PLEXIGLAS® BY ARKEMA

ACRYLIC RESINS

V-Series Resins

ALTUGLAS INTERNATIONAL
ARKEMA GROUP

THE RIGHT RESIN FOR EVERY JOB

Wherever there's a need for good-looking, precise, tough, molded parts, you'll find an outstanding combination of performance properties and value in the Altuglas International family of acrylic thermoplastic resins: excellent optical clarity, exceptional weatherability, and design flexibility. These resins are available in many grades and colors to meet your specific applications. Assemblies can be drilled, machined, engraved or embossed. Decorative coatings can be sprayed, silk-screened, hot-stamped, vacuum-metallized or chrome-plated. No matter what the job, Altuglas International has an acrylic resin that's exactly right.

Plexiglas® V-Series Acrylic Molding and Extrusion Resins

Plexiglas® V-series resins are a family of thermoplastic acrylics for injection molding and extrusion applications. They offer excellent weatherability and optical properties which make them outstanding materials for applications requiring outdoor stability, high-quality surface appearance and/or precision optics.

Plexiglas® HT121

Plexiglas® HT121 is a thermoplastic acrylic resin formulated for injection molding applications. It is characterized by its high heat resistance, with an RTI of 100°C. It has excellent weatherability and optical properties allowing it to excel in applications requiring outdoor stability, high quality surface appearance and/or precision optics.

Plexiglas® V045

Plexiglas® V045 exhibits exceptional thermal stability, extrusion melt strength, and tool surface reproduction and mold release properties making it very easy to process. Plexiglas® V045 is a thermoplastic acrylic resin formulated for injection molding and extrusion applications. It is characterized by its chemical and heat resistance as well a high melt flow. It has excellent weatherability and optical properties allowing it to excel in applications requiring outdoor stability, high quality surface appearance and/or precision optics.

Plexiglas® V045i

Plexiglas® V045i is a lightly impact modified thermoplastic acrylic resin formulated for extrusion applications. It is characterized by its chemical and heat resistance as well a high melt flow. It is a tougher resin than Plexiglas® V045 allowing improved fabrication. It offers an excellent balance between melt flow and increased resistance to breakage, while providing weatherability superior to that provided by other high-impact plastics.

Plexiglas® V052

Plexiglas® V052 is a thermoplastic acrylic resin formulated for injection molding. It is characterized by its chemical and heat resistance, high melt flow and excellent mold release properties. It's weatherability and optical properties allow it to excel in applications requiring outdoor stability, high quality surface appearance and/or precision optics.

Plexiglas® V052i

Plexiglas® V052i is a lightly impact modified thermoplastic acrylic resin formulated for injection molding. It is characterized by its chemical and heat resistance as well a good melt flow and excellent mold release properties. It is a tougher resin than Plexiglas® V052 allowing improved fabrication.

Plexiglas® V825

Plexiglas® V825 is a thermoplastic acrylic resin formulated for injection molding and extrusion applications. It is characterized by its high heat resistance and high melt flow. The resin has excellent weatherability and optical properties allowing it to excel in applications requiring outdoor stability, high quality surface appearance and/or precision optics.

Plexiglas® V825HID

Plexiglas® V825HID is a thermoplastic acrylic resin formulated for injection molding and extrusion applications. Specifically formulated for UV-emitting light or High Intensity Discharge sources up to 90°C, it is characterized by its excellent ultra-violet, heat resistance and high melt flow.

Plexiglas® V825UVA5A

Plexiglas® V825UVA5A is a thermoplastic acrylic resin formulated for injection molding and extrusion applications. It is formulated for specialty lighting packages requiring specific UV transmission requirements. It has excellent weatherability and optical properties allowing it to excel in applications requiring outdoor stability, high quality surface appearance and/or precision optics.

Plexiglas® V826

Plexiglas® V826 is a thermoplastic acrylic resin formulated for injection molding and extrusion applications. It is characterized by its excellent heat resistance and chemical resistance. It has excellent weatherability and optical properties allowing it to excel in applications requiring outdoor stability, high quality surface appearance and/or precision optics.

Plexiglas® V920

Plexiglas® V920 is a general purpose thermoplastic acrylic resin formulated for injection molding and extrusion applications. It is characterized by its very high melt flow and has excellent weatherability and optical properties allowing it to excel in applications requiring outdoor stability, high quality surface appearance and/or precision optics.

Plexiglas® VM

Plexiglas® VM is a thermoplastic acrylic resin formulated for injection molding applications. It is characterized by its very high melt flow and chemical resistance. It has excellent weatherability and optical properties allowing it to excel in applications requiring outdoor stability, high quality surface appearance and/or precision optics.

Plexiglas® VOD

Plexiglas® VOD is a thermoplastic acrylic resin formulated for injection molding applications. It is characterized by its high melt flow, excellent weatherability and optical properties allowing it to excel in applications for optical media and DVD transfer films requiring precision optics.

