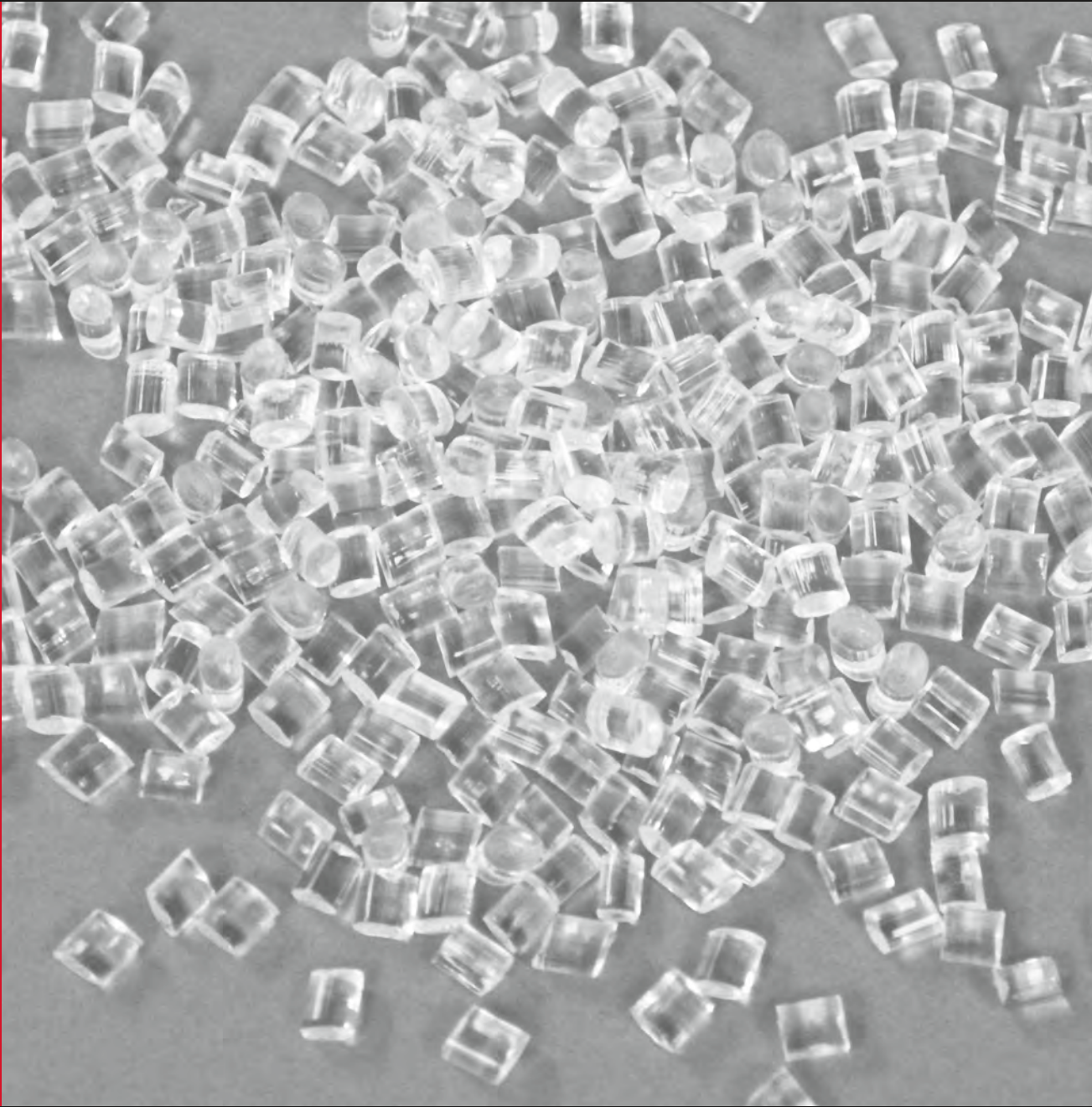


PLASKOLITE

OPTIX[®] **ACRYLIC
RESINS**



OPTIX[®] **ACRYLIC
RESINS**

**Acrylic Polymers for
Extrusion & Injection Molding**

Products

General-Purpose Grades

Plaskolite offers a wide variety of OPTIX General Purpose (GP) resins for injection molding and extrusion processes. Transparent, translucent, opaque and custom colors are available with varying levels of heat resistance, light transmission, lubricant content and melt flow rates. They provide unsurpassed clarity, excellent weatherability and ease of processing. Many grades of OPTIX acrylic resins comply with US FDA food contact regulation 21 CFR 177.1010.

