PLEXIGLAS®

THE ORIGINAL BY RÖHM

PLEXIGLAS® OPTICAL HT

High optical quality in combination with increased long-term service temperature

RÖHM

PLEXIGLAS® Optical HT

High optical quality and high long-term service temperature

NEW PRODUCT PLEXIGLAS® Optical HT

[MARKET TRENDS AND OUR SOLUTION]

MARKET TREND	CURRENT ISSUE	[RÖHM SOLUTION]
Modern product designs demand and use **High power LED lenses** and **Long light guides** This leads to challenging optical and thermal requirements for materials used	Numerous material solutions in the market for these applications offer: High optical quality **or** High long-term service temperature	PLEXIGLAS® Optical HT offers in a single product: **High optical quality** **and** **High long-term service temperature** 

[KEY PERFORMANCE DRIVERS]

Lighting Industry

Key performance drivers

- Higher UL/RTI Rating compared to standard acrylic (105°C, approved)
- Outdoor Suitability – weathering standard (UL f1, approved)

Automotive Industry

Key performance drivers

- Higher Vicat for High Power LED light guides / lenses
- Higher transmittance for long light guides / thick lenses
- Color stability for long light guides / thick lenses

Summary

PLEXIGLAS® OPTICAL HT

[PRODUCT DESCRIPTION]

PLEXIGLAS® Optical HT is an amorphous, thermoplastic molding compound for use in all applications where a crystal clear, weathering stable acrylic material is required.

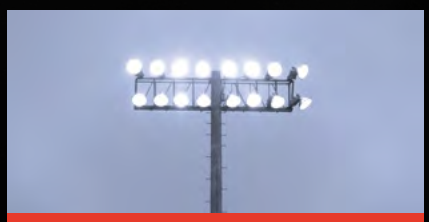
[KEY PROPERTIES]

- Best-in-class Vicat softening temperature
- Best-in-class: RTI/UL rating (Resist thermal aging)
- Typical properties of PLEXIGLAS® are retained (transmittance, weathering, high clarity)
- Low color shift over long light distances

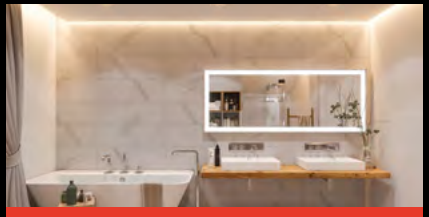
[APPLICATIONS]

(Thick) lenses

Light guides

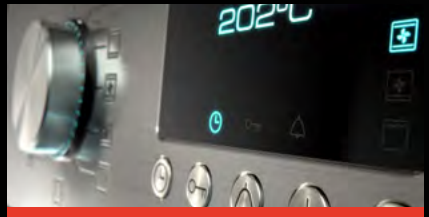


Lenses and light guides for high power LED



Ambient lighting

Road lighting



Applications with increased heat input

[KEY PROPERTIES]

#1 High level Vicat Softening temperature

- Comparison of various PLEXIGLAS® grades
- Vicat softening temperature: 118°C

Vicat Softening Temperature B/50 (°C)

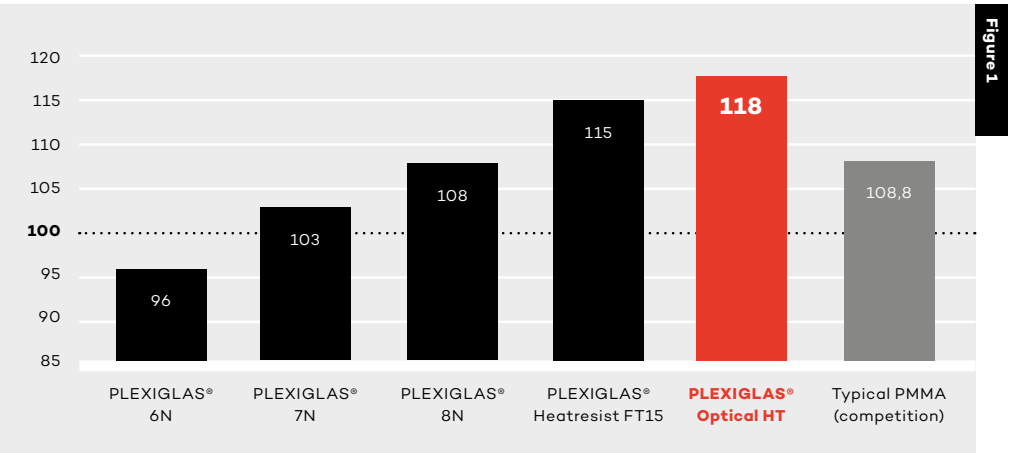


Figure 1

#2 UL RTI Resistance to Thermal Aging

- Superior performance in resisting thermal aging compared to standard and other special PMMA grades for optical applications
- Best-in-class UL/RTI rating: 105°C

Temperature (°C)

