PLEXIGLAS® Hi-Gloss NTA-1

PMMA-I Evonik Industries AG

Product Texts

Productprofil:

PLEXIGLAS ® Hi-Gloss NTA-1 is an impact-modified compound with a high heat deflection temperature based on polymethyl methacrylate (PMMA).

Besides the well-known properties of PLEXIGLAS® molding compound, such as

- good flow
- high mar resistance
- good weather resistance
- good polishability,

PLEXIGLAS ® Hi-Gloss NTA-1 offers the added benefits of

- increased impact strength
- good heat deflection temperature under load.

Application:

PLEXIGLAS ® Hi-Gloss NTA-1 is particularly suitable for injection molding technical components.
Owing to its superior brilliance, high-gloss (Class A) surfaces can be obtained in opaque colors.

Example:

add-on automotive body parts, mirror housings, pillar panels, spoilers

Processing:

PLEXIGLAS ® Hi-Gloss NTA-1 can be processed on machines with 3-zone general purpose screws for engineering thermoplastics.

Physical Form / Packaging:

PLEXIGLAS ® Hi-Gloss NTA-1 compounds are supplied as pellets of uniform size, packaged in 25kg polyethylene bags or in 500kg boxes with PE lining; other packaging on request.

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	3	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	2700	MPa	ISO 527-1/-2
Yield stress	68	MPa	ISO 527-1/-2
Yield strain	5	%	ISO 527-1/-2
Nominal strain at break	10	%	ISO 527-1/-2
Tensile creep modulus, 1h	2500	MPa	ISO 899-1
Tensile creep modulus, 1000h	1250	MPa	ISO 899-1
Charpy impact strength (+23°C)	33	kJ/m²	ISO 179/1eU

Thermal properties	Value	Unit	Test Standard
ISO Data			

Glass transition temperature, 10°C/min	120	°C	ISO 11357-1/-2
Temp. of deflection under load (1.80 MPa)	102	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	103	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	110	°C	ISO 306
Coeff. of linear therm. expansion, parallel	78.5	E-6/K	ISO 11359-1/-2

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

Other properties	**Value**	**Unit**	**Test Standard**
ISO Data			
Water absorption	3	%	Sim. to ISO 62
Density	1180	kg/m³	ISO 1183

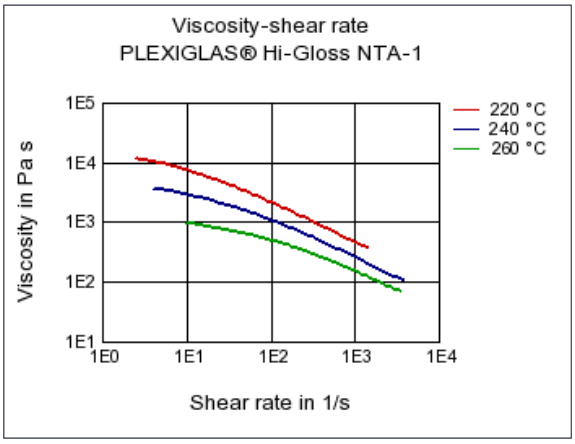
Material specific properties	**Value**	**Unit**	**Test Standard**
ISO Data			
Luminous transmittance	0	%	ISO 13468-1, -2

Rheological calculation properties	**Value**	**Unit**	**Test Standard**
ISO Data			
Density of melt	1090	kg/m³	-
Ejection temperature	90	°C	-

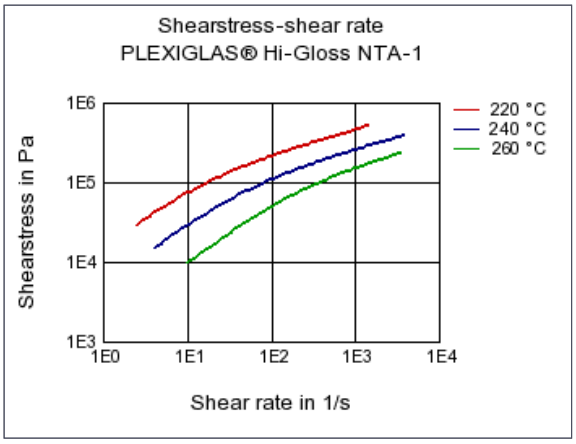
Test specimen production	**Value**	**Unit**	**Test Standard**
ISO Data			
Injection Molding, melt temperature	235	°C	ISO 294
Injection Molding, mold temperature	70	°C	ISO 10724
Injection Molding, injection velocity	195	mm/s	ISO 294

