties to those of PLEXIGLAS® standard molding compounds. In addition, PLEXIGLAS® Heatresist FT15 offers the special benefit of a

- high heat deflection temperature combined with good flow.

Application:

PLEXIGLAS® Heatresist FT15 is particularly suitable for injection moldings.

Example:

luminaire covers, automotive lights and technical moldings exposed to high temperatures.

Processing:

PLEXIGLAS® Heatresist FT15 can be processed on injection-molding machines with 3-zone general purpose screws for engineering thermoplastics. Good pre-desiccation must be pointed out.

Physical Form / Packaging:

PLEXIGLAS® Heatresist FT15 is supplied as pellets of uniform size, packaged in 25kg, two-ply polyethylene bags; other packaging on request.

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	4.5	cm³/10min	ISO 1133
Temperature	230	°C	ISO 1133
Load	3.8	kg	ISO 1133

Mechanical properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	3500	MPa	ISO 527-1/-2
Stress at break	50	MPa	ISO 527-1/-2
Strain at break	3.1	%	ISO 527-1/-2
Charpy impact strength (+23°C)	18	kJ/m²	ISO 179/1eU

Thermal properties	Value	Unit	Test Standard
ISO Data			
Glass transition temperature, 10°C/min	121	°C	ISO 11357-1/-2
Temp. of deflection under load (1.80 MPa)	105	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	107	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	115	°C	ISO 306
Coeff. of linear therm. expansion, parallel	66	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	-	-

Electrical properties	Value	Unit	Test Standard
ISO Data			
Volume resistivity	>1E13	Ohm*m	IEC 60093

Other properties	Value	Unit	Test Standard
ISO Data			
Density	1190	kg/m³	ISO 1183

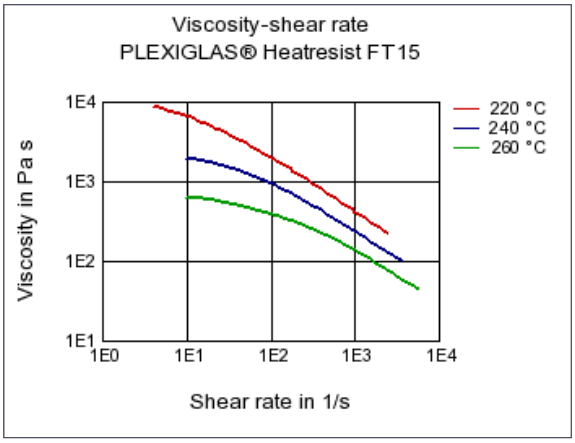
Material specific properties	Value	Unit	Test Standard
ISO Data			
Luminous transmittance	91	%	ISO 13468-1, -2

Rheological calculation properties	Value	Unit	Test Standard
ISO Data			
Density of melt	1110	kg/m³	-

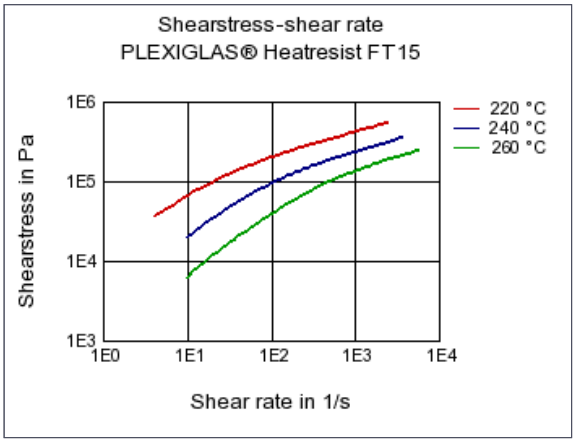
Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	230	°C	ISO 294
Injection Molding, mold temperature	70	°C	ISO 10724
Injection Molding, injection velocity	195	mm/s	ISO 294

