

Product Texts

ULTEM 2220 resin is a high flow 20% glass fiber reinforced polyetherimide resin. The material is RoHS compliant and is intrinsically flame retardant without the use of FR modifiers and offers UL94 V0 at ≥ 0.5 mm. The material may offer excellent dimension stability, strength, stiffness and creep resistance up to high temperature due to its high glass transition temperature of 217 °C. The material is opaque and can be custom colored.

ISCC+ certified renewable bio-based solutions are available for this grade via differentiated color nomenclature.

UL Yellow Card Link: [E121562-104574016](https://www.ulprospector.com/121562-104574016)

| Processing/Physical Characteristics | Value | Unit | Test Standard |
|-------------------------------------|-------|------------------------|---------------|
| ISO Data | | | |
| Melt volume-flow rate, MVR | 8 | cm ³ /10min | ISO 1133 |
| Temperature | 337 | °C | - |
| Load | 6.7 | kg | - |
| ASTM Data | | | |
| Melt Flow Index, MFI | 14 | g/10min | ASTM D 1238 |
| Temperature | 337 | °C | - |
| Load | 6.7 | kg | - |
| Mold Shrinkage, MD | 0.004 | mm/mm | ASTM D 955 |
| Mold Shrinkage, TD | 0.004 | mm/mm | ASTM D 955 |

| Mechanical properties | Value | Unit | Test Standard |
|--|-------|-------------------|---------------|
| ISO Data | | | |
| Tensile Modulus | 6800 | MPa | ISO 527 |
| Yield stress | 150 | MPa | ISO 527 |
| Yield strain | 3.7 | % | ISO 527 |
| Stress at break | 148 | MPa | ISO 527 |
| Strain at break | 3.9 | % | ISO 527 |
| Flexural modulus, 23°C | 7000 | MPa | ISO 178 |
| Charpy impact strength, +23°C | 39 | kJ/m ² | ISO 179/1eU |
| Charpy impact strength, -30°C | 39 | kJ/m ² | ISO 179/1eU |
| Charpy notched impact strength, -30°C | 4 | kJ/m ² | ISO 179/1eA |
| Charpy notched impact strength, +23°C, 3mm | 4 | kJ/m ² | ISO 179/1eA |
| Izod impact strength, +23°C | 34 | kJ/m ² | ISO 180/1U |
| Izod notched impact strength, +23°C | 6 | kJ/m ² | ISO 180/1A |
| Izod notched impact strength | 6 | kJ/m ² | ISO 180/1A |
| Temperature | -30 | °C | - |
| ASTM Data | | | |
| Tensile Modulus | 7700 | MPa | ASTM D 638 |
| Tensile Strength at Break | 160 | MPa | ASTM D 638 |
| Elongation at Break | 3.3 | % | ASTM D 638 |
| Flexural Modulus | 7600 | MPa | ASTM D 790 |
| Izod Impact notched, 1/8 in | 60 | J/m | ASTM D 256 |
| Izod Impact notched, Low-Temperature | 55 | J/m | ASTM D 256 |
| Temperature | -30 | °C | - |
| Izod Impact unnotched, 1/8 in | 580 | J/m | ASTM D 256 |

| Thermal properties | Value | Unit | Test Standard |
|--|-------|-------|-----------------|
| ISO Data | | | |
| Temp. of deflection under load, 1.80 MPa | 210 | °C | ISO 75-1/-2 |
| Temp. of deflection under load, 0.45 MPa | 215 | °C | ISO 75-1/-2 |
| Vicat softening temperature, B | 225 | °C | ISO 306 |
| Burning behav. at thickness h | V-0 | class | IEC 60695-11-10 |
| Thickness tested | 0.5 | mm | - |
| Yellow Card available | yes | - | - |
| Glow Wire Flammability Index (GWFI) | 960 | °C | IEC 60695-2-12 |
| GWFI - thickness tested (1) | 0.5 | mm | - |
| Glow Wire Flammability Index (GWFI) | 960 | °C | IEC 60695-2-12 |
| GWFI - thickness tested (2) | 1.5 | mm | - |
| Glow Wire Flammability Index (GWFI) | 960 | °C | IEC 60695-2-12 |

