

Product Information

TRIREX[®] 3020HF

Polycarbonate

An amorphous engineering thermoplastic resin



TRIEX 3020HF GRADE

DESCRIPTION

TRIEX is the registered trademark for polycarbonate resin manufactured by Samyang Corporation. TRIEX is noted for its superior transparency, outstanding mechanical properties, good dimensional stability and high electrical performance, which allow it to be widely used for electrical and electronic appliances, automotive industries, and optical applications.

TRIEX 3020HF is a thin wall application purpose polycarbonate resin grade which has a high flow-ability and glass-like transparency in combination with superior physical properties.

CHARACTERISTICS

- * High Flow-ability
- * Good impact resistance
- * Workable under a wide range of temperatures (-100 °C ~ 135 °C)
- * High electrical performance
- * Good dimensional stability
- * Excellent transparency
- * Low moisture absorbency

APPLICATIONS

TRIEX 3020HF resin grade is used mainly in electronic and electric applications, including connectors, lamp parts, gears, fans, drill housing, camera and light covers.

PROCESSING

TRIEX 3020HF resin grade may be easily processed on the injection molding machines. Actual processing conditions will depend on the several factors such as machine size, mold design, material resistance time, shot size etc. Thus, the optimum condition may be obtained after several trial and errors.





DATA SHEET OF TRIREX 3020 HF GRADE

PROPERTY	TYPICAL DATA	UNIT	METHOD
MECHANICAL			
Tensile strength at break, Type I, 3.2 mm	700	kg/cm ²	ASTM D638
Tensile strength at yield, Type I, 3.2 mm	620	kg/cm ²	ASTM D638
Tensile Elongation at break, Type I, 3.2 mm	120	%	ASTM D638
Tensile Elongation at yield, Type I, 3.2 mm	7	%	ASTM D638
Flexural Strength at yield, 6.4 mm	880	kg/cm ²	ASTM D790
Flexural Modulus, 6.4 mm	21,000	kg/cm ²	ASTM D790
Compressive Strength	780	kg/cm ²	ASTM D695
Hardness, Rockwell M	80	-	ASTM D785
Hardness, Rockwell R	120	-	ASTM D785
IZOD Impact, unnotched, 23 °C	NB	kgfcm/cm	ASTM D4812
IZOD Impact, notched, 23 °C	75	kgfcm/cm	ASTM D256
IZOD Impact, notched, - 30 °C	10	kgfcm/cm	ASTM D256
THERMAL			
HDT, 4.6 kg/cm ² , 6.4 mm	146	°C	ASTM D648
HDT, 18.6 kg/cm ² , 6.4 mm	135	°C	ASTM D648
Thermal Conductivity	5.3 x 10 ⁻⁴	cal/sec/cm ² /°C/cm	ASTM C177
PHYSICAL			
Specific Gravity, Solid	1.2	-	ASTM D792
Water Absorption, 24 hours at 23 °C	0.15	%	ASTM D570
Coefficient of Linear Expansion	5~7 x 10 ⁻⁵	mm/mm/°C	ASTM D955
Melt Flow Rate, 300 °C/1.2 kg	19 ~ 22	g/10 min	ASTM D1238
Mold Shrinkage (3mm thickness)	0.5 ~ 0.7	%	ASTM D955
Taber Abrasion (CS17 1000g)	13	mg/1000 cycle	ASTM D1044
OPTICAL			
Transmittance	89	%	ASTM D1003
Refractive Index	1.585	-	ASTM D542
Haze	0.7	%	ASTM D1003
ELECTRICAL			
Volume Resistivity, 500V	4 x 10 ¹⁶	ohm-cm	ASTM D257
Surface Resistivity, 500V	6 x 10 ¹⁵	ohm	ASTM D257
Dielectric Strength, in air, 1/16" thickness	30	Kv/mm	ASTM D149
Dielectric Strength, in air, 1/8" thickness	16	Kv/mm	ASTM D149
Dielectric Constant, 60 Hz	2.85	-	ASTM D150
Dissipation Factor, 60 Hz	0.0092	-	ASTM D150
ARC Resistance	120	sec	ASTM D495
Comparative Tracking Index, 3mm thickness	> 250	Volt	UL 746A
FLAME CHARACTERISTICS			
UL-94 V2 Class Rated (tested thickness)	0.0625	inch	UL 94

※ The figures listed in this table are typical values obtained under the standard test methods and may not be applicable for products that are under different application condition.





PROCESSING CONDITION FOR TRIREX 3020 HF

General processing conditions for TRIREX 3020HF are shown below. Drying prior to processing is essential to ensure desired appearance and property performance.

CONTENTS	TYPICAL CONDITIONS
Drying Temperature (°C)	120
Drying Time (hour)	3 ~ 4
Barrel Temperature (°C)	
Rear	260 ~ 280
Middle	275 ~ 290
Front	280 ~ 300
Nozzle	280 ~ 300
Melt Temperature (°C)	280 ~ 305
Mold Temperature (°C)	65 ~ 105
Injection Pressure (MPa)	70 ~ 140
Hold Pressure	50 ~ 75 % of injection pressure
Back Pressure (kPa)	350 ~ 700
Screw Speed (rpm)	50 ~ 70
Injection Speed (%)	50 ~ 80 (moderate to fast)
Injection Cushion (mm)	3 ~ 6





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