

# Ultrason<sup>®</sup> E 2010 G4

## Polyether Sulfone (PES)

### Product Description

Ultrason E 2010 G4 is a 20% glass reinforced, medium viscosity injection molding PES grade with high rigidity and strength.

### Applications

Typical applications include circuit breaker parts, lamp holders, heat shields, impellers, and printer cartridges.

PHYSICAL	ISO Test Method	Property Value
Density, g/cm	1183	1.50
Mold Shrinkage, parallel, %	294-4	0.36
Mold Shrinkage, normal, %	294-4	0.61
Moisture, %	62	
(50% RH)		0.6
(Saturation)		1.6
RHEOLOGICAL	ISO Test Method	Property Value
Melt Volume Rate (360 C/10 Kg), cc/10min.	1133	29
MECHANICAL	ISO Test Method	Property Value
Tensile Modulus, MPa	527	
23C		7,500
Tensile stress at break, MPa	527	
23C		125
Tensile strain at break, %	527	
23C		2.5
Tensile Creep Modulus (1000h), MPa	899	5,600
IMPACT	ISO Test Method	Property Value
Izod Notched Impact, kJ/m <sup>2</sup>	180	
23C		6.5
Charpy Notched, kJ/m <sup>2</sup>	179	
23C		6.5
Charpy Unnotched, kJ/m <sup>2</sup>	179	
23C		47
-30C		45
THERMAL	ISO Test Method	Property Value
HDT A, C	75	220
Coef. of Linear Thermal Expansion, Parallel, mm/mm C		0.2 X10-4
ELECTRICAL	ISO Test Method	Property Value
Comparative Tracking Index	IEC 60112	125
Volume Resistivity	IEC 60093	>1E13
Surface Resistivity	IEC 60093	>1E14
Dielectric Constant (100 Hz)	IEC 60250	4.2
Dielectric Constant (1 MHz)	IEC 60250	4.2



Dissipation Factor (100 Hz)	IEC 60250	20
Dissipation Factor (1 MHz)	IEC 60250	100
Dielectric Strength, KV/mm	IEC 60243-1	37

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

## 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 130-150 degC (266-302 degF) is recommended. Circulating air ovens are unsuitable. Drying time is dependent on moisture level, but the materials must be dried at least 4 hours. Further information concerning safe handling procedures can be obtained from the Material Safety Data Sheet. Alternatively, please contact your BASF representative.

### Typical Profile

Melt Temperature 350-390 degC (662-734 degF)

Mold Temperature 150-190 degC (302-374 degF)

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. Minimal back pressure should be utilized to prevent glass breakage.

### 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.

