# Clariant PC PC-1100H30

## Polycarbonate

#### **Clariant Corporation**

#### Message:

Clariant PC PC-1100H30 is a polycarbonate (PC) material, which contains a 30% carbon fiber reinforced material. This product is available in North America and is processed by injection molding.

The main features of Clariant PC PC-1100H30 are:

flame retardant/rated flame

high strength

Good processability

Hard

Corrosion resistance

Typical application areas include:

military applications

business/office supplies

Sporting goods

General Information					
Filler / Reinforcement	Carbon fiber reinforced material, 30% filler by weight				
Features	Good dimensional stability				
	Rigidity, high				
	Rigid, good				
	High strength				
	Workability, good				
	Good corrosion resistance				
	Good coloring				
	Good chemical resistance				
	Good toughness				
	Low or no water absorption				
Uses	Metal substitution				
	Military application				
	Business equipment				
	Sporting goods				
Appearance	Available colors				
	Natural color				
Forms	Particle				
Processing Method	Injection molding				
Physical	Nominal Value	Unit	Test Method		
Specific Gravity	1.33	g/cm³	ASTM D792		
Molding Shrinkage - Flow (3.18 mm)	0.15	%	ASTM D955		
Water Absorption			ASTM D570		

24 hr     0.080     %     ASTM D570       Saturation     0.18     %     ASTM D570       Heardness     Nominal Value     Unit     Test MPd78       Class m     92     STM D785     ASTM D785       Class r     110     Unit     Test Method       Mechanical     Nominal Value     Unit     Test Method       Transile Strongth     199     MPa     ASTM D638       Flexural Modulus     13800     MPa     ASTM D638       Flexural Modulus     13800     MPa     ASTM D790       Flexural Modulus     13800     MPa     ASTM D638       Flexural Modulus     13800     MPa     ASTM D638       Flexural Modulus     13800     MPa     ASTM D638       Flexural Modulus     1090     MPa     ASTM D648       Flexural Modulus     1090     MPa				
Hardness     Nominal Value     Unit     Test Method       Rockwell Hardness     92     ASTM D785       Class r     110     Test Method       Mechanical     Nominal Value     Unit     Test Method       Tersile Eringth     169     MPa     ASTM D638       Tersile Elongation (Break)     4.0     %     ASTM D638       Flexural Modulus     13800     MPa     ASTM D790       Flexural Strength     248     MPa     ASTM D790       Flexural Strength     110     Mra     ASTM D638       Flexural Strength     110     J/m     ASTM D638       Flexural Strength     110     MPa     ASTM D638       Flexural Strength     10     MPa     ASTM D638       Flexural Strength     11     MPa     ASTM D648       Thermal     Nominal Value     Unit     Test Method	24 hr	0.080	%	ASTM D570
Rockwell Hardness     Formal Section 100     ASTM D785       Class r     110     ASTM D785       Mechanical     Nominal Value     Unit     Test Method       Tensile Strength     169     MPa     ASTM D785       Tensile Elongation (Break)     40     %     ASTM D838       Flexural Modulus     13800     MPa     ASTM D780       Flexural Strength     248     MPa     ASTM D790       Impact     Nominal Value     Unit     Test Method       Notched Ized Impact (3.18 mm)     110     //m     ASTM D636       Thermal     Nominal Value     Unit     Test Method       Obelection Temperature Under Load     152     °C     ASTM D648       4.5 MPa, not annealed     152     °C     ASTM D648       6.1 MPa, not annealed     149     °C     ASTM D648       CLTE - Flow     1.6E-5     cn/cm/°C     ASTM D648       CLTE - Flow     1.0E-3     onycen/°C     ASTM D648       CLTE - Flow     Nominal Value     Unit     Test Method       Volume Resistivity	Saturation	0.18	%	ASTM D570