Diagrams

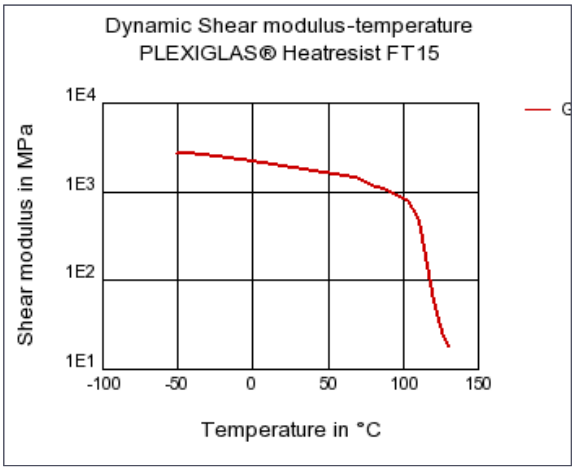
Viscosity-shear rate



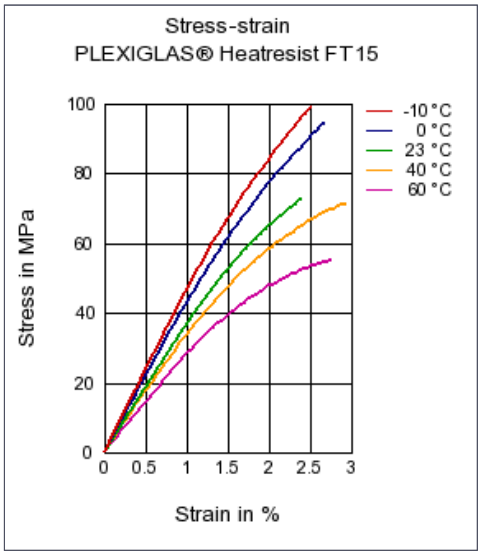
Shearstress-shear rate



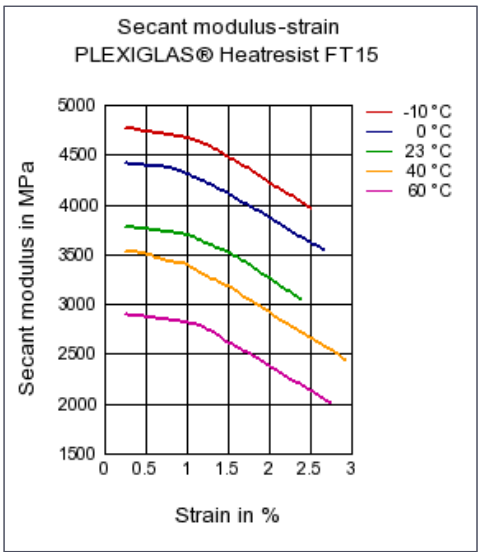
Dynamic Shear modulus-temperature



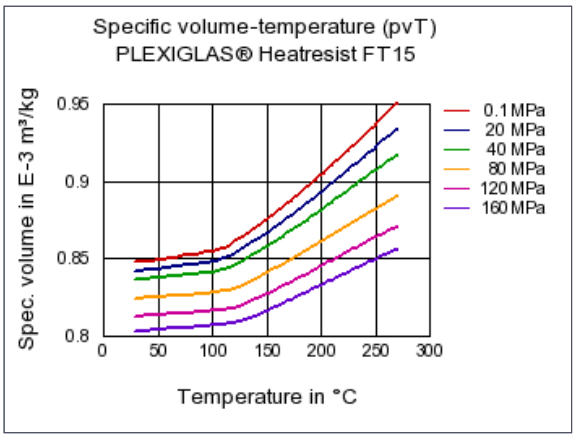
Stress-strain



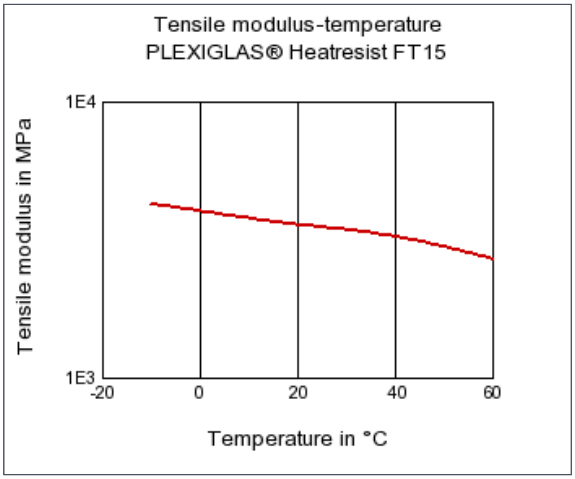
Secant modulus-strain



Specific volume-temperature (pvT)



Tensile modulus-temperature



Characteristics

PLEXIGLAS® Heatresist FT15

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Processing
Injection Molding

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

Delivery form
Pellets

Other text information

Injection Molding
PREPROCESSING
Predrying temperature: max. 100 °C
Predrying time in a desiccant-type drier: 4 - 6 h
PROCESSING
Min. melt temperature: 220 - 250°C
Min. mold temperature:60 - 90°C

Chemical Media Resistance

Acids
- Citric Acid solution (10% by mass) (23°C)
- Lactic Acid (10% by mass) (23°C)
- Nitric Acid (40% 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)

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