

The logo for CYRO Industries, featuring the word "CYRO" in a bold, white, sans-serif font inside a black square with a white border.

CYRO Industries
379 Interpace Parkway
Parsippany, NJ 07054

Acrylite® SuPure™

ACRYLIC POLYMER

ACRYLITE® SuPure™ acrylic polymer is an exceptionally pure polymer designed for applications that demand maximum cleanliness. Our proprietary purification process starts at CYRO's manufacturing plant and extends all the way to your facility's processing point – for a total purity solution. It ensures a polymer free of dust, fines and contaminants that consistently delivers exceptional clarity and eliminates costly defects.

Ideal for medical diagnostic device applications such as diagnostic test packs, rotors and cuvettes, ACRYLITE SuPure polymer offers light weight and excellent impact strength as well as the high-quality light transmittance that the visible eye needs under varying lighting conditions. ACRYLITE SuPure polymer offers better clarity and light transmission than polycarbonate and other thermoplastic polymers.

The ACRYLITE SuPure polymer solution includes a choice of two packaging systems that offer total end-to-end purity. These delivery systems guarantee a consistently superior product which will improve overall manufacturing costs, processes, and performance – from beginning to end.



The EverPure Packaging system: our premium closed-loop system that ensures the highest level of purity.



The PureGuard Packaging system: a heat-sealed chimney liner system that effectively eliminates dust and contaminants.



Typical Physical Properties

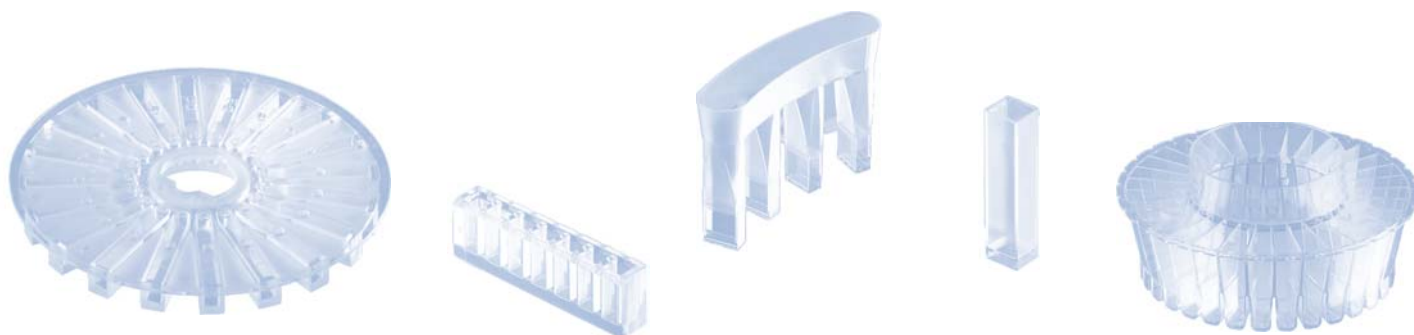
	ASTM Method	SuPure L40 500 Series
Optical Properties		
Light Transmission (%)	D-1003	92
Haze (%)	D-1003	< 1
Refractive Index	D-1003	1.49
Purity Specification (# particles > 80 microns in size)	–	0
Rheological Properties		
Melt Flow, g/10 min @ 230°C & 3.8 kg	D-1238	26.0
Mechanical Properties		
Tensile Strength, psi [MPa]	D-638	8,800 [60.7]
Tensile Modulus, x 10 ⁶ psi [GPa]	D-638	0.47 [3.2]
Tensile Elongation @ yield, (%)	D-638	2 - 4
Tensile Elongation @ break (%)	D-638	2 - 4
Flexural Strength, psi [MPa]	D-790	14,200 [97.9]
Flexural Modulus, x 10 ⁶ psi [GPa]	D-790	0.44 [3.0]
Notched Izod, ft-lb/in. [J/m] on 1/4" [6.35 mm] bar @ 23°C	D-256	0.3 [16]
Compressive Strength, psi [MPa]	D-695	13,700 [94.5]
Rockwell Hardness	D-785	84
Physical Properties		
Deflection Temperature, °F, [°C] @264 psi, annealed	D-648	165 [74]
Vicat Softening Point, °F, [°C]	D-1525	180 [82]
Specific Gravity	D-792	1.19
Water Absorption, % max	D-570	0.30
Mold Shrinkage, in/in, mm/mm	D-551	0.003 - 0.006
Coefficient of Linear Expansion in/in/°F, 32 - 212°F [mm/mm/°C, 0 - 100°C]	D-696 D-696	0.00004 [7.2E-5]

MEDICAL DIAGNOSTIC GRADE

Processing Conditions for ACRYLITE® SuPure™ L40 acrylic polymer

ACRYLITE SuPure L-40 compound should be pre-dried for three hours at 160°F in a desiccant type dryer.

Condition	Suggested Range	Starting Point
Pre-drying	3 hours @ 175°F in a desiccant type dryer for all SuPure 500 Series grades	
Temperature		
Melt, °F	420 - 460	440
Mold, °F	80 - 160	110
Injection Pressure, psi	6,000 - 15,000	8,000 (800 gauge)
Clamp Pressure	2.5 tons/in ² of projected area	–
Screw Speed, rpm		
Compression ratio		
2:1	75 - 150	100
3.5:1	60 - 130	80
Ram Speed, in/sec		
Small Gates	0.5 - 1.5	1
Large Gates	1 - 4	2
Back Pressure, psi	0 - 100	20



Material Handling for Transparent Applications

When molding material for transparent applications, careful consideration must be given to preventing the introduction of contamination from material handling or storage systems or the creation of fines from material handling.

The best means of preventing contamination is by handling the material through sealed systems that are not exposed to open air. Filters should be used for air that is used to convey the material or for air that is used in drying systems to prevent airborne contamination from being introduced into the pellet feed stream.

Fines may be created during conveying, so conveying systems must be constructed in a way that prevents pellets from hitting obstructions, flanges or impacting against sharp bends or mismatched connections in piping. Fines removal systems can be installed at the end of a conveying line to remove fines that are created in conveying. Due to the abrasive nature of acrylics, conveying piping must be stainless steel to avoid metal contamination. Where flexible hoses are employed, polyurethane hoses should be used. PVC hoses should not be used as they are easily abraded by acrylic.

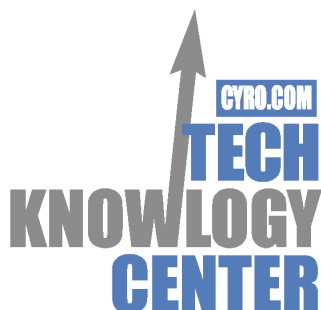
MEDICAL DIAGNOSTIC GRADE

Acrylite® SuPure™

ACRYLIC POLYMER

Product Grade - extrusion parameters

SuPure L40 500 Series Highest flow polymer. Medium heat distortion temperature. UV transmitting.



Technical Support

Visit the TechKnowlogy Center at www.cyro.com where visitors have immediate access to FAQs, technical information, tips, and hundreds of other facts about acrylic-based polymers.

CYRO Industries 379 Interpace Parkway, Parsippany, NJ 07054 800-631-5384

Web sites www.cyro.com or www.supure.com

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