Diagrams

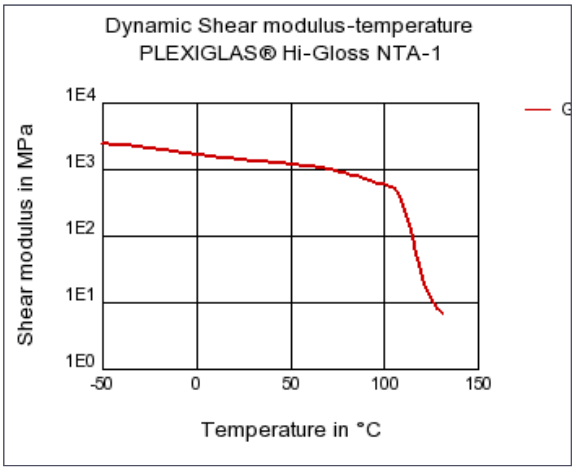
Viscosity-shear rate



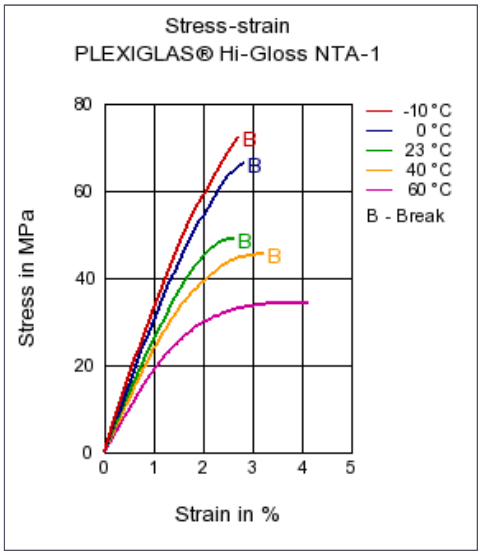
Shearstress-shear rate



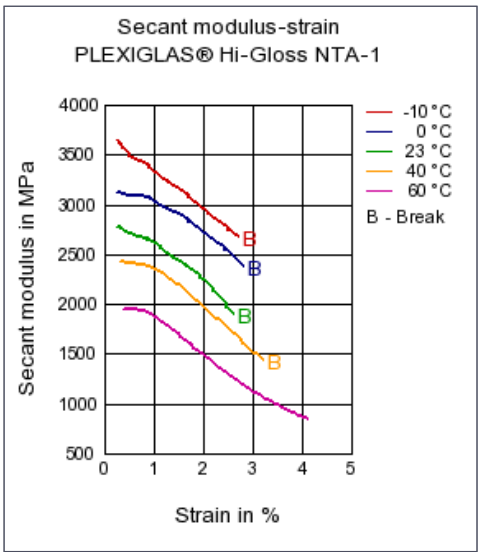
Dynamic Shear modulus-temperature



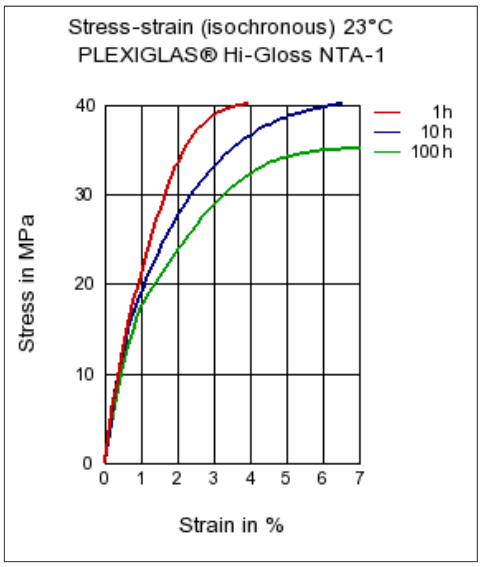
Stress-strain



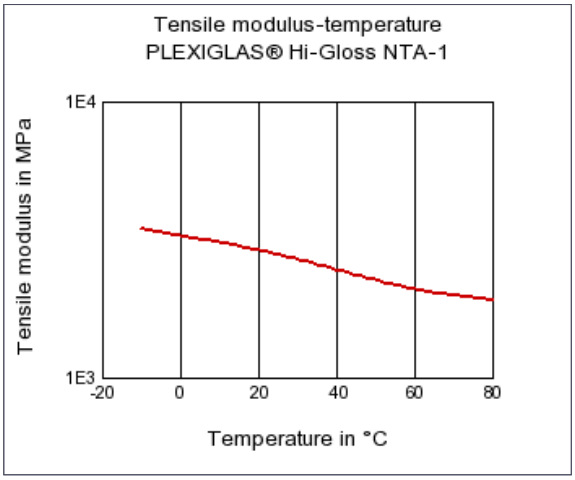
Secant modulus-strain



Stress-strain (isochronous) 23°C



Tensile modulus-temperature



Characteristics

PLEXIGLAS® Hi-Gloss NTA-1

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Processing
Injection Molding

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

Delivery form
Pellets

Other text information

Injection Molding
PREPROCESSING
Predrying temperature: max. 100 °C
Predrying time in a desiccant-type drier: 2 - 3 h
PROCESSING
Min. melt temperature: 220 - 250°C
Min. mold temperature:50 - 85°C