

### Technical Data: Acrylic (PMMA)

#### Product Description

#### Define and Grades

Injection-molded PMMA grades differ in properties: General-purpose PMMA offers optical clarity but limited impact resistance. High-impact PMMA adds durability. Optical-grade PMMA ensures superior clarity. High-performance PMMA combines strength and clarity, and UV-resistant PMMA offers protection against UV degradation. These differences suit various applications.

Neway employs various grades of injection molded PMMA, including:

- Plexiglas® (General-Purpose PMMA)
- Altuglas® (High-Impact PMMA)
- Optix® (Optical-Quality PMMA)
- Lucite® (High-Performance PMMA)
- Acrylite® (UV-Resistant PMMA)



#### Features and Applications

Grade	Features	Applications
Plexiglas® (General-Purpose PMMA)	Optical clarity, ease of molding	Transparent displays, signs, automotive lenses
Altuglas® (High-Impact PMMA)	High impact resistance, clarity	Safety shields, aircraft windows, instrument panels
Optix® (Optical-Quality PMMA)	Superior optical clarity	Optical lenses, camera lenses, medical devices
Lucite® (High-Performance PMMA)	Strength, UV resistance	Architectural glazing, lighting fixtures, aircraft windows
Acrylite® (UV-Resistant PMMA)	UV protection, optical clarity	Outdoor signage, protective barriers, skylights

#### Physical and Mechanical

Property	Density	Tensile Strength	Tensile Elongation	Flexural Modulus	Flexural Strength	Izod Impact Strength	Heat Deflection Temp.	Shrinkage	Hardness
Units	(g/cm <sup>3</sup> )	(Mpa)	(%)	(MPa)	(MPa)	(J/m)	(°C)	(%)	(HRB)
Plexiglas®	1.18	72	4.7	3.1	114	16	95	0.4-0.7	95
Altuglas®	1.19	70	6	3.2	109	69	85	0.3-0.7	97
Optix®	1.19	72	4.5	3.1	118	16	95	0.3-0.7	95
Lucite®	1.19	78	5	3.3	126	16	100	0.3-0.6	100
Acrylite®	1.19	72	5	3.1	115	16	95	0.3-0.7	95

#### Note

The above data are reference material science data. This data reference is not binding and is not considered as authoritative test data. If your material requirements are extremely precise, please contact our material engineers. Tel | +86 18926788217 | Web | [www.newayprecision.com](http://www.newayprecision.com) | Contact Neway



# PMMA Injection Molding

Acrylic

## NEWAY PRECISION WORKS

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### Benefits of Material Grades

#### Plexiglas® (General-Purpose PMMA)

**Optical Clarity:** Plexiglas® PMMA offers exceptional optical clarity, making it suitable for essential transparency and visibility applications. It is commonly used for transparent displays, windows, and signage.

**Ease of Molding:** Plexiglas® can be easily molded into various shapes and sizes, allowing for versatility in design. This property makes it a preferred material for various general-purpose applications.

**Chemical Resistance:** Plexiglas® exhibits good chemical resistance, making it suitable for use in environments where exposure to chemicals or solvents is a concern, such as chemical storage containers.



#### Altuglas® (High-Impact PMMA)



**High Impact Resistance:** Altuglas® PMMA is known for its exceptional impact resistance, even at low temperatures. This property makes it an excellent choice for applications requiring durability and protection, such as safety shields and aircraft windows.

**Clarity:** Despite its high impact resistance, Altuglas® maintains good optical clarity. This property is valuable in applications like instrument panels and protective barriers where clarity and strength are essential.

**Outdoor Use:** Altuglas® performs well in outdoor environments due to its resistance to UV degradation. This makes it suitable for outdoor signage, skylights, and protective barriers.

#### Optix® (Optical-Quality PMMA)

**Superior Optical Clarity:** Optix® PMMA is renowned for its superior optical clarity, with minimal distortion. It is the ideal choice for applications where precision and high-quality optics are critical, such as optical lenses and camera lenses.

**Dimensional Stability:** Optix® maintains its shape and optical properties under varying environmental conditions. This stability is essential in optical applications where precision is paramount.



#### Lucite® (High-Performance PMMA)



**Strength:** Lucite® PMMA is valued for its strength, making it suitable for applications requiring durability and structural integrity. It is often used in architectural glazing, lighting fixtures, and aircraft windows.

**UV Resistance:** Lucite® offers good UV resistance, ensuring long-term performance in outdoor applications. This property is essential for products like outdoor lighting and architectural components.

#### Acrylite® (UV-Resistant PMMA)

**UV Protection:** Acrylite® PMMA is explicitly designed for UV protection. It offers excellent shielding against harmful UV rays, making it suitable for outdoor applications like protective barriers and greenhouse glazing.

**Optical Clarity:** Despite its UV resistance, Acrylite® maintains optical clarity, ensuring it does not compromise visibility or light transmission. This property is vital in applications like skylights and signage.



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