TECHNICAL DATA SHEET

# PLEXIGLAS® Hi-Gloss NTA-3

PMMA — Evonik Industries AG

## Product Texts

### Productprofil:

PLEXIGLAS ® Hi-Gloss NTA-3 is an impact-modified compound with an increased heat deflection temperature based on polymethylmethacrylate (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-3 offers the added benefit of

- increased heat deflection temperature under load.

### Application:

PLEXIGLAS ® Hi-Gloss NTA-3 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:

automotive body parts: window channels, pillar panels

### Processing:

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

### Physical Form / Packaging:

PLEXIGLAS ® Hi-Gloss NTA-3 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 | 2 | 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 | 2900 | MPa | ISO 527-1/-2 |
| Stress at break | 60 | MPa | ISO 527-1/-2 |
| Strain at break | 2.6 | % | ISO 527-1/-2 |
| Tensile creep modulus, 1h | 2700 | MPa | ISO 899-1 |
| Tensile creep modulus, 1000h | 1700 | MPa | ISO 899-1 |
| Charpy impact strength (+23°C) | 16 | kJ/m² | ISO 179/1eU |

| Thermal properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Glass transition temperature, 10°C/min | 125 | °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) | 106 | °C | ISO 75-1/-2 |
| Vicat softening temperature, 50°C/h 50N | 116 | °C | ISO 306 |
| Coeff. of linear therm. expansion, parallel | 75 | 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 | 1190 | kg/m³ | ISO 1183 |

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

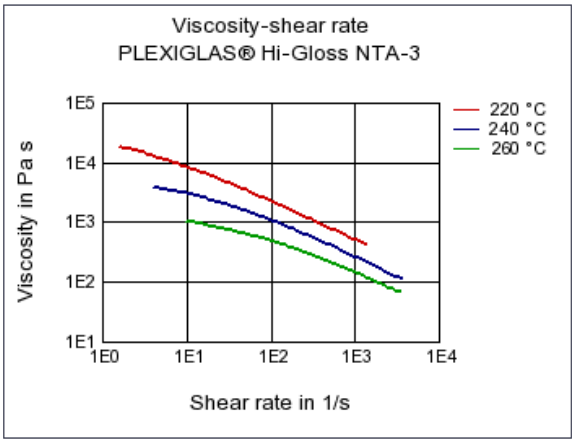
| Rheological calculation properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Density of melt | 1100 | kg/m³ | - |
| Ejection temperature | 95 | °C | - |

| VDA Properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Burning rate, Thickness 1 mm | 93.4 | mm/min | ISO 3795 (FMVSS 302) |

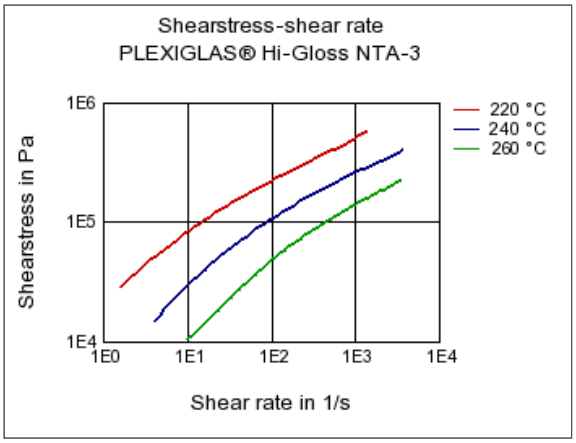
| Test specimen production | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Injection Molding, melt temperature | 240 | °C | ISO 294 |
| Injection Molding, mold temperature | 76 | °C | ISO 10724 |
| Injection Molding, injection velocity | 195 | mm/s | ISO 294 |