Impact-Modified Grades

OPTIX Impact-Modified resins offer 4 to 12 times the impact strength of general purpose acrylic, while maintaining excellent optical properties. Some of Plaskolite's impact-modified grades are produced to resist gamma ray sterilization and meet the USP class VI certification, as well as US FDA regulation 21 CFR 177.1010 for food contact.

Specialty Grades

Plaskolite is the only manufacturer of complex, custom tailored formulations. Its highly flexible production processes, combined with experienced personnel, allows Plaskolite to develop innovative products tailored to meet the most demanding specifications. Light diffusing resins, custom color matching and development services available.

Characteristics

Clarity and Brilliance

- Crystal clarity, over 92% light transmittance

Impact Modified

- Up to 12 times stronger than general purpose grades

UV Grades

- Ultraviolet light transmissions can be adjusted from high UV transmittance to high UV absorption

Weatherability

- Highly resistant to ultraviolet degradation

Color Choices

- Available in a variety of transparent, translucent and opaque colors

Chemical Resistance

- Unaffected by alkalies, non-oxidizing acids and salt water

Electrical Insulation

- Excellent insulating properties, good resistance to arcing

Processability

- Wide range of uniform melt flow rates with excellent stability

Decorating

- Parts produced with OPTIX acrylic resins can be easily decorated using a variety of methods, including painting, screen printing, hot stamping and metallization

Machinability

- Drill, thread, tap, rout and other machining operations

Ease of Assembly

- Cementing and ultrasonic welding easily provide strong bonds

Dimensional Stability

- Rugged, durable, unplasticized

Applications

OPTIX is uniquely suited for many applications:

Optical

- Lenses and fibers

Automotive

- Tail lights, lenses, trim, consoles and instrument cluster panels

Lighting

- Light diffusion panels, profiles, globes and fixtures for indoor and outdoor uses

Appliances

- Dispensers, vending machines, refrigerator interior compartments and linings

Medical

- Diagnostic cuvettes, meter housings, protective caps and covers

Housewares

- Shelving, storage containers, faucet accessories and tableware

Architectural

- Block windows, carport roofing and lighting

General Information

Plaskolite is a leading manufacturer of continuous-process acrylic sheet and acrylic resin products. Founded in 1950, in Columbus, Ohio USA, Plaskolite's reputation is based on excellent customer service, quality, stability and integrity.

Plaskolite markets its line of polymethyl methacrylate (PMMA) resins under the OPTIX® trade name. OPTIX resins provide superior clarity, ease of processing and unsurpassed outdoor weathering capabilities. Offered in general purpose, impact-modified and specialty grades, OPTIX resins are uniquely suited for a variety of applications in the optical, lighting, housewares, appliance, architectural, point-of-purchase, medical and automotive industries.

Plaskolite has an experienced, highly-trained technical service support team available to provide assistance with molding and product design for both the extrusion and injection molding processes.

