

## Technical Information



# ALTUGLAS™ SG7

## Overview

**OVERVIEW :** ALTUGLAS™ medical resins grades provide very good optical transparency combined with outstanding bonding characteristics, excellent scratch resistance and sterilization recovery. In addition, these resins offer ease of processing and very good flow properties, allowing for a wide range of manufacturing processes.

**DESCRIPTION :** ALTUGLAS™ medical resins provide excellent ethyl/isopropyl alcohol (IPA) and lipid resistance. In addition, the inherent water-white clarity, transparency and ease processing of ALTUGLAS™ grades make them suitable for medical devices and diagnostic lab-ware applications:

ALTUGLAS™ SG-7 impact-modified resins is designed specifically for the medical market. This resin can meet some of the toughest device requirements in terms of processing, sterilization, clarity, performance and regulatory compliance. It is specifically engineered for intricate and multi-compartment parts, making them excellent for applications such as dialysis cassettes, IV components, drug delivery systems and canisters. Molded medical devices using this resin also offer good resistance to lipids, moisture, most inorganic aqueous solutions, saline solutions, mineral oil, and limited exposure to IPA in water.

### APPLICATIONS :

Dialysis and other blood therapy systems  
IV components and drug delivery  
Devices  
Fluid control valves  
Luers  
Connectors  
Spikes  
Y-joints  
Filter housings  
Blood separators  
Cardiopulmonary housings  
Respiratory canisters  
Yankauer suction apparatus  
In vitro diagnostic systems

| Physical                                 | Nominal Value (English) | Nominal Value (SI)     | Test Method  |
|------------------------------------------|-------------------------|------------------------|--------------|
| Density                                  | 1.17 g/cm <sup>3</sup>  | 1.17 g/cm <sup>3</sup> | ISO 1183     |
| Melt Mass-Flow Rate (MFR) (230°C/3.8 kg) | 13 g/10 min             | 13 g/10 min            | ISO 1133     |
| Molding Shrinkage - Flow                 | 2.0E-3 to 6.0E-3 in/in  | 0.20 to 0.60 %         | ASTM D955    |
| Water Absorption                         |                         |                        | ISO 62       |
| Equilibrium, 73°F (23°C), 50% RH         | 0.33 %                  | 0.33 %                 |              |
| Mechanical                               | Nominal Value (English) | Nominal Value (SI)     | Test Method  |
| Tensile Stress                           |                         |                        | ISO 527-2/50 |
| Yield, 73°F (23°C)                       | 8560 psi                | 59.0 MPa               |              |
| Break, 73°F (23°C)                       | 6960 psi                | 48.0 MPa               |              |
| Tensile Strain                           |                         |                        | ISO 527-2/50 |
| Yield, 73°F (23°C)                       | 4.0 %                   | 4.0 %                  |              |
| Break, 73°F (23°C)                       | 33 %                    | 33 %                   |              |
| Flexural Modulus (73°F (23°C))           | 319000 psi              | 2200 MPa               | ISO 178      |
| Flexural Stress (73°F (23°C))            | 12000 psi               | 83.0 MPa               | ISO 178      |

| <b>Impact</b>                                                    | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b> |
|------------------------------------------------------------------|--------------------------------|---------------------------|--------------------|
| Charpy Notched Impact Strength (73°F (23°C))                     | 1.4 ft-lb/in <sup>2</sup>      | 3.0 kJ/m <sup>2</sup>     | ISO 179/1eA        |
| Charpy Unnotched Impact Strength<br>73°F (23°C)                  | 19 ft-lb/in <sup>2</sup>       | 40 kJ/m <sup>2</sup>      | ISO 179/1eU        |
| Notched Izod Impact Strength (73°F (23°C))                       | 1.5 ft-lb/in <sup>2</sup>      | 3.2 kJ/m <sup>2</sup>     | ISO 180/1A         |
| <b>Hardness</b>                                                  | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b> |
| Rockwell Hardness (M-Scale)                                      | 64                             | 64                        | ASTM D785          |
| <b>Thermal</b>                                                   | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b> |
| Deflection Temperature Under Load<br>264 psi (1.8 MPa), Annealed | 181 °F                         | 83.0 °C                   | ISO 75-2/A         |
| Vicat Softening Temperature                                      | 194 °F                         | 90.0 °C                   | ISO 306/B50        |
| CLTE - Flow (-22 to 73°F (-30 to 23°C))                          | 4.4E-5 in/in/°F                | 8.0E-5 cm/cm/°C           | ASTM D696          |
| <b>Flammability</b>                                              | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b> |
| Flame Rating                                                     | HB                             | HB                        | UL 94              |
| <b>Optical</b>                                                   | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b> |
| Refractive Index <sup>1</sup>                                    | 1.490                          | 1.490                     | ISO 489            |
| Light Transmittance                                              | 92.0 %                         | 92.0 %                    | ASTM D1003         |
| Haze                                                             | 1.50 %                         | 1.50 %                    | ASTM D1003         |
| <b>Injection</b>                                                 | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> |                    |
| Drying Temperature                                               | 167 to 176 °F                  | 75 to 80 °C               |                    |
| Drying Time                                                      | 4.0 to 6.0 hr                  | 4.0 to 6.0 hr             |                    |
| Rear Temperature                                                 | 428 to 464 °F                  | 220 to 240 °C             |                    |
| Middle Temperature                                               | 446 to 482 °F                  | 230 to 250 °C             |                    |
| Front Temperature                                                | 464 to 500 °F                  | 240 to 260 °C             |                    |
| Nozzle Temperature                                               | 464 to 500 °F                  | 240 to 260 °C             |                    |
| Processing (Melt) Temp                                           | 464 to 500 °F                  | 240 to 260 °C             |                    |
| Mold Temperature                                                 | 140 to 158 °F                  | 60 to 70 °C               |                    |

#### Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

<sup>1</sup> Method B

## Technical Information



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