

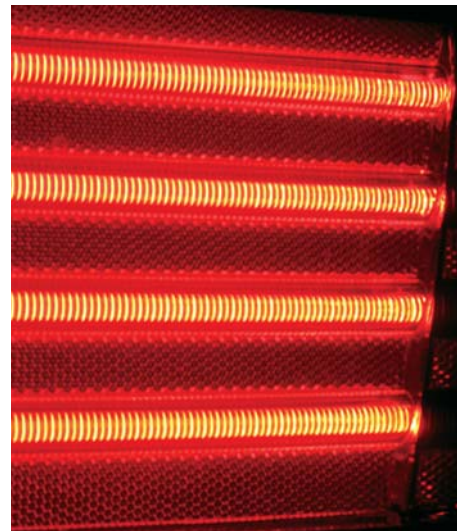
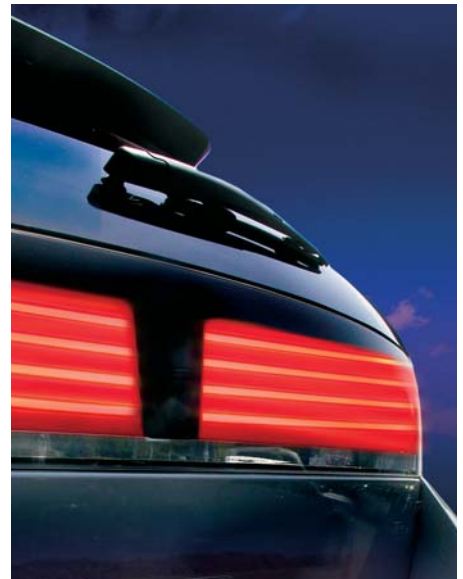
## ACRYLITE® SuPure® acrylic polymer

### Automotive Grades – Technical Data

ACRYLITE® SuPure® acrylic polymer is an exceptionally pure polymer designed for applications that demand maximum cleanliness.

Our proprietary purification process starts at Evonik 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 automotive market applications such as instrument cluster lenses, interior lighting, and telematic covers, 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.



## Automotive Grade

### ACRYLITE® SuPure® acrylic polymer

#### Typical Physical Properties

	ASTM Method	SuPure 8N 500 Series
<b>Optical Properties</b>		
Light Transmission (%)	D-1003	92
Haze (%)	D-1003	< 1
Yellowness Index	D-1003	< 1
Refractive Index	D-1003	1.49
<b>Rheological Properties</b>		
Melt Flow, g/10 min @ 230°C & 3.8 kg	D-1238	3.3
<b>Mechanical Properties</b>		
Tensile Strength, psi [MPa]	D-638	11,300 [77.9]
Tensile Modulus, x 10 <sup>6</sup> psi [GPa]	D-638	0.47 [3.2]
Tensile Elongation @ yield, (%)	D-638	4 - 6
Tensile Elongation @ break (%)	D-638	4 - 6
Flexural Strength, psi [MPa]	D-790	16,200 [111.7]
Flexural Modulus, x 10 <sup>6</sup> psi [GPa]	D-790	0.50 [3.5]
Notched Izod, ft-lb/in. [J/m] on 1/4" [6.35 mm] bar @ 23 °C	D-256	0.3 [16]
Rockwell Hardness, M scale	D-785	95
<b>Physical Properties</b>		
Deflection Temperature, °F, [°C] @264 psi, annealed	D-648	212 [100]
Vicat Softening Point, °F, [°C] (5 N @50 °C/hr)	D-1525	226 [108]
Specific Gravity	D-792	1.19
Moisture Absorption	D-570	0.30%
Mold Shrinkage, in/in [mm/mm]	D-551	0.004-0.007
Coefficient of Linear Expansion in/in/°F, 32 °F – 212 °F (mm/mm/°C, 0 – 100 °C)	D-696	0.00004 0.000072
Pellet Configuration	–	Cylindrical



**Acrylite® SuPure®**  
ACRYLIC POLYMER

**ACRYLITE SuPure 8N grade, 500 series, offers:**

Maximum service temperature., high molecular weight and UV absorption.

Other grades are available upon request.

# Automotive Grade

## ACRYLITE® SuPure® acrylic polymer

### Recommended Processing Conditions

#### SuPure 8N 500 Series

Condition	Suggested Range	Starting Point
<b>Melt Flow Rate</b> @230 °C & 3.8 Kg.	<b>3.3 g/10 min</b>	
<b>Pre-drying</b>	3 – 4 hours @175 °F in a desiccant type dryer for all SuPure 500 Series grades	
<b>Temperature</b>		
Feed Section, °F	410 - 430	420
Rear Section, °F	420 - 440	430
Center Section, °F	430 - 450	440
Front Section, °F	460 - 480	470
Nozzle, °F	465 - 485	475
Melt, °F	465 - 480	470
Mold, °F	100 - 175	120
<b>Injection Pressure, psi</b>	6,000 - 15,000	8,000 (800 gauge)
<b>Clamp Pressure</b>	2.5 tons/in <sup>2</sup> of projected area for flow length/wall thickness < 100/1 5.0 tons/in <sup>2</sup> of projected area for flow length/wall thickness > 100/1	
<b>Screw Speed, rpm</b>		
Compression ratio		
2:1	75 - 150	100
3.5:1	60 - 130	80
<b>Ram Speed, in/sec</b>		
Small Gates	0.5 - 1.5	1
Large Gates	1 - 4	2
<b>Back Pressure, psi</b>	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.

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.

## Technical Support

Visit the TechKnowlogy Center at [www.acrylite-polymers.com](http://www.acrylite-polymers.com) where visitors have immediate access to FAQs, technical information, tips, and hundreds of other facts about ACRYLITE acrylic products.

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**Evonik. Power to create.**