Class m     92     ASTM D785       Class r     110     ASTM D785       Mechanical     Nominal Value     Unit     Test Method       Tensile Strength     169     MPa     ASTM D638       Tensile Elongation (Break)     4.0     %     ASTM D638       Flexural Strength     248     MPa     ASTM D790       Flexural Strength     248     MPa     ASTM D790       Impact     Nominal Value     Unit     Test Method       Notched Ized Ired Ired Tead     Jone     ASTM D256       Themal     Nominal Value     Unit     Test Method       Deflection Temperature Under Load     152     "C     ASTM D648       4.6 MPa, not annealed     152     "C     ASTM D648       1.8 MPa, not annealed     149     "C     ASTM D648       CLTE - Flow     1.8E-5     cm/cm/"C     ASTM D696       Electrical     Nominal Value     Unit     Test Method       Volume Resistivity     1.0E-3     ohms: cm     ASTM D54       Flower Spect Max Molsture     1.0E-3     ohms: c	Hardness	Nominal Value	Unit	Test Method
Class r     110     ASTM D785       Mechanical     Nominal Value     Unit     Test Method       Tensile Strength     169     MPa     ASTM D638       Tensile Strength     40     %     ASTM D638       Tensile Strength     13800     MPa     ASTM D638       Flexural Strength     28     MPa     ASTM D790       Impact     Nominal Value     Unit     Test Method       Notiched Izod Impact (3.18 mm)     110     I/m     ASTM D648       Thermal     Nominal Value     Unit     Test Method       Deflection Temperature Under Load     152     "C     ASTM D648       1.8 MPa, not annealed     152     "C     ASTM D648       1.8 MPa, not annealed     152     cm/cm/"C     ASTM D696       Electrical     Nominal Value     Unit     Test Method       Volume Resistivity     1.0E+3     ohms*-cm     ASTM D696       Electrical     Nominal Value     Unit     Test Method       Unity     Test Method     D4     C     C       Electrical <td>Rockwell Hardness</td> <td></td> <td></td> <td>ASTM D785</td>	Rockwell Hardness			ASTM D785
Mechanical     Nominal Value     Unit     Test Method       Tensile Strength     169     MPa     ASTM D638       Tensile Elongation (Break)     4.0     %     ASTM D638       Flexural Modulus     13800     MPa     ASTM D790       Elexural Strength     248     MPa     ASTM D790       Impact     Nominal Value     Unit     Test Method       Notched Izod Impact (3.18 mm)     110     J/m     ASTM D566       Thermal     Nominal Value     Unit     Test Method       Deflection Temperature Under Load     152     °C     ASTM D648       0.45 MPa, not annealed     152     °C     ASTM D648       1.8 MPa not annealed     149     °C     ASTM D648       CLTE - Flow     1.8E-5     cm/cm/°C     ASTM D648       Electrical     Nominal Value     Unit     Test Method       Volume Resistivity     Nominal Value     Unit     Test Method       Injection     Nominal Value     Unit     Test Method       Drying Time     4.0     hr     Test Method	Class m	92		ASTM D785
Tensile Strength     169     MPa     ASTM D638       Tensile Elongation (Break)     40     %     ASTM D638       Flexural Modulus     13800     MPa     ASTM D790       Flexural Strength     248     MPa     ASTM D790       Impact     Nominal Value     Unit     Test Method       Notched Izod Impact (3.18 mm)     110     J/m     ASTM D566       Thermal     Nominal Value     Unit     Test Method       Deflection Temperature Under Load     152     "C     ASTM D648       4.5 MPa, not annealed     152     "C     ASTM D648       8.18 MPa, not annealed     149     "C     ASTM D648       8.18 MPa, not annealed     10     Unit     Test Method	Class r	110		ASTM D785
