

PRODUCT DATA

AURUM[®] JGN3030 Thermoplastic Polyimide

TYPICAL PROPERTIES		TEST METHOD	UNITS	VALUE
PHYSICAL				
Specific Gravity		ASTM D-792	-	1.56
Mold Shrinkage		ASTM D-955	%	0.44
Water Absorption 24 hrs @ 73°F		ASTM D-570	%	0.23
Moisture Absorption, 24 Hrs.		73°F, 60%RH	%	0.10
MECHANICAL				
Tensile Strength	73°F 300°F	ASTM D-638 "	psi (MPa) "	23,900 (165) 15,400 (106)
Elongation	73°F 300°F	ASTM D-638 "	% %	3 4
Flexural Strength	73°F 300°F	ASTM D-790 "	psi (MPa) "	35,000 (241) 25,000 (173)
Flexural Modulus	73°F 300°F	ASTM D-790 "	psi (MPa) "	1,400,000 (9,500) 1,200,000 (8,000)
Izod Impact Strength (notched)		ASTM D-256	ft lb/in (J/m)	2.2 (120)
Compressive Strength	73°F 300°F	JIS K-7208 "	psi (MPa) "	27,300 (188) 12,800 (88)
THERMAL				
Melt Point		DSC	°F (°C)	730 (388)
Glass Transition Temperature		DSC	°F (°C)	482 (250)
Melt Flow Index 752°F		ASTM D-1238	g/10 min	-
Coefficient of Thermal Expansion (MD/TD) 73°F		ASTM D-696	10 ⁻⁶ /°F (10 ⁻⁵ /°C)	0.9MD/2.9TD (1.7MD/5.3TD)
Heat Deflection Temperature		ASTM D-648	°F (°C)	473 (245)
Thermal Conductivity		ASTM C-177	Kcal/m hr °C	0.30
Specific Heat	73°F 212°F 572°F	DSC " "	Cal/g °C " "	0.23 0.23 0.32
ELECTRICAL				
Dielectric Constant	1KHz 1MHz	ASTM D-150 "	- -	3.8 3.7
Dissipation Factor	1KHz 1MHz	ASTM D-150 "	- -	0.0012 0.0036
Surface Resistivity		ASTM D-257	Ohms	E16
Volume Resistivity		"	Ohm cm	-
FLAMMABILITY				
Vertical Burn Test	0.4 mm 2.0 mm	UL-94 "	- -	V-0 -
Oxygen Index	3.2 mm	ASTM D-2863	%	-

DESCRIPTION

AURUM JGN3030 is a high performance thermoplastic polyimide for precision injection molded components and extruded products. A member of the AURUM family of advanced engineering resins, glass fiber reinforced AURUM JGN3030 offers a unique balance of mechanical and thermal properties for superior performance in demanding automotive, business machinery, industrial equipment, aerospace, and semiconductor equipment applications. AURUM exhibits outstanding resistance to chemicals and radiation, a low coefficient of thermal expansion, excellent electrical properties, and flame resistance.

INJECTION MOLDING

AURUM JGN3030 can be readily injection molded in most reciprocating screw injection molding machines. AURUM resin pellets should be dried prior to melt processing on trays in an air circulation oven or desiccating hopper drier under the following conditions: 8 hours at 428°F, 10 hours at 392°F, or 12 hours at 356°F. Cylinder temperature requirements generally range from 720 - 770°F. Injection pressures of 11,000 - 20,000 psi, nominal back pressures of 0 - 50 psi, medium to high injection velocity, and screw speeds of 100 - 200 rpm are utilized for AURUM injection molding. Mold temperatures range from 356 - 410°F. AURUM sprue and runner systems can be ground and mixed with virgin AURUM resin at 15% - 30% levels without significant loss of mechanical properties for enhanced economics. AURUM can be easily purged with unfilled or glass fiber reinforced polyethersulfone, polysulfone, or polyetherimide. AURUM can be injection molded with select outer-heating design hot runner systems.

(continued from front)

APPLICATIONS

AURUM JGN3030 injection molded components are excellent replacements for metals, ceramics, and other plastics. High performance AURUM JGN3030 parts include heat-resistant gears, semiconductor manufacturing and handling equipment components, and thermal and electrical insulators.

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