LUPOY GN5201F

PC/ABS Alloy

LG Chem

Product Description

LUPOY is the trade name of LG Chemical's polycarbonate(PC) and styrenic resin alloy, used to manufacture housing of electronic equipment, automotive part, frames, and etc. There are varying grades in LUPOY resins including general purpose grade, flame retardant grade, and filler reinforced grade.

LUPOY GN5201F grade is 20% glass fiber reinforced flame-retardant polycarbonate /ABS alloys which do not contain any halogenated materials. These resins comply with the TCO'99 and Blue Angel environmental directives. It has excellent mechanical properties and high heat resistance. So it can be used for structural material of electronic devices.

The most desirable characteristics of LUPOY GN5201F grade are as follows :

- ***Excellent mechanical properties***
  meet the specification for frame material of electronic devices
- ***Excellent heat resistance***
  excellent durability for heat from electronic devices
- ***Environmentally friendly resin***
  does not contain any halogenated materials that are prohibited in the TCO'99 directives.
- ***Good flame retardancy***
  good flame retardancy makes it possible to use indoor electronic device frame

Grade : LUPOY GN5201F

Typical Property

Property	Unit	Test Method	LUPOY GN5201F
Physical			
Specific Gravity	-	ASTM D792	**1.32**
Mold Shrinkage	%	ASTM D955	**0.1~0.3**
Mechanical			
Tensile Strength	psi(MPa)	ASTM D638	**13,100 (90)**
Elongation @ break	%	ASTM D638	**8.0**
Flexural Strength, 0.125″	psi(MPa)	ASTM D790	**19,900 (137)**
Flexural Modulus, 0.125″	psi(MPa)	ASTM D790	**782,000 (5,390)**
Izod impact, notched, 73°F	ft-lb/in(J/m)	ASTM D256	**2.0 (120)**
Thermal			
HDT, 264psi, 0.250″	°F(℃)	ASTM D648	**234 (112)**
Flammability			
UL 94 Rating			**1.5mm V-0** **2.0mm 5VB**

* Test condition : 73°F, 50%RH
* These property values are typical representative for natural colors and are not intended for specification purposes. When pigments are loaded, there might be slight change in the properties.

Injection Molding LUPOY GN5201F

(1) Material Handling

LUPOY GN5201F resin is used for frame of a variety of electronic machines. Undesirable surface defects may be caused by air pollutant such as dust during the material handling process. Materials, for instance, can be conta minated by foreign materials when they are loaded into dryers. Precautions should be taken to ensure the absence of contamination in the storage and processing area.

(2) Drying

If the resin has an excessively high moisture content, this can result in surface defects, i.e.silver streaks, and impaired properties of molded parts. To ensure optimum part performance and prevent surface defects, LUPOY GN5201F grade must be dried prior to processing and moisture level maintained less than 0.05%. A dehumidifying hopper dryer mounted onto the molding machine and equipped with alternating desiccant beds and air temperature/dew point indicators is highly recommended. Recommended drying conditions are 3 to 4 hours at 75~ 90℃. Drying temperature exceeding 95℃ should be avoided since the resin pellets can agglomerate.

(3) Molding Temperatures

Typical molding temperatures of LUPOY GN5201F are shown below.

		Suggested Temperature ˚F(℃)
Barrel	Rear	390~440 (200~230)
	Middle	410~460 (210~240)
	Front	430~470 (220~250)
	Nozzle	430~470 (220~250)
Melt		430~500 (220~260)
Mold		120~176 (50~80)

LUPOY GN5201F can be molded at a wide range of temperature depending on the molding machine capacity and complexity of the mold.

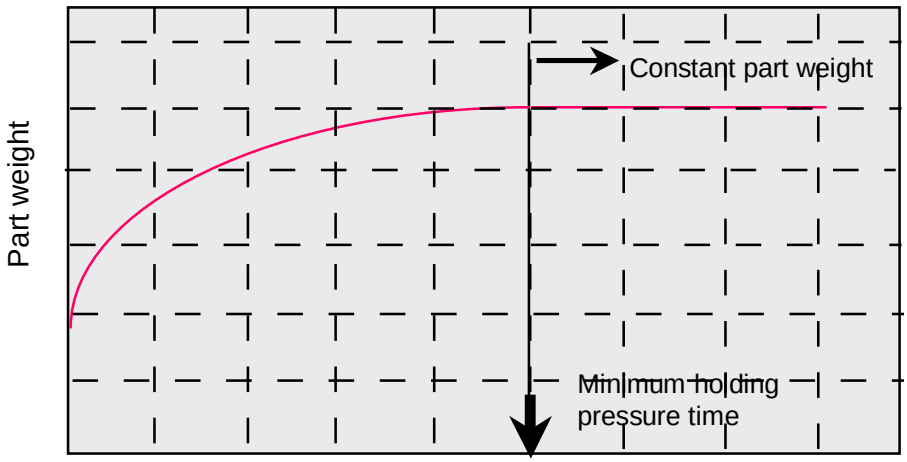
(4) Injection Speed / Injection Pressure

The injection speed and pressure depend on the type of materials and the nature of the molded part. When molten polymer is injected into the mold cavity, process control can be divided into two processes, i.e. injection speed and holding pressure. In injection speed control process, desired set-point value of injection speed is determined. Injection pressure should be high enough to ensure that the injection speed does not drop below the required set-point value. Injection pressure varies with the material type, i.e. the flowability of a material.

In general, high injection speed is preferred. In order to avoid surface defects close to the gate, it is recommended to reduce the speed at the start of the injection process. In many cases, surface defects such as flow marks, jetting, streaks, and weld lines are closely related to injection speed. Therefore, optimum velocity profile should be determined through empirical attempts. By reducing the speed prior to holding pressure stage, it is possible to level out the pressure profile and help prevent a back flow of the melt. It is important to switch to holding pressure stage at the right moment in order to prevent over-packing in the mold.

(5) Holding Pressure / Holding Time

Volume shrinkage takes place when the molded part cools in the mold. Holding pressure serves to offset the volume shrinkage. Holding pressure should be maintained until the gate has “frozen”. The required holding pressure time can be determined by checking the weight of the molded part.



(6) Back Pressure

A back pressure of 25 to 50 bar is suggested to ensure a homogeneous melt and to maintain a consistent shot size.