Tensile Elongation (Break)     4.0     %     ASTM D638       Flexural Modulus     13800     MPa     ASTM D790       Flexural Strength     248     MPa     ASTM D790       Impact     Nominal Value     Unit     Test Method       Notched Izod Impact (3.18 mm)     110     J/m     ASTM D656       Thermal     Nominal Value     Unit     Test Method       Deflection Temperature Under Load     152     °C     ASTM D648       0.45 MPa, not annealed     152     °C     ASTM D648       1.8 MPa, not annealed     149     °C     ASTM D648       Electrical     Nominal Value     Unit     Test Method       Volume Resistivity     106+3     ohms·cm     ASTM D696       Flammability     Nominal Value     Unit     Test Method       Impection     Nominal Value     Unit     Test Method <td>Mechanical</td> <td>Nominal Value</td> <td>Unit</td> <td>Test Method</td>	Mechanical	Nominal Value	Unit	Test Method
Flexural Modulus     13800     MPa     ASTM D790       Flexural Strength     248     MPa     ASTM D790       Impact     Nominal Value     Unit     Test Method       Notched Izod Impact (3.18 mm)     110     J/m     ASTM D256       Thermal     Nominal Value     Unit     Test Method       Deflection Temperature Under Load     152     "C     ASTM D648       1.8 MPa, not annealed     149     "C     ASTM D648       1.8 MPa, not annealed     18E-5     cm/cm/"C     ASTM D696       Electrical     Nominal Value     Unit     Test Method       Volume Resistivity     1.06+3     ohms: cm     ASTM D697       Flammability     Nominal Value     Unit     Test Method       Injection     Nominal Value     Unit     Test Met	Tensile Strength	169	MPa	ASTM D638
Flexural Strength     248     MPa     ASTM D790       Impact     Nominal Value     Unit     Test Method       Notched Izod Impact (3.18 mm)     110     J/m     ASTM D256       Thermal     Nominal Value     Unit     Test Method       Deflection Temperature Under Load     "C     ASTM D648       0.45 MPa, not annealed     152     "C     ASTM D648       1.8 MPa, not annealed     149     "C     ASTM D648       CLTE - Flow     1.8E-5     cm/cm/"C     ASTM D696       Ellectrical     Nominal Value     Unit     Test Method       Volume Resistivity     1.0E+3     ohms*-cm     ASTM D257       Flame Rating     V-1     Unit     Test Method       Injection     Nominal Value     Unit     Test Method       Injection Rate     4.0     hr     Suggested Max Moisture     3.04 - 343	Tensile Elongation (Break)	4.0	%	ASTM D638
Impact     Nominal Value     Unit     Test Method       Notched Izod Impact (3.18 mm)     110     J/m     ASTM D256       Thermal     Nominal Value     Unit     Test Method       Deflection Temperature Under Load     "C     ASTM D648       0.45 MPa, not annealed     152     "C     ASTM D648       1.8 MPa, not annealed     149     "C     ASTM D648       CLTE - Flow     1.8E-5     cm/cm/"C     ASTM D696       Electrical     Nominal Value     Unit     Test Method       Volume Resistivity     1.0E+3     ohns'-cm     ASTM D257       Flame Rating     V-1     Unit     Test Method       Injection     Nominal Value     Unit     Unit     Unit       Projection Permeture     121     "C     Unit	Flexural Modulus	13800	MPa	ASTM D790
Nothed Izod Impact (3.18 mm)     110     J/m     ASTM D256       Thermal     Nominal Value     Unit     Test Method       Deflection Temperature Under Load     "C     ASTM D648       0.45 MPa, not annealed     152     "C     ASTM D648       1.8 MPa, not annealed     149     "C     ASTM D648       CLTE - Flow     1.8E-5     cm/cm/"C     ASTM D696       Electrical     Nominal Value     Unit     Test Method       Volume Resistivity     1.0E+3     ohnns·cm     ASTM D257       Flame Rating     V-1     Unit     Test Method       Injection     Nominal Value     Unit     Test Method       Injection     A.0     hr     C       Veryong Tim	Flexural Strength	248	MPa	ASTM D790
