# Veradel® A-201

### Polyethersulfone

### Solvay Specialty Polymers

### Message:

Veradel® A-201 is a low melt flow grade of polyethersulfone (PESU). It is transparent and offers high heat deflection temperatures, excellent toughness and dimensional stability, and resistance to steam, boiling water and mineral acids. Other desirable properties include thermal stability, creep resistance and inherent flame resistance.

Veradel® A-201 is A-301 are FDA compliant and therefore approved for direct food contact.

Veradel® A-201 can be processed by either extrusion or injection molding. A medium flow grade is available as Veradel® A-301. It is suggested for general purpose injection molding.

This grade was formerly marketed as Radel® A PESU

Natural: Veradel® A-201 NT

| General Information |                                    |  |  |  |
|---------------------|------------------------------------|--|--|--|
| UL YellowCard       | E36098-628756                      |  |  |  |
| Features            | Acid Resistant                     |  |  |  |
|                     | Flame Retardant                    |  |  |  |
|                     | Food Contact Acceptable            |  |  |  |
|                     | General Purpose                    |  |  |  |
|                     | Good Adhesion                      |  |  |  |
|                     | Good Chemical Resistance           |  |  |  |
|                     | Good Creep Resistance              |  |  |  |
|                     | Good Dimensional Stability         |  |  |  |
|                     | Good Thermal Stability             |  |  |  |
|                     | Good Toughness                     |  |  |  |
|                     | High Heat Resistance               |  |  |  |
|                     | High Tensile Strength              |  |  |  |
|                     | Hydrolysis Resistant               |  |  |  |
|                     | Medium Flow                        |  |  |  |
|                     | Medium Molecular Weight            |  |  |  |
|                     | Medium Rigidity                    |  |  |  |
|                     |                                    |  |  |  |
| Uses                | Appliance Components               |  |  |  |
|                     | Appliances                         |  |  |  |
|                     | Automotive Electronics             |  |  |  |
|                     | Batteries                          |  |  |  |
|                     | Business Equipment                 |  |  |  |
|                     | Electrical Parts                   |  |  |  |
|                     | Electrical/Electronic Applications |  |  |  |
|                     | Food Service Applications          |  |  |  |
|                     | Industrial Applications            |  |  |  |
|                     | Microwave Cookware                 |  |  |  |

| Agency Ratings  | FDA Food Contact, Unspe                | cified Rating |             |  |
|---|--|---------------|-------------|--|
| RoHS Compliance   | RoHS Compliant                         |               |             |  |
| Appearance  | Transparent - Slight Yellow            |               |             |  |
| Forms   | Pellets                                |               |             |  |
| Processing Method                                       | Compounding                            |               |             |  |
|   | Extrusion                              |               |             |  |
|   | Injection Molding                      |               |             |  |
|   |  |               |             |  |
| Multi-Point Data  | Viscosity vs. Shear Rate (ISO 11403-2) |               |             |  |
| Physical  | Nominal Value                          | Unit          | Test Method |  |
| Specific Gravity  | 1.37                                   | g/cm³         | ASTM D792   |  |
| Melt Mass-Flow Rate (MFR) (380°C/2.16 kg)               | 20                                     | 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   |  |
| Mechanical  | Nominal 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  | Nominal Value                          | Unit          | Test Method |  |
| Notched Izod Impact                                     | 53                                     | J/m           | ASTM D256   |  |
| Thermal   | Nominal Value                          | Unit          | Test Method |  |
| Deflection Temperature Under Load (1.8 MPa, Unannealed) | 3 200                                  | °C            | ASTM D648   |  |
| CLTE - Flow   | 5.2E-5                                 | cm/cm/°C      | ASTM D696   |  |
| Electrical  | Nominal 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  | Nominal Value                          | Unit          | Test Method |  |
| Flame Rating <sup>1</sup> (1.50 mm)                     | V-0                                    |               | UL 94       |  |
| Injection   | Nominal Value                          | Unit          |             |  |

| Drying Temperature      | 175  | °C   |  |
|-------------------------|--|------|--|
| Drying Time             | 2.5  | hr   |  |
| Processing (Melt) Temp  | 345 to 385   | °C   |  |
| Mold Temperature        | 135  | °C   |  |
| Screw Compression Ratio | 2.2:1.0  |      |  |
| Extrusion               | Nominal Value  | Unit |  |
| Drying Temperature      | 175  | °C   |  |
| Drying Time             | 2.5  | hr   |  |
| Cylinder Zone 1 Temp.   | 335 to 390   | °C   |  |
| Cylinder Zone 2 Temp.   | 335 to 390   | °C   |  |
| Cylinder Zone 3 Temp.   | 335 to 390   | °C   |  |
| Cylinder Zone 4 Temp.   | 335 to 390   | °C   |  |
| Cylinder Zone 5 Temp.   | 335 to 390   | °C   |  |
| Adapter Temperature     | 325 to 370   | °C   |  |
| Melt Temperature        | 345 to 390   | °C   |  |
| Die Temperature         | 325 to 370   | °C   |  |
| NOTE                    |  |      |  |
|                         | These flammability ratings are not intended to reflect hazards |      |  |

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

1.

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