ULTEM™ Resin 2220

PEI-GF20

Saudi Basic Industries Corporation (SABIC)

| | | | |
|---------------------------------------|-----|----|----------------|
| GWFI - thickness tested (3) | 3 | mm | - |
| Glow Wire Ignition Temperature (GWIT) | 825 | °C | IEC 60695-2-13 |
| GWIT - thickness tested (1) | 0.5 | mm | - |
| Glow Wire Ignition Temperature (GWIT) | 825 | °C | IEC 60695-2-13 |
| GWIT - thickness tested (2) | 1.5 | mm | - |
| Glow Wire Ignition Temperature (GWIT) | 825 | °C | IEC 60695-2-13 |
| GWIT - thickness tested (3) | 3 | mm | - |

ASTM Data

| | | | |
|--------------------------------------|------|-------|-------------|
| UL 94 Flame rating | V-0 | - | UL 94 |
| Thickness tested | 0.5 | mm | - |
| Coefficient of Thermal Expansion, MD | 16 | E-6/K | ASTM D 696 |
| Coefficient of Thermal Expansion, TD | 53.4 | E-6/K | ASTM D 696 |
| DTUL @ 264 psi | 210 | °C | ASTM D 648 |
| Vicat Temperature | 220 | °C | ASTM D 1525 |

| Electrical properties | Value | Unit | Test Standard |
|-----------------------|-------|------|---------------|
|-----------------------|-------|------|---------------|

ISO Data

| | | | |
|----------------------------|-----|---|-----------|
| Comparative tracking index | 137 | - | IEC 60112 |
|----------------------------|-----|---|-----------|

ASTM Data

| | | | |
|---------------------------------|------|--------|------------|
| Dielectric Strength, Short Time | 27 | kV/mm | ASTM D 149 |
| Volume Resistivity | 1E13 | Ohm*cm | ASTM D 257 |

| Other properties | Value | Unit | Test Standard |
|------------------|-------|------|---------------|
|------------------|-------|------|---------------|

| | | | |
|---------|------|-------------------|------------|
| Density | 1400 | kg/m ³ | ISO 1183 |
| Density | 1400 | kg/m ³ | ASTM D 792 |

| Processing Recommendation Injection Molding | Value | Unit | Test Standard |
|---|-------|------|---------------|
|---|-------|------|---------------|

| | | | |
|--------------------------|-----------|-----|---|
| Pre-drying - Temperature | 150 | °C | - |
| Pre-drying - Time | 4 - 6 | h | - |
| Processing humidity | ≤0.02 | % | - |
| Melt temperature | 350 - 400 | °C | - |
| Mold temperature | 135 - 165 | °C | - |
| Zone 1 | 330 - 400 | °C | - |
| Zone 2 | 340 - 400 | °C | - |
| Zone 3 | 345 - 400 | °C | - |
| Nozzle temperature | 345 - 400 | °C | - |
| Screw speed | 40 - 70 | rpm | - |
| Back pressure | 0.3 - 0.7 | MPa | - |

Characteristics**Processing**

Injection Molding, Wire/Cable Extrusion

Special Characteristics

Flame retardant, Halogen-free, Platable, Heat stabilized or stable to heat, Opaque

Features

Amorphous, Creep Resistance, Good Adhesion, Low Emission, Low Smoke, Low Warp/age

Chemical Resistance

General Chemical Resistance, Hydrolytically Stable

Certifications

RoHS compliant, ISCC Plus

Applications

Aircraft and Aerospace, Automotive, Building Construction, IT / Business Machine, Electrical and Electronical, General Purpose, Medical, Packaging, Refrigeration, Sports Equipment, Toys

Regional Availability

North America, Europe, Asia Pacific, South and Central America