Thermal     Nominal Value     Unit     Test Method       Deflection Temperature Under Load     152     °C     ASTM D648       0.45 MPa, not annealed     149     °C     ASTM D648       1.8 MPa, not annealed     149     °C     ASTM D648       CLTE - Flow     1.8E-5     cm/cm/°C     ASTM D696       Electrical     Nominal Value     Unit     Test Method       Volume Resistivity     1.0E+3     ohms-cm     ASTM D257       Flammability     Nominal Value     Unit     Test Method       Injection     121     °C     Test Method       Injection     304 - 343     °C     Test Method	Impact	Nominal Value	Unit	Test Method
Deflection Temperature Under Load     152     °C     ASTM D648       0.45 MPa, not annealed     149     °C     ASTM D648       1.8 MPa, not annealed     149     °C     ASTM D648       CLTE - Flow     1.8E-5     cm/cm/°C     ASTM D696       Electrical     Nominal Value     Unit     Test Method       Volume Resistivity     1.0E+3     ohms-cm     ASTM D257       Flammability     Nominal Value     Unit     Test Method       Injection     121     °C     Test Method       Injection     304 - 343     °C     Test Method       Injection Rate     304 - 343     °C     Test Method       Mold Temperature (Aim)     316     °C     Test Method	Notched Izod Impact (3.18 mm)	110	J/m	ASTM D256
0.45 MPa, not annealed     152     *C     ASTM D648       1.8 MPa, not annealed     149     *C     ASTM D648       CLTE - Flow     1.8E-5     cm/cm/*C     ASTM D696       Electrical     Nominal Value     Unit     Test Method       Volume Resistivity     1.0E+3     ohms·cm     ASTM D257       Flammability     Nominal Value     Unit     Test Method       Flame Rating     V-1     UL 94       Injection     Nominal Value     Unit       Drying Temperature     121     *C       Suggested Max Moisture     0.020     %       Rear Temperature     304 - 343     *C       Middle Temperature     304 - 343     *C       Front Temperature (Aim)     316     *C       Mold Temperature (Aim)     316     *C       Mold Temperature (Aim)     82.2 - 121     *C       Mold Temperature     345 - 0.689     MPa       Screw Speed     45 - 75     rpm       Cushion     318 - 6.35     mm	Thermal	Nominal Value	Unit	Test Method
1.8 MPa, not annealed     149     *C     ASTM D648       CLTE - Flow     1.8E-5     cm/cm/*C     ASTM D696       Electrical     Nominal Value     Unit     Test Method       Volume Resistivity     1.0E+3     ohms-cm     ASTM D257       Flam Rating     Nominal Value     Unit     Test Method       Injection     Nominal Value     Unit     UL 94       Injection     4.0     Nr     C       Suggested Max Moisture     0.020     %     C       Middle Temperature     304 - 343     *C     C       Front Temperature     304 - 343     <	Deflection Temperature Under Load			ASTM D648
CLTE - Flow     1.8E-5     cm/cm/°C     ASTM D696       Electrical     Nominal Value     Unit     Test Method       Volume Resistivity     1.0E+3     ohms cm     ASTM D257       Flammability     Nominal Value     Unit     Test Method       Flame Rating     V-1     Unit     UL 94       Injection     Nominal Value     Unit     UL 94       Drying Temperature     121     *C     *C       Suggested Max Moisture     4.0     hr     *C       Suggested Max Moisture     304 - 343     *C     *C       Middle Temperature     304 - 343     *C     *C       Front Temperature     304 - 343     *C     *C       Processing (Melt) Temp     304 - 327     *C     *C       Mold Temperature (Aim)     316     *C     *C       Mold Temperature (Aim)     316     *C     *C       Mold Temperature     32.2 - 121     *C     *C       Mold Temperature     32.5 - 0.689     MPa     *C       Screw Speed     45 - 75	0.45 MPa, not annealed	152	°C	ASTM D648
