

# Ultraform® S 2320 003 UNC Q600

Acetal (POM) Copolymer

BASF Corporation

## Message:

Ultraform S 2320 003 UNC Q600 is an easy flowing and rapidly freezing injection molding POM grade. Contains a mold release agent.

### Applications

Typical applications include difficult, thin-walled parts.

| General Information                         |                                              |           |                     |
|---------------------------------------------|----------------------------------------------|-----------|---------------------|
| UL YellowCard                               | E36632-531689                                |           |                     |
| Additive                                    | Mold Release                                 |           |                     |
| Features                                    | Copolymer                                    |           |                     |
|                                             | Good Flow                                    |           |                     |
|                                             | Good Mold Release                            |           |                     |
| Uses                                        | Thin-walled Parts                            |           |                     |
| Agency Ratings                              | EC 1907/2006 (REACH)                         |           |                     |
| RoHS Compliance                             | RoHS Compliant                               |           |                     |
| Forms                                       | Pellets                                      |           |                     |
| Processing Method                           | Injection Molding                            |           |                     |
| Multi-Point Data                            | Isochronous Stress vs. Strain (ISO 11403-1)  |           |                     |
|                                             | Isothermal Stress vs. Strain (ISO 11403-1)   |           |                     |
|                                             | Secant Modulus vs. Strain (ISO 11403-1)      |           |                     |
|                                             | Shear Modulus vs. Temperature (ISO 11403-1)  |           |                     |
|                                             | Specific Heat vs. Temperature (ISO 11403-2)  |           |                     |
|                                             | Specific Volume vs Temperature (ISO 11403-2) |           |                     |
|                                             | Viscosity vs. Shear Rate (ISO 11403-2)       |           |                     |
|                                             |                                              |           |                     |
| Physical                                    | Nominal Value                                | Unit      | Test Method         |
| Specific Gravity                            | 1.40                                         | g/cm³     | ASTM D792, ISO 1183 |
| Melt Volume-Flow Rate (MVR) (190°C/2.16 kg) | 11.0                                         | cm³/10min | ISO 1133            |
| Molding Shrinkage                           |                                              |           |                     |
| Flow : 3.18 mm                              | 2.0                                          | %         |                     |
| Across Flow                                 | 2.1                                          | %         | ISO 294-4           |
| Flow                                        | 2.1                                          | %         | ISO 294-4           |
| Water Absorption                            |                                              |           |                     |
| Saturation                                  | 0.80                                         | %         | ASTM D570           |
| Saturation, 23°C                            | 0.80                                         | %         | ISO 62              |
| Equilibrium, 50% RH                         | 0.20                                         | %         | ASTM D570           |
| Equilibrium, 23°C, 50% RH                   | 0.20                                         | %         | ISO 62              |

| Mechanical                             | Nominal Value | Unit              | Test Method          |
|----------------------------------------|---------------|-------------------|----------------------|
| Tensile Modulus (23°C)                 | 2700          | MPa               | ISO 527-2            |
| Tensile Strength                       |               |                   |                      |
| Yield, 23°C                            | 65.0          | MPa               | ASTM D638, ISO 527-2 |
| Yield, -40°C                           | 93.0          | MPa               | ISO 527-2            |
| Yield, 80°C                            | 33.0          | MPa               | ISO 527-2            |
| Tensile Elongation (Yield, 23°C)       | 9.0           | %                 | ASTM D638, ISO 527-2 |
| Nominal Tensile Strain at Break (23°C) | 28            | %                 | ISO 527-2            |
| Tensile Creep Modulus                  |               |                   | ISO 899-1            |
| 1 hr                                   | 1900          | MPa               |                      |
| 1000 hr                                | 1300          | MPa               |                      |
| Flexural Modulus (23°C)                | 2620          | MPa               | ASTM D790            |
| Impact                                 | Nominal Value | Unit              | Test Method          |
| Charpy Notched Impact Strength         |               |                   | ISO 179              |
| -30°C                                  | 5.0           | kJ/m <sup>2</sup> |                      |
| 23°C                                   | 5.5           | kJ/m <sup>2</sup> |                      |
| Charpy Unnotched Impact Strength       |               |                   | ISO 179              |
| -30°C                                  | 170           | kJ/m <sup>2</sup> |                      |
| 23°C                                   | 180           | kJ/m <sup>2</sup> |                      |
| Notched Izod Impact                    |               |                   | ASTM D256            |
| -40°C                                  | 50            | J/m               |                      |
| 23°C                                   | 60            | J/m               |                      |
| Thermal                                | Nominal Value | Unit              | Test Method          |
| Deflection Temperature Under Load      |               |                   |                      |
| 0.45 MPa, Unannealed                   | 160           | °C                | ASTM D648            |
| 1.8 MPa, Unannealed                    | 110           | °C                | ASTM D648            |
| 1.8 MPa, Unannealed                    | 100           | °C                | ISO 75-2/A           |
| Peak Melting Temperature               | 167           | °C                | ASTM D3418, ISO 3146 |
| CLTE - Flow                            |               |                   |                      |
| --                                     | 6.0E-5        | cm/cm/°C          | ASTM E831            |
| --                                     | 1.1E-4        | cm/cm/°C          |                      |
| Electrical                             | Nominal Value | Unit              | Test Method          |
| Surface Resistivity <sup>1</sup>       | 1.0E+13       | ohms              | ASTM D257, IEC 60093 |
| Volume Resistivity                     |               |                   |                      |
| 1.50 mm                                | 1.0E+13       | ohms · cm         | ASTM D257            |
| --                                     | 1.0E+13       | ohms · cm         | IEC 60093            |
| Electric Strength                      | 40            | kV/mm             | IEC 60243-1          |
| Dielectric Constant                    |               |                   | IEC 60250            |
| 100 Hz                                 | 3.80          |                   |                      |
| 1 MHz                                  | 3.80          |                   |                      |
| Dissipation Factor                     |               |                   | IEC 60250            |
| 100 Hz                                 | 1.0E-3        |                   |                      |

| 1 MHz                      | 5.0E-3        |      |           |
|----------------------------|---------------|------|-----------|
| Comparative Tracking Index | 600           | V    | IEC 60112 |
| Injection                  | Nominal Value | Unit |           |
| Drying Temperature         | 80.0 to 110   | °C   |           |
| Drying Time                | 2.0 to 4.0    | hr   |           |
| Suggested Max Moisture     | 0.15          | %    |           |
| Processing (Melt) Temp     | 190 to 230    | °C   |           |
| Mold Temperature           | 60.0 to 120   | °C   |           |
| Injection Pressure         | 3.50 to 7.00  | MPa  |           |
| NOTE                       |               |      |           |
| 1.                         | 1.5 mm        |      |           |

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