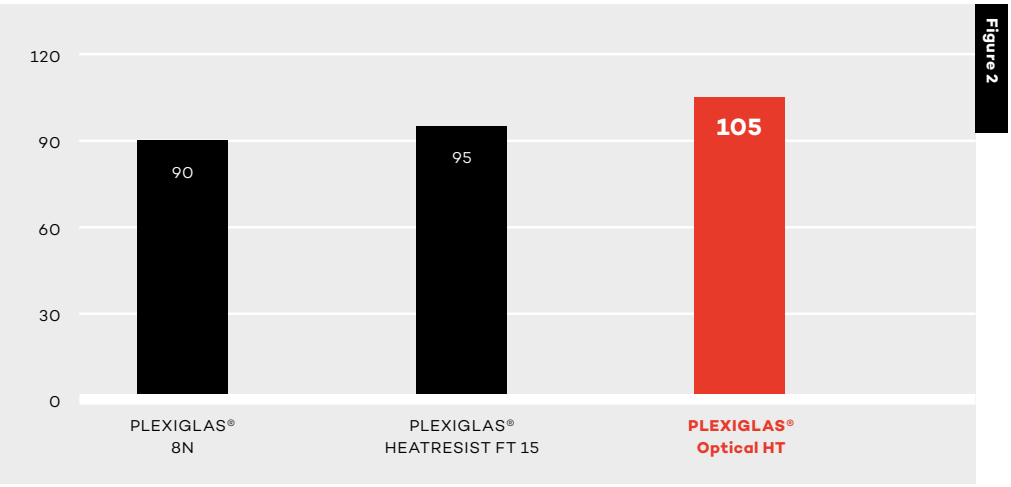


Figure 2

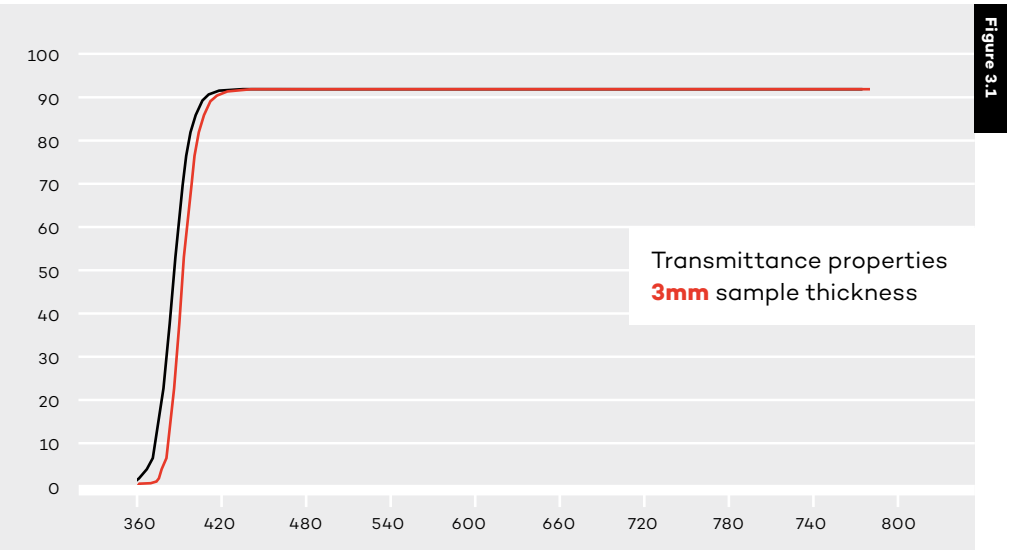
#3 High Clarity Suitable for light guides > 500mm

- Light transmittance similar to industry benchmark PLEXIGLAS® 8N
- Very high bright and brilliant optics

PLEXIGLAS® Optical HT

PLEXIGLAS® 8N

Transmittance [%]



Wavelength [nm]

Figure 3.1

- Excellent light transmittance comparable to PLEXIGLAS® 8N even for long path length with low haze < 0,5%
- Within heat resisting materials available: Best-in-class for optical clarity, color stability and transmittance

PLEXIGLAS® Optical HT
PLEXIGLAS® 8N
Competitive material

Transmittance [%]

