

ACRYLIC RESINS

Product Guide



Our Plexiglas® impact-modified acrylic resins provide higher impact resistance than standard acrylics, while maintaining excellent optical properties. With the combination of increased toughness, outstanding transparency, and impressive UV resistance, Plexiglas® acrylic has the right resin for every job.

IMPACT GRADES

Plexiglas® DR® exhibits minimal edge color and provides ten times the impact resistance of standard acrylic materials.

Plexiglas® HFI10 is specially formulated for improved mold release and melt strength. It has a high melt flow rate and provides ten times the impact resistance of standard acrylic resins.

Plexiglas® SG10 is formulated for outstanding light transmission and water-white clarity for disposable medical applications. It maintains exceptional gamma resistance and strong chemical resistance.

Plexiglas® MI7 provides seven times the impact resistance of standard acrylics and offers an excellent balance between melt flow rate and increased resistance to breakage.

Plexiglas® SG7 provides seven times the impact resistance of standard acrylics and offers outstanding light transmission and water-white clarity for disposable medical applications. It maintains exceptional gamma resistance.

Plexiglas® HFI7 provides seven times the impact resistance of standard acrylics, has a high melt flow rate, and is formulated specifically for improved mold release & melt strength.



Plexiglas® Acrylic Resin

A Resin for Every Job

The Altuglas International family of Plexiglas® acrylic thermo-plastic resins form attractive, tough, precise components for automotive, lighting, medical, and optical display markets. Our resins offer excellent optical clarity, top-notch weatherability, and exceptional design flexibility.



Altuglas resins, which are available in many grades and colors, can be:

- INJECTION MOLDED
- THERMOFORMED
- EXTRUDED
- EMBOSSSED
- DRILLED
- MACHINED
- ENGRAVED
- SPRAYED
- SILK-SCREENED
- HOT-STAMPED
- VACUUM-METALLIZED
- CHROME-PLATED



Our **Thermoplastic Acrylic Resin** Family

All of our resins offer excellent optical clarity, surface finish, and outdoor stability. Each Plexiglas® grade is formulated for the specific application's needs, as outlined in the text and tables that follow.

HT GRADES

Plexiglas® HT121 is formulated for exceptional heat resistance. It is most commonly used in automotive assemblies.

V-SERIES GRADES

Plexiglas® V825 is characterized by its moderate melt flow rate and heat resistance. It is most commonly used to produce extruded and injection molded parts.

Plexiglas® V825UVA5A was developed to meet precise UV-transmission requirements for specialty lighting packages.

Plexiglas® V826 is characterized by its moderate melt flow rate and its excellent chemical and heat resistance. It is most commonly used in injection molding and extrusion applications.

Plexiglas® V045 exhibits excellent thermal stability, extrusion melt strength, surface appearance, and mold release properties. It is commonly used in applications requiring extraordinarily good optical properties, as well as chemical and heat resistance.

Plexiglas® V920 is characterized by its high melt flow rate and works well in injection molding and extrusion applications.

Plexiglas® VM exhibits a very high melt flow rate and is typically used in injection molding applications.

Plexiglas® VS is specifically formulated for injection molding applications and exhibits a very high melt flow rate.

Plexiglas® VSUVT is specifically formulated for injection molding applications. It exhibits exceptional UV transmittance, is scratch resistant, and has a very high melt flow rate.

Plexiglas® V045i is lightly impact-modified. It is formulated for extrusion applications in which a greater resistance to breakage is required.

Plexiglas® V052i is a lightly impact-modified resin formulated for improved mold-release characteristics.



Typical Physical Properties

PLEXIGLAS® GRADES			V-SERIES GRADES							
			HT GRADES			V-SERIES GRADES				
			COMMON PROCESSING METHODS			HIGH HEAT APPLICATIONS		MEDIUM FLOW GENERAL PURPOSE		HIGH FLOW
			HT121	V825 V825UVA5A	V826	V045	V920	VM		
			INJECTION MOLDING	INJECTION MOLDING, EXTRUSION		INJECTION MOLDING				
PROPERTIES	TEST METHOD	UNITS								
PHYSICAL										
Melt Flow Rate (230°C/3.8 kg)	ASTM D1238	g/10 min	2.6	3.7	1.6	2.3	8.0	14.5		
Specific Gravity	ASTM D792	—	1.19	1.19	1.19	1.19	1.19	1.18		
Mold Shrinkage	ASTM D955	%	0.2 - 0.6	0.2 - 0.6	0.2 - 0.6	0.2 - 0.6	0.2 - 0.6	0.2 - 0.6		
Water Absorption (24 Hrs: Immersion)	ASTM D570	% weight gain	0.4	0.3	0.3	0.3	0.3	0.3		
MECHANICAL										
Tensile Strength at Maximum	ASTM D638	psi	10,200	10,200	10,200	10,200	10,000	9,600		
Tensile Elongation at Break	ASTM D638	%	3	6	6	6	5	4		
Tensile Modulus	ASTM D638	psi	475,000	450,000	450,000	450,000	450,000	440,000		
Flexural Strength at Maximum	ASTM D790	psi	15,000	15,000	15,000	15,000	15,000	14,000		
Flexural Modulus	ASTM D790	psi	475,000	450,000	450,000	450,000	450,000	435,000		
Notched Izod Impact	ASTM D256	ft • lb/in notch	0.3	0.3	0.3	0.3	0.3	0.3		
Rockwell Hardness	ASTM D785	M	99	93	93	91	90	89		
THERMAL										
HDT (0.45 MPa; annealed) ¹	ASTM D648	°F/°C	235 / 113	221 / 105	221 / 105	202 / 94	199 / 93	182 / 83		
HDT (1.8 MPa; annealed) ¹	ASTM D648	°F/°C	226 / 108	216 / 102	216 / 102	199 / 93	195 / 91	171 / 77		
Vicat Softening Temperature (10 N)	ASTM D1525	°F/°C	246 / 119	232 / 111	232 / 111	217 / 103	212 / 100	191 / 88		
Vicat Softening Temperature (50 N)	ASTM D1525	°F/°C	240 / 116	219 / 104	219 / 104	207 / 97	196 / 91	180 / 82		
Thermal Conductivity	ASTM C177	BTU/hr • ft ² • °F/in	1.3	1.3	1.3	1.3	1.3	1.3		
OPTICAL										
Refractive Index (N _d at 73°F)	ASTM D542	—	1.49	1.49	1.49	1.49	1.49	1.49		
Luminous Transmittance (0.125 in)	ASTM D1003	%	92	92	92	92	92	92		
Haze (0.125 in)	ASTM D1003	%	< 1	< 1	< 1	< 1	< 1	< 1		
CLASSIFICATION										
ASTM Classification	ASTM D788	—	PMMA 0311V2	PMMA 0141V3 PMMA 0143V3	PMMA 0141V1	PMMA 0131V2	PMMA 0121V4	PMMA 0111V5		

Note 1: Annealing Cycles

4 Hrs at 221°F 4 Hrs at 203°F 4 Hrs at 203°F 4 Hrs at 176°F 4 Hrs at 176°F 4 Hrs at 158°F

Note 2: Chemical resistance of Plexiglas® acrylic resins varies with stress level, temperature, reagent and resin grade.

Altuglas International recommends that selected Plexiglas® acrylic resins be tested with applicable solvents under appropriate conditions for the end-use application.

Note 3: SDS, material safety data sheets available for all products described above.



Please consult Arkema's disclaimer regarding the use of Arkema's products at <http://www.arkema.com/en/products/product-safety/disclaimer/index.html>

See SDS for Health & Safety Considerations.

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