

# Edistir® N 3380

General Purpose Polystyrene

Versalis S.p.A.

## Message:

High molecular weight general purpose polystyrene combining high heat resistance and good mechanical strength. N 3380 belongs to Edistr® GPPS third generation.

Suitable for direct gassing extrusion, for biaxially oriented films and sheets, for glass clear sheets and panels.

Also used in injection moulding of medium-thickness wall transparent parts.

Thanks to N 3380, injected items will be more brilliant and neutral coloured in line with more sophisticated market needs.

The new colour will be not appreciable in covered applications.

Designation: Thermoplastics ISO 1622-PS,G,105-03.

## Applications

Suitable for foamed packaging trays, clear panels for shower cabins, insulation boards (XPS), OPS for labels and packaging, moulded fridge clear components, Petri dishes and technical parts.

| General Information                      |                              |                   |             |
|------------------------------------------|------------------------------|-------------------|-------------|
| Features                                 | High molecular weight        |                   |             |
|                                          | Foamable property            |                   |             |
|                                          | Heat resistance, high        |                   |             |
|                                          | Compliance of Food Exposure  |                   |             |
| Uses                                     | Packaging                    |                   |             |
|                                          | Label                        |                   |             |
|                                          | Foamed insulation board      |                   |             |
|                                          | Engineering accessories      |                   |             |
|                                          | Sheet                        |                   |             |
| Agency Ratings                           | Europe 10/1/2011 12:00:00 AM |                   |             |
| Processing Method                        | Extrusion                    |                   |             |
|                                          | Sheet extrusion molding      |                   |             |
|                                          | Injection molding            |                   |             |
| Physical                                 | Nominal Value                | Unit              | Test Method |
| Density                                  | 1.05                         | g/cm <sup>3</sup> | ISO 1183    |
| Apparent Density                         | 0.65                         | g/cm <sup>3</sup> | ISO 60      |
| Melt Mass-Flow Rate (MFR) (200°C/5.0 kg) | 2.0                          | g/10 min          | ISO 1133    |
| Molding Shrinkage                        | 0.30 - 0.60                  | %                 | ISO 294-4   |
| Water Absorption (23°C, 24 hr)           | < 0.10                       | %                 | ISO 62      |
| Hardness                                 | Nominal Value                | Unit              | Test Method |
| Rockwell Hardness (M-Scale)              | 80                           |                   | ISO 2039-2  |
| Mechanical                               | Nominal Value                | Unit              | Test Method |
| Tensile Modulus                          | 3350                         | MPa               | ISO 527-2/1 |
| Tensile Stress (Break)                   | 49.0                         | MPa               | ISO 527-2/5 |

|                                                                    |                                     |                   |                |
|--------------------------------------------------------------------|-------------------------------------|-------------------|----------------|
| Tensile Strain (Break)                                             | 2.5                                 | %                 | ISO 527-2/5    |
| Flexural Stress <sup>1</sup>                                       | 91.0                                | MPa               | ISO 178        |
| Impact                                                             | Nominal Value                       | Unit              | Test Method    |
| Notched Izod Impact                                                |                                     |                   | ISO 180/1A     |
| -30°C                                                              | 1.7                                 | kJ/m <sup>2</sup> | ISO 180/1A     |
| 12°C                                                               | 1.9                                 | kJ/m <sup>2</sup> | ISO 180/1A     |
| Thermal                                                            | Nominal Value                       | Unit              | Test Method    |
| Deflection Temperature Under Load <sup>2</sup> (1.8 MPa, Annealed) | 95.0                                | °C                | ASTM D648      |
| Vicat Softening Temperature                                        |                                     |                   |                |
| --                                                                 | 106                                 | °C                | ISO 306/A50    |
| --                                                                 | 101                                 | °C                | ISO 306/B50    |
| CLTE - Flow                                                        | 7.0E-5                              | cm/cm/°C          | ASTM D696      |
| Thermal Conductivity                                               | 0.17                                | W/m/K             | ISO 8302       |
| Electrical                                                         | Nominal Value                       | Unit              | Test Method    |
| Surface Resistivity                                                | > 1.5E+15                           | ohms              | IEC 60093      |
| Volume Resistivity                                                 | > 7.0E+15                           | ohms·cm           | IEC 60093      |
| Dielectric Strength                                                | 70                                  | kV/mm             | IEC 60243-1    |
| Relative Permittivity (50 Hz)                                      | 2.50                                |                   | IEC 60250      |
| Dissipation Factor (50 Hz)                                         | 2.0E-4                              |                   | IEC 60250      |
| Comparative Tracking Index (Solution A)                            | 425                                 | V                 | IEC 60112      |
| Flammability                                                       | Nominal Value                       | Unit              | Test Method    |
| Flame Rating (1.5 mm, ALL)                                         | HB                                  |                   | UL 94          |
| Glow Wire Ignition Temperature (1.6 mm)                            | 650                                 | °C                | IEC 60695-2-13 |
| Additional Information                                             | Nominal Value                       |                   |                |
| Designation                                                        | Thermoplastics ISO 1622-PS,G,105-03 |                   |                |
| Injection                                                          | Nominal Value                       | Unit              |                |
| Processing (Melt) Temp                                             | 220 - 270                           | °C                |                |
| Mold Temperature                                                   | 20 - 60                             | °C                |                |
| Extrusion                                                          | Nominal Value                       | Unit              |                |
| Melt Temperature                                                   | 210 - 240                           | °C                |                |
| NOTE                                                               |                                     |                   |                |
| 1.                                                                 | 2.0 mm/min                          |                   |                |
| 2.                                                                 | 120°C/hr                            |                   |                |

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