Plexiglas® VS

Plexiglas® VS is a thermoplastic acrylic resin formulated for injection molding applications. It is characterized by its very high melt flow. It has excellent weatherability and optical properties allowing it to excel in applications requiring outdoor stability, high quality surface appearance and/or precision optics.

Plexiglas® VS UVT

Plexiglas® VS UVT is a thermoplastic acrylic resin formulated for injection molding applications. It is characterized by its very high melt flow, exceptional UV transmittance and scratch resistance. It has excellent weatherability and optical properties allowing it to excel in applications requiring outdoor stability, high quality surface appearance and/or precision optics.

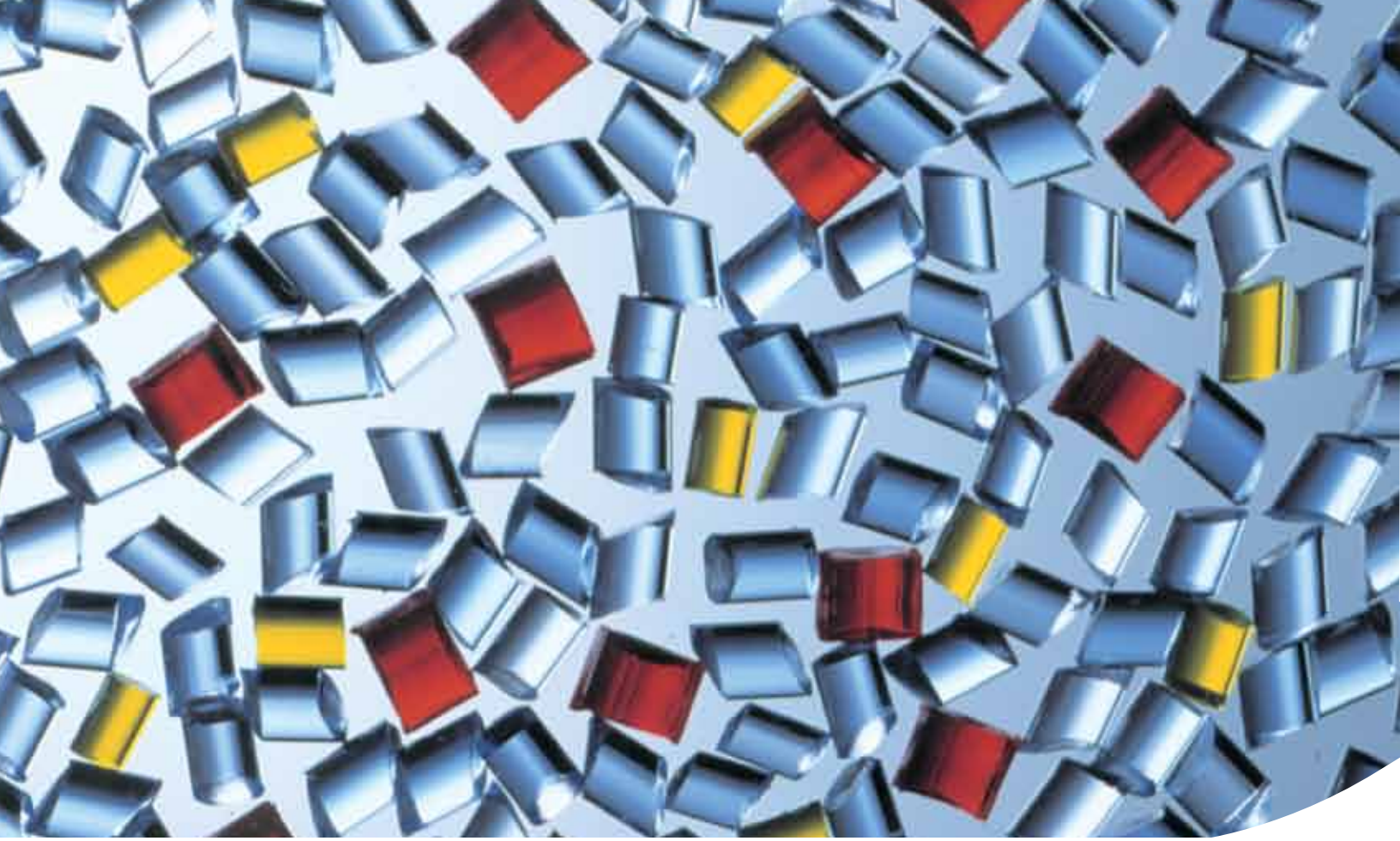
Typical Physical Properties of Plexiglas® Acrylic Resins