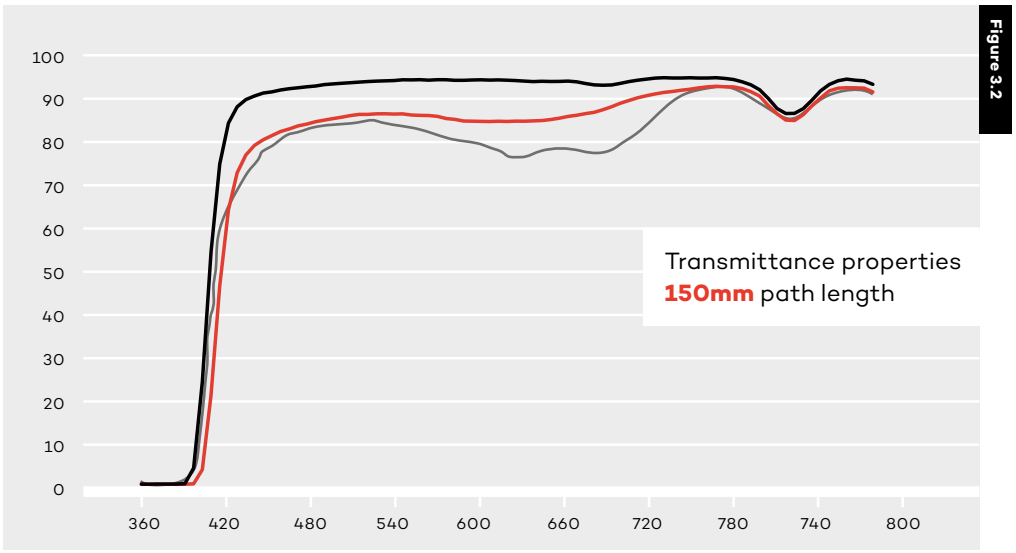


Figure 3.2

Wavelength [nm]

#4 UL f1 rating, AMECA Weathering stability

- Impressing results of accelerated weathering with Xenon-Arc Lamps (DIN EN ISO 4892-2)
- Very high durability of bright and brilliant optics
- Negligible change in transmission properties over time retaining outstanding weathering behavior of acrylics
- Sample thickness: 3mm

Luminous Transmittance [%] Δ Haze [%] Δ Yellowness Index [-]

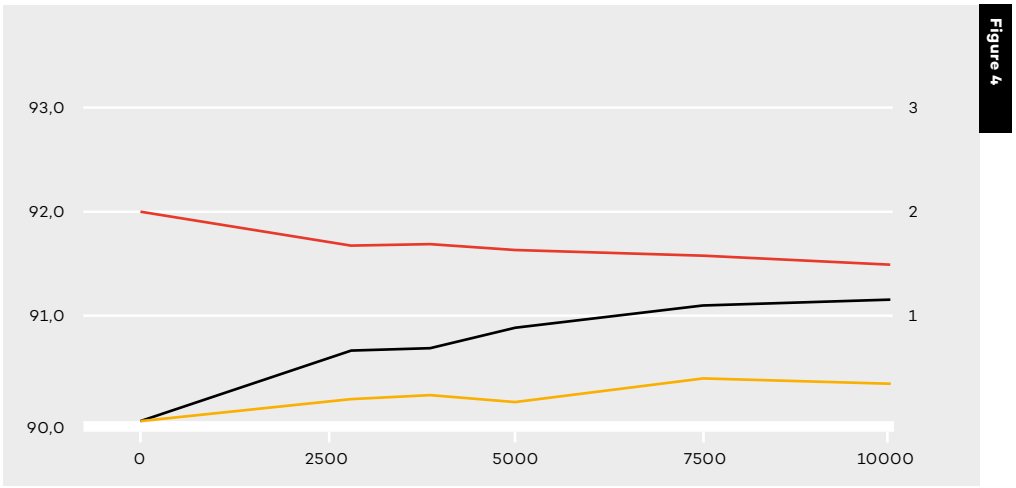


Figure 4

Testing time [hrs]

#5 Good processability MVR comparable to standard material

- Good flowability
- Processability in injection molding is similar to other standard PMMA grades
- Flow properties allow for processing of complex optical parts

MVR (230/3.8cm³/10min)

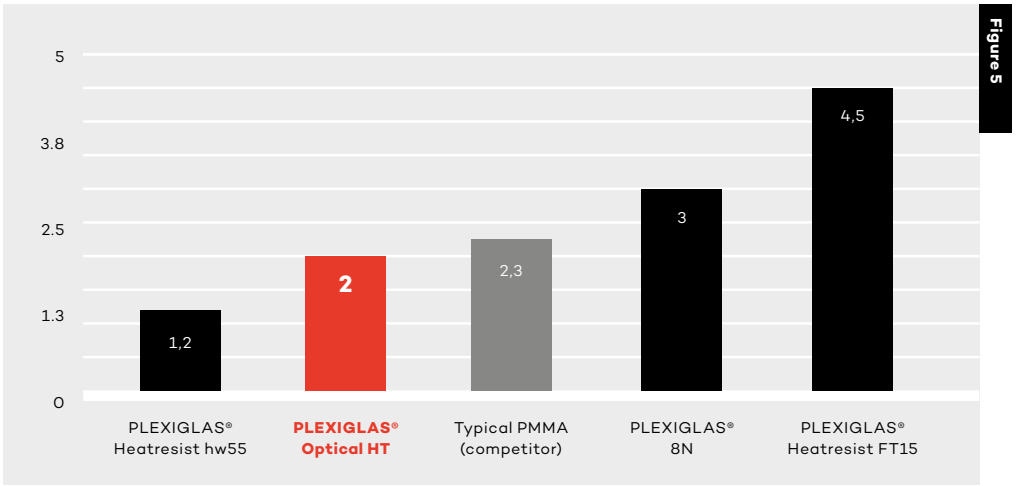


Figure 5

PLEXIGLAS®

THE ORIGINAL BY RÖHM

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Röhm is a worldwide manufacturer of PMMA products sold under the PLEXIGLAS® trademark on the European, Asian, African and Australian continents and under the ACRYLITE® trademark in the Americas.

October 2020
0/1020/001