



## TRIEX® 3022IR(HD)

Samyang Corporation - Polycarbonate

Monday, November 4, 2019

### General Information

#### Product Description

- TRIEX is the registered trademark of polycarbonate resin manufactured by Samyang Corporation. TRIEX polycarbonate resins offer superior mechanical properties, good dimensional stability and high electrical performance, which allows it to be widely used for electrical, electronic, appliance, automotive and optical industries.
- TRIEX 3022IR(HD) is a polycarbonate resin grade which has high low temperature impact strength in combination with superior mechanical and physical property.

#### CHARACTERISTICS

- Superior low temperature impact resistance
- Good flow-ability
- Workable under a wide range of temperatures (-100°C ~ 135°C)
- High electrical performance
- Good dimensional stability
- Low moisture absorbency
- Good weather resistance

#### APPLICATIONS

- TRIEX 3022IR(HD) resin grade is used for electric and electronic applications, food contact materials and etc.
- Medium viscosity. Transparent colors only.

#### General

|                   |                                                                                           |                                                                          |                                                           |
|-------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------|
| Material Status   | • Commercial: Active                                                                      |                                                                          |                                                           |
| Availability      | • Asia Pacific                                                                            | • Europe                                                                 | • North America                                           |
| Features          | • Food Contact Acceptable<br>• Good Dimensional Stability<br>• Good Electrical Properties | • Good Flow<br>• Good Weather Resistance<br>• Low Moisture Absorption    | • Low Temperature Impact Resistance<br>• Medium Viscosity |
| Uses              | • Appliances<br>• Automotive Applications                                                 | • Electrical/Electronic Applications<br>• Non-specific Food Applications | • Optical Applications                                    |
| Appearance        | • Clear/Transparent                                                                       |                                                                          |                                                           |
| Forms             | • Pellets                                                                                 |                                                                          |                                                           |
| Processing Method | • Injection Molding                                                                       |                                                                          |                                                           |

### ASTM & ISO Properties<sup>1</sup>

| Physical                             | Nominal Value    | Unit     | Test Method |
|--------------------------------------|------------------|----------|-------------|
| Density / Specific Gravity           | 1.20             |          | ASTM D792   |
| Melt Mass-Flow Rate (300°C/1.2 kg)   | 14               | g/10 min | ASTM D1238  |
| Molding Shrinkage - Flow (0.118 in)  | 5.0E-3 to 7.0E-3 | in/in    | ASTM D955   |
| Water Absorption (24 hr, 73°F)       | 0.15             | %        | ASTM D570   |
| Mechanical                           | Nominal Value    | Unit     | Test Method |
| Tensile Strength (Yield)             | 10000            | psi      | ASTM D638   |
| Tensile Elongation (Break)           | 130              | %        | ASTM D638   |
| Flexural Modulus                     | 326000           | psi      | ASTM D790   |
| Flexural Strength (Yield)            | 13500            | psi      | ASTM D790   |
| Impact                               | Nominal Value    | Unit     | Test Method |
| Notched Izod Impact (73°F, 0.125 in) | 17               | ft-lb/in | ASTM D256   |

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| Thermal                                                  | Nominal Value    | Unit     | Test Method |
|----------------------------------------------------------|------------------|----------|-------------|
| Deflection Temperature Under Load<br>264 psi, Unannealed | 273              | °F       | ASTM D648   |
| CLTE - Flow                                              | 2.8E-5 to 3.9E-5 | in/in/°F | ASTM D696   |
| Electrical                                               | Nominal Value    | Unit     | Test Method |
| Volume Resistivity                                       | 4.0E+16          | ohms·cm  | ASTM D257   |
| Dielectric Strength                                      | 760              | V/mil    | ASTM D149   |
| Arc Resistance                                           | 120              | sec      | ASTM D495   |
| Flammability                                             | Nominal Value    | Unit     | Test Method |
| Flame Rating (0.06 in)                                   | V-2              |          | UL 94       |

### Processing Information

| Injection              | Nominal Value    | Unit |
|------------------------|------------------|------|
| Drying Temperature     | 248              | °F   |
| Drying Time            | 3.0 to 5.0       | hr   |
| Suggested Max Moisture | 0.020            | %    |
| Rear Temperature       | 473 to 518       | °F   |
| Middle Temperature     | 500 to 545       | °F   |
| Front Temperature      | 527 to 572       | °F   |
| Nozzle Temperature     | 527 to 590       | °F   |
| Processing (Melt) Temp | 527 to 590       | °F   |
| Mold Temperature       | 149 to 221       | °F   |
| Back Pressure          | 36.3 to 102      | psi  |
| Screw Speed            | 40 to 70         | rpm  |
| Vent Depth             | 7.9E-4 to 3.1E-3 | in   |

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.