## Diagrams

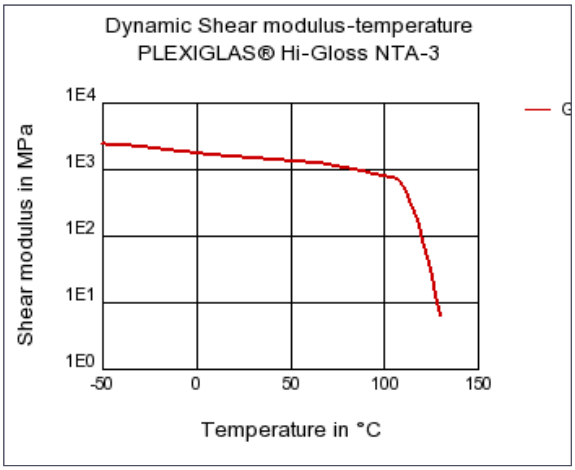
### Viscosity-shear rate



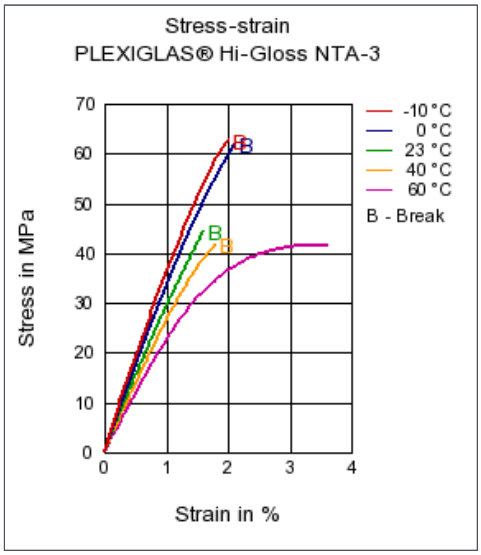

### Shearstress-shear rate



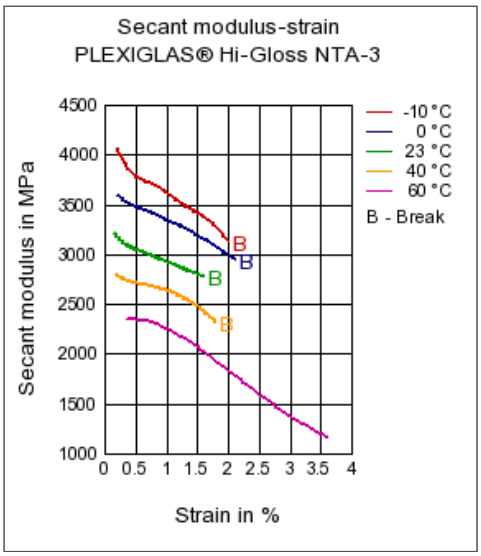
## Dynamic Shear modulus-temperature



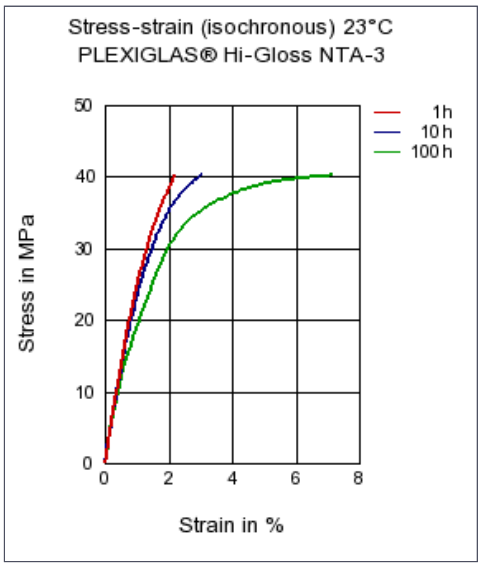

## Stress-strain



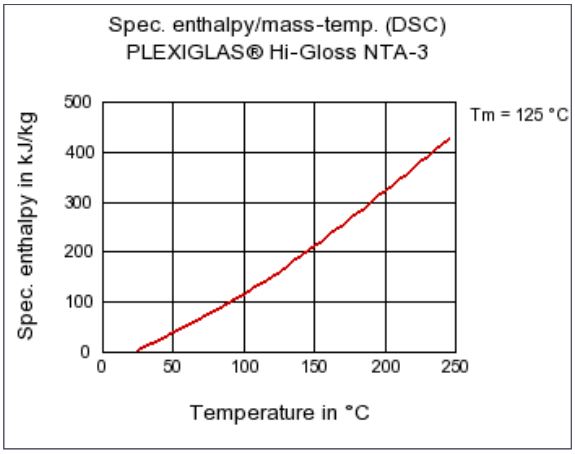

## Secant modulus-strain



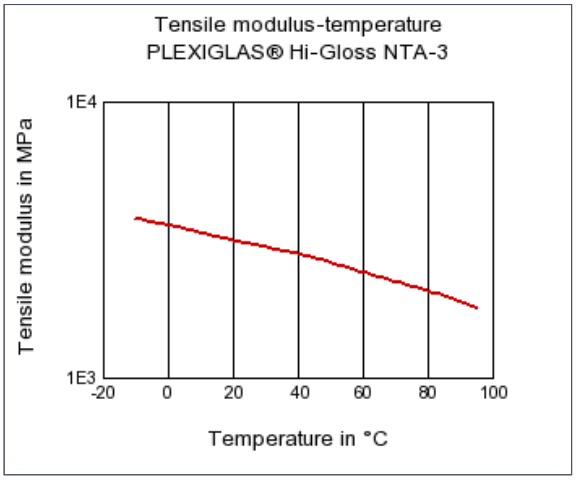

## Stress-strain (isochronous) 23°C




## Spec. enthalpy/mass-temp. (DSC)




## Tensile modulus-temperature




## Characteristics

## PLEXIGLAS® Hi-Gloss NTA-3

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**Processing**
Injection Molding

**Special Characteristics**
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