Properties	Test Method	Units	HT121	V045	V045i	V052	V052i	V052i-58208 RB
Physical								
Melt Flow Rate (230°C/3.8 kg)	ASTM D1238	g/10 min	2.6	2.3	2.1	2.8	3.0	3.2
Specific Gravity	ASTM D792	-	1.19	1.19	1.19	1.19	1.18	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	0.4	0.4
Mechanical								
Tensile Strength @ Maximum	ASTM D638	psi	10,200	10,200	9,800	10,200	9,200	9,200
Tensile Elongation @ Break	ASTM D638	%	3	6	15	6	22	18
Tensile Modulus	ASTM D638	psi	475,000	450,000	430,000	450,000	410,000	410,000
Flexural Strength @ Maximum	ASTM D790	psi	15,200	15,000	14,300	15,000	14,000	14,000
Flexural Modulus	ASTM D790	psi	475,000	450,000	425,000	450,000	420,000	420,000
Notched Izod Impact (73°F)	ASTM D256	ft-lb/in notch	0.3	0.3	0.4	0.3	0.4	0.4
Rockwell Hardness	ASTM D785	M	99	91	89	91	84	84
Thermal								
HDT (66 psi; annealed)[1]	ASTM D648	°F	235	202	198	202	217	217
HDT (264 psi; annealed)[1]	ASTM D648	°F	226	199	195	199	207	207
Vicat Softening Point (122°F/hr; 2.2 lbs)	ASTM D1525	°F	246	217	213	217	230	230
Vicat Softening Point (122°F/hr; 11.2 lbs)	ASTM D1525	°F	240	207	198	207	216	216
Thermal Conductivity	ASTM C177	BTU/hr*ft²*F/in		1.3	1.3	1.3	1.3	1.3
Optical								
Refractive Index (N_d @ 73°F)	ASTM D542		1.49	1.49	1.49	1.49	1.49	1.49
Luminous Transmittance (0.125")	ASTM D1003	%	92	92	91	92	91	N/A
Haze (0.125 in/3.2 mm)	ASTM D1003	%	<1	<1	<1	<1	<1	N/A
Classification								
ASTM Classification	ASTM D788		PMMA 0141V2	PMMA 0131V2	PMMA 0241V2	PMMA 0131V2	PMMA 0211V3	PMMA 0211V3
Note 1: Annealing cycles			Annealing Cycle 4hrs at 221 °F	Annealing Cycle 4hrs at 176 °F	Annealing Cycle 4hrs at 176 °F	Annealing Cycle 4hrs at 176 °F	Annealing Cycle 4hrs at 203 °F	Annealing Cycle 4hrs at 203 °F

Note 2: Chemical resistance — 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: MSDS/SDS — Material saftey data sheets available for all products described above.

V825	V825HID	V825-UVA5A	V826	V920	VM	VOD	VS	VS UVT
3.7	3.7	3.7	1.6	8.0	14.5	11.0	27.0	27.0
1.19	1.19	1.19	1.19	1.19	1.18	1.19	1.18	1.18
0.2-0.6	0.2-0.6	0.2-0.6	0.2-0.6	0.2-0.6	0.2-0.6	0.2-0.6	0.2-0.6	0.2-0.6
0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
10,200	10,200	10,200	10,200	10,000	9,600	9,800	9,400	9,400
6	6	6	6	5	4	5	3	3
450,000	450,000	450,000	450,000	450,000	440,000	450,000	420,000	420,000
15,000	15,000	15,000	15,000	15,000	14,000	15,000	14,000	14,000
450,000	450,000	450,000	450,000	450,000	435,000	450,000	430,000	430,000
0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
93	93	93	93	90	89	90	84	84
221	221	221	221	199	182	202	177	177
216	216	216	216	195	171	189	169	169
232	232	232	232	212	191	222	189	189
219	219	219	219	196	180	210	178	178
1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
92	92	92	92	92	92	92	92	92
<1	<1	<1	<1	<1	<1	<1	<1	<1
PMMA 0141V3	PMMA 0141V3	PMMA 0141V3	PMMA 0141V1	PMMA 0121V4	PMMA 0111V5	PMMA 0132V5	PMMA 0111V7	PMMA 0112V7
Annealing Cycle 4hrs at 203 °F	Annealing Cycle 4hrs at 203 °F	Annealing Cycle 4hrs at 203 °F	Annealing Cycle 4hrs at 203 °F	Annealing Cycle 4hrs at 176 °F	Annealing Cycle 4hrs at 158 °F	Annealing Cycle 4hrs at 176 °F	Annealing Cycle 4hrs at 158 °F	Annealing Cycle 4hrs at 158 °F



About Altuglas International, a subsidiary of ARKEMA:
Altuglas International, world leader integrated in PMMA, is heavily involved in the field of engineered plastic - from MMA monomer to PMMA Acrylic glass – Altuglas International designs and manufactures highly innovative products tailored to the specific needs of its global customers. Its 1300 committed employees contribute daily to the success of its three areas of business (MMA, acrylic sheets and PMMA resins). Find out more at www.altuglasint.com.

See MSDS for Health & Safety Considerations.

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