			<i>General-Purpose Grades</i>										<i>Impact-Modified Grades</i>						<i>Medical Grades</i>			
Properties	Test Methods	Units	CA-41	CA-51	CA-61	CA-68	CA-71	CA-75	CA-81	CA-82	CA-86	MS-983	CA-924	CA-927	CA-927 HF	CA-945	CA-990	CA-1000 I	CA-1000 E	CA-927 G	CA-927 G HF	CA-1000 IG
			Injection molding grade: Lowest heat resistance and maximum flow	Injection molding and extrusion process grade: Medium heat resistance and medium flow	Injection molding and extrusion process grade: Good heat resistance and medium flow	Injection molding and extrusion process grade: Good heat resistance and medium flow	Injection molding and extrusion process grade: High heat resistance and medium flow	Injection molding and extrusion process grade: Maximum heat resistance and medium flow	Extrusion process grade: High heat resistance and maximum molecular weight	Injection molding grade: Good heat resistance and superior mold release properties	Injection molding and extrusion process grade: High heat resistance and stiffness for all CA resins	Injection molding and extrusion process grade: High molecular weight and heat resistant	Injection molding grade: 4X the impact strength of General-Purpose Grades. Excellent light transmittance	Injection molding grade: 7X the impact strength of General-Purpose Grades. Medium flow	Injection molding grade: 7X the impact strength of General-Purpose Grades. High flow	Injection molding and extrusion process grade: 6X the impact strength of General-Purpose Grades. Good heat resistance	Injection molding and extrusion process grade: 7X the impact strength of General-Purpose Grades. Excellent surface gloss	Injection molding grade: Up to 10X the impact strength of General-Purpose Grades. Excellent transparency	Extrusion process grade: 12X the impact strength of General-Purpose Grades. Practical toughness	Injection molding grade: Medical and food use Gamma ray sterilizable Medium impact strength	Injection molding grade: High flow version of CA-927 G	Injection molding grade: Medical and food use Gamma ray sterilizable Excellent fracture toughness and recovery time
Melt Flow Rate	ASTM D 1238	g/10 min.	26.0	15.0	6.0	8.0	4.3	3.2	2.2	2.5	1.6	1.8	6.3	4.5	12.0	1.7	4.0	2.8	1.1	4.5	12.0	1.6
Specific Gravity	ASTM D 792	-	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.17	1.16	1.15	1.17	1.16	1.16	1.16	1.16	1.15	1.15
Luminous Transmittance	ASTM D 1003	%	92.0	92.0	92.0	92.0	92.0	92.0	92.0	92.0	92.0	92.0	91.6	91.3	91.3	91.6	91.3	90.8	90.7	91.0	90.0	90.8
Tensile Strength	ASTM D 638	psi	7800	8100	9600	8500	9800	10300	9700	9800	10500	10300	8470	7300	7200	8000	7300	6100	6510	7300	7200	5800
Elongation	ASTM D 638	%	2.4	2.6	3.4	2.7	3.1	4.2	4.0	3.4	-	4.2	4.6	5.3	5.3	-	5.3	37	38	25	25	40
Tensile Modulus	ASTM D 638	psi	408000	419000	440000	420000	470000	529000	500000	440000	530000	490000	472000	290000	345000	-	290000	295000	255000	290000	345000	200000
Flexural Strength	ASTM D 790	psi	11700	14800	15600	14800	15200	17600	16100	17100	17000	18000	12510	11000	7000	-	11000	8900	8890	11000	7000	6800
Heat Deflection Temp. Under Load	ASTM D 648 264 psi	°F	163	168	196	194	206	212	208	204	220	203	182	174	164	190	174	172	176	174	164	172
Vicat Softening Temp.	ASTM D 1525 Rate A	°F	194	201	216	215	225	235	225	216	-	215	233	233	226	-	233	227	227	233	226	212
Flamability	UL 94	-	94HB	94HB	-	-	94HB	94HB	94HB	94HB	-	94HB	94HB	94HB	-	-	-	94HB	94HB	-	-	94HB
Relative Thermal Index	UL-746 ABC	°C	-	85	-	-	-	90	90	90	90	90	-	-	-	-	-	-	90	-	-	-
Impact Strength Izod (Notched) Falling Weight	ASTM D 256 ASTM D 3029GB	ft.-lb/in. in.-lb.	0.3 2.0	0.3 2.0	0.3 2.0	0.3 2.0	0.3 2.0	0.3 2.0	0.3 2.0	0.3 2.0	0.3 2.0	>0.2 3.0	0.6 14.0	0.9 27.0	0.9 28.0	0.8 23.0	1.0 32.0	1.1 49.0	1.2 56.0	0.9 27.0	0.9 27.0	1.2 54.0



This brochure is a general guide for PLASKOLITE's OPTIX® acrylic resins. Actual results can vary with differences in operating conditions, thickness, color, and composition of the resins. Nothing contained herein can be construed as a warranty that PLASKOLITE's acrylic resins will perform in accordance with this brochure. Important Notice: The product information contained herein is based on tests believed to be reliable. Due care is exercised by PLASKOLITE in the selection of raw materials and in the manufacturing operations. However, the use of this product is beyond the control of the manufacturer. No guarantee or warranty expressed or implied is made as to such use or effects incidental to such use, handling, or possession of the results to be obtained. The manufacturer expressly disclaims responsibility therefore. Furthermore, nothing contained herein shall be construed as a recommendation to use any product in conflict with existing laws and/or patents covering any material or use. Anyone experiencing problems with Optix® acrylic resins should refer those questions to the PLASKOLITE Inside Sales Department at 1-800-562-8883. This manual does not constitute an offer to sell by PLASKOLITE. PLASKOLITE sells ONLY under its current Terms and Conditions of Sale, which appear on its Acknowledgements and invoices. A current copy of PLASKOLITE's Terms and Conditions of Sale will be supplied upon request or is available on its website www.plaskolite.com. The details provided are believed to be accurate at the time of publication; however, no description is a warranty that the product is suitable for any particular application or use. **THE COMPANY MAKES NO WARRANTIES, (Expressed or Implied), INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND UNDERTAKES AND ACCEPTS NO LIABILITIES, EXCEPT ONLY AS SET FORTH IN ITS CURRENT TERMS AND CONDITIONS OF SALE.**

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