

# Veradel® A-301

## polyethersulfone

Veradel® A-301 is a medium melt flow general purpose amorphous PESU resin for injection molding. This transparent grade offers high heat deflection temperature, excellent toughness and dimensional stability and resistance to mineral acids. Other desirable properties include thermal

stability, creep resistance and inherent flame resistance. Veradel® A-301 is FDA compliant and is approved for direct food contact. This grade was formerly marketed as Radel® A PESU.

- Natural: Veradel® A-301 NT
- Black: Veradel® A-301 BK 184

### General

|                           |   |  |
|---------------------------|---|--|
| Material Status           | • Commercial: Active  |  |
| Availability              | • Africa & Middle East<br>• Asia Pacific<br>• Europe  | • Latin America<br>• North America   |
| Features                  | • Acid Resistant<br>• Chemical Resistant<br>• Creep Resistant<br>• Flame Retardant<br>• Food Contact Acceptable<br>• General Purpose<br>• Good Adhesion<br>• Good Dimensional Stability | • Good Thermal Stability<br>• Good Toughness<br>• High Heat Resistance<br>• High Tensile Strength<br>• Hydrolysis Resistant<br>• Medium Flow<br>• Medium Molecular Weight<br>• Medium Rigidity |
| Uses                      | • Appliance Components<br>• Appliances<br>• Automotive Electronics<br>• Batteries<br>• Business Equipment   | • Electrical Parts<br>• Electrical/Electronic Applications<br>• Food Service Applications<br>• Industrial Applications<br>• Microwave Cookware   |
| Agency Ratings            | • FDA Food Contact  | • NSF STD-51 <sup>1</sup>  |
| RoHS Compliance           | • RoHS Compliant  |  |
| Automotive Specifications | • ASTM D6394 SP0213   |  |
| Appearance                | • Black<br>• Colors Available   | • Transparent - Slight Yellow  |
| Forms                     | • Pellets   |  |
| Processing Method         | • Compounding   | • Injection Molding  |

| Physical                                  | Typical Value | Unit     | Test method |
|---|---------------|----------|-------------|
| Density / Specific Gravity                | 1.37          |          | ASTM D792   |
| Melt Mass-Flow Rate (MFR) (380°C/2.16 kg) | 30            | g/10 min | ASTM D1238  |
| Molding Shrinkage - Flow                  | 0.60          | %        | ASTM D955   |
| Water Absorption (24 hr)                  | 0.50          | %        | ASTM D570   |
| Water Absorption - 30 days                | 1.9           | %        | ASTM D570   |



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| Mechanical                 | Typical Value | Unit | Test method |
|----------------------------|---------------|------|-------------|
| Tensile Modulus            | 2690          | MPa  | ASTM D638   |
| Tensile Strength           | 88.9          | MPa  | ASTM D638   |
| Tensile Elongation (Yield) | 6.5           | %    | ASTM D638   |
| Flexural Modulus           | 2620          | MPa  | ASTM D790   |
| Flexural Strength          | 125           | MPa  | ASTM D790   |

| Impact              | Typical Value | Unit | Test method |
|---------------------|---------------|------|-------------|
| Notched Izod Impact | 53            | J/m  | ASTM D256   |

| Thermal  | Typical Value | Unit     | Test method |
|--|---------------|----------|-------------|
| Deflection Temperature Under Load<br>1.8 MPa, Unannealed | 200           | °C       | ASTM D648   |
| CLTE - Flow  | 5.2E-5        | cm/cm/°C | ASTM D696   |

| Electrical          | Typical Value | Unit    | Test method |
|---------------------|---------------|---------|-------------|
| Volume Resistivity  | 1.7E+15       | ohms·cm | ASTM D257   |
| Dielectric Strength | 15            | kV/mm   | ASTM D149   |
| Dielectric Constant |               |         | ASTM D150   |
| 60 Hz               | 3.51          |         |             |
| 1 kHz               | 3.50          |         |             |
| 1 MHz               | 3.54          |         |             |
| Dissipation Factor  |               |         | ASTM D150   |
| 60 Hz               | 1.7E-3        |         |             |
| 1 kHz               | 2.2E-3        |         |             |
| 1 MHz               | 5.6E-3        |         |             |

| Flammability            | Typical Value | Unit | Test method |
|-------------------------|---------------|------|-------------|
| Flame Rating            |               |      | UL 94       |
| 0.8 mm, NT              | V-0           |      |             |
| 1.5 mm, BK <sup>2</sup> | V-0           |      |             |

