

**Product Information**

Nov 2019

# **Ultrason® E 3010 MR** **Polyethersulfone (PESU)**


**Product Description**

Ultrason E 3010 MR is an unreinforced, higher viscosity injection molding and extrusion PESU grade with improved toughness and chemical resistance (stress crack resistance).

| PHYSICAL                                             | ISO Test Method | Property Value |
|------------------------------------------------------|-----------------|----------------|
| Density, g/cm <sup>3</sup>                           | 1183            | 1.37           |
| Mold Shrinkage, parallel, %                          | 294-4           | 0.85           |
| Mold Shrinkage, normal, %                            | 294-4           | 0.9            |
| Moisture, %                                          | 62              |                |
| (50% RH)                                             |                 | 0.8            |
| (Saturation)                                         |                 | 2.2            |
| RHEOLOGICAL                                          | ISO Test Method | Property Value |
| Melt Volume Rate (360 C/10 Kg), cc/10min.            | 1133            | 35             |
| MECHANICAL                                           | ISO Test Method | Property Value |
| Tensile Modulus, MPa                                 | 527             |                |
| 23C                                                  |                 | 2,650          |
| Tensile stress at yield, MPa                         | 527             |                |
| 23C                                                  |                 | 85             |
| Tensile strain at yield, %                           | 527             |                |
| 23C                                                  |                 | 6.9            |
| IMPACT                                               | ISO Test Method | Property Value |
| Izod Notched Impact, kJ/m <sup>2</sup>               | 180             |                |
| -30C                                                 |                 | 8              |
| 23C                                                  |                 | 8              |
| Charpy Notched, kJ/m <sup>2</sup>                    | 179             |                |
| -30C                                                 |                 | 8              |
| 23C                                                  |                 | 8              |
| Charpy Unnotched, kJ/m <sup>2</sup>                  | 179             |                |
| -30C                                                 |                 | N              |
| 23C                                                  |                 | N              |
| THERMAL                                              | ISO Test Method | Property Value |
| HDT A, C                                             | 75              | 207            |
| Coef. of Linear Thermal Expansion, Parallel, mm/mm C |                 | 0.52 X10-4     |
| ELECTRICAL                                           | ISO Test Method | Property Value |
| Comparative Tracking Index                           | IEC 60112       | 100            |
| Volume Resistivity (Ohm-m)                           | IEC 60093       | >1E13          |
| Surface Resistivity (Ohm)                            | IEC 60093       | >1E15          |
| Dielectric Constant (100 Hz)                         | IEC 60250       | 3.9            |
| Dielectric Constant (1 MHz)                          | IEC 60250       | 3.8            |
| Dissipation Factor (100 Hz), E-4                     | IEC 60250       | 17             |
| Dissipation Factor (1 MHz), E-4                      | IEC 60250       | 140            |
| Dielectric Strength, KV/mm                           | IEC 60243-1     | 34             |

BASF Corporation  
Engineering Plastics  
1609 Biddle Avenue  
Wyandotte, MI 48192

General Information: 800-BC-RESIN  
Technical Assistance: 800-527-TECH (734-324-5150)  
Web address: <http://www.plasticsportal.com/usa>

## Ultrason® E 3010 MR



| UL RATINGS                        | UL Test Method | Property Value |
|-----------------------------------|----------------|----------------|
| Flammability Rating, 1.5mm        | UL94           | V-0            |
| Relative Temperature Index, 1.5mm | UL746B         |                |
| Mechanical w/o Impact, C          |                | 190            |
| Mechanical w/ Impact, C           |                | 180            |
| Electrical, C                     |                | 180            |
| Flammability Rating, 3.0mm        | UL94           | V-0            |
| Relative Temperature Index, 3.0mm | UL746B         |                |
| Mechanical w/o Impact, C          |                | 190            |
| Mechanical w/ Impact, C           |                | 180            |
| Electrical, C                     |                | 180            |

### Processing Guidelines

#### Material Handling

Max. Water content: 0.02%

Ultrason pellets can absorb moisture very rapidly and must be dried before processing. A vacuum or dry air oven operating at 130-150C (266-302F) is recommended. Circulating air ovens are unsuitable. Drying time is dependent on moisture level, however the materials must be dried at least 4 hours. Further information concerning safe handling procedures can be obtained from the Safety Data Sheet. Alternatively, please contact your BASF representative.

#### Typical Profile

Melt Temperature 340-390C (644-734F)

Mold Temperature 140-180C (284-356F)

Injection and Packing Pressure 35-125 bar (500-1500 psi)

#### Mold Temperatures

Injection pressure controls the filling of the part and should be applied for 90% of ram travel. Packing pressure affects the final part and can be used effectively in controlling sink marks and shrinkage. It should be applied and maintained until the gate area is completely frozen off.

Back pressure can be utilized to provide uniform melt consistency and reduce trapped air and gas.

#### Pressures

Fast fill rates are recommended to ensure uniform melt delivery to the cavity and prevent premature freezing. Surface appearance is directly affected by injection rate.

### Note

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