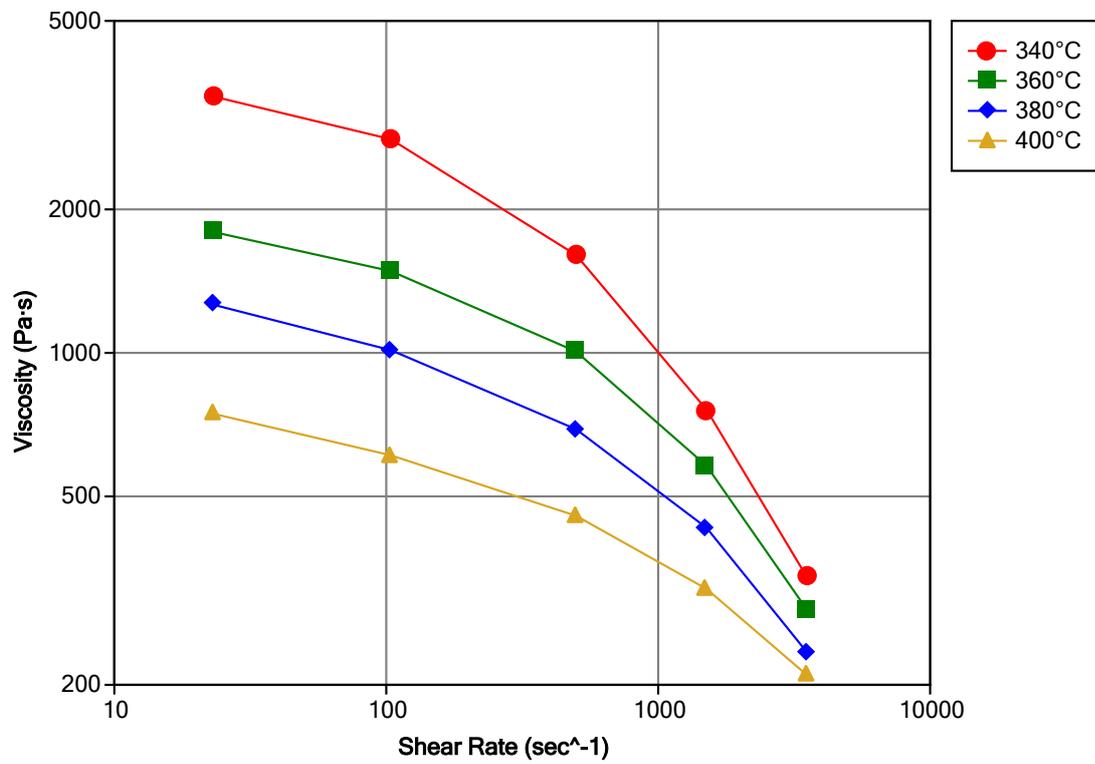
  

| Injection               | Typical Value | Unit |
|-------------------------|---------------|------|
| Drying Temperature      | 175           | °C   |
| Drying Time             | 2.5           | hr   |
| Processing (Melt) Temp  | 345 to 385    | °C   |
| Mold Temperature        | 149           | °C   |
| Screw Compression Ratio | 2.2:1.0       |      |



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## Viscosity vs. Shear Rate (ISO 11403)



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### Notes

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Typical properties: these are not to be construed as specifications.

<sup>1</sup> NT only

<sup>2</sup> These flammability ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