Electrical     Nominal Value     Unit     Test Method       Volume Resistivity     1.0E+3     ohms·cm     ASTM D257       Flammability     Nominal Value     Unit     Test Method       Flame Rating     V-1     Unit     UL 94       Injection     Nominal Value     Unit     UL 94       Drying Temperature     121     °C     C       Drying Time     4.0     hr     C       Suggested Max Moisture     0.020     %     C       Rear Temperature     304 - 343     °C     C       Middle Temperature     304 - 343     °C     C       Front Temperature     304 - 343     °C     C       Processing (Melt) Temp     304 - 327     °C     C       Melt Temperature (Aim)     316     °C     C       Mold Temperature     82.2 - 121     °C     C       Injection Rate     Fast     Fast     Fast       Back Pressure     0.345 - 0.689     MPa     Fast       Cushion     3.18 - 6.35     mm     Fast	1.8 MPa, not annealed	149	°C	ASTM D648
Volume Resistivity     1.0E+3     ohms·cm     ASTM D257       Flammability     Nominal Value     Unit     Test Method       Flame Rating     V-1     U.94       Injection     Nominal Value     Unit       Drying Temperature     121     °C       Suggested Max Moisture     0.020     %       Rear Temperature     304 - 343     °C       Middle Temperature     304 - 343     °C       Front Temperature     304 - 343     °C       Processing (Melt) Temp     304 - 327     °C       Melt Temperature (Aim)     316     °C       Mold Temperature     82.2 - 121     °C       Injection Rate     Fast       Back Pressure     0.345 - 0.689     MPa       Screw Speed     45 - 75     rpm       Cubition     3.18 - 6.35     mm	CLTE - Flow	1.8E-5	cm/cm/°C	ASTM D696
Flammability     Nominal Value     Unit     Test Method       Flame Rating     V-1     U194       Injection     Nominal Value     Unit       Drying Temperature     121     °C       Drying Time     4.0     hr       Suggested Max Moisture     0.020     %       Rear Temperature     304 - 343     °C       Middle Temperature     304 - 343     °C       Front Temperature     304 - 343     °C       Processing (Melt) Temp     304 - 327     °C       Melt Temperature (Aim)     316     °C       Mold Temperature     82.2 - 121     °C       Injection Rate     Fast       Back Pressure     0.345 - 0.689     MPa       Screw Speed     45 - 75     rpm       Cushion     3.18 - 6.35     mm	Electrical	Nominal Value	Unit	Test Method
Flame Rating     V-1     Unit       Injection     Nominal Value     Unit       Drying Temperature     121     °C       Drying Time     4.0     hr       Suggested Max Moisture     0.020     %       Rear Temperature     304 - 343     °C       Middle Temperature     304 - 343     °C       Front Temperature     304 - 343     °C       Processing (Melt) Temp     304 - 327     °C       Melt Temperature (Aim)     316     °C       Mold Temperature     82.2 - 121     °C       Injection Rate     Fast       Back Pressure     0.345 - 0.689     MPa       Screw Speed     45 - 75     rpm       Cushion     3.18 - 6.35     mm	Volume Resistivity	1.0E+3	ohms·cm	ASTM D257
Injection     Nominal Value     Unit       Drying Temperature     121     °C       Drying Time     4.0     hr       Suggested Max Moisture     0.020     %       Rear Temperature     304 - 343     °C       Middle Temperature     304 - 343     °C       Front Temperature     304 - 343     °C       Processing (Melt) Temp     304 - 327     °C       Melt Temperature (Aim)     316     °C       Mold Temperature     82.2 - 121     °C       Injection Rate     Fast     Temperature       Back Pressure     0.345 - 0.689     MPa       Screw Speed     45 - 75     rpm       Cushion     3.18 - 6.35     mm	Flammability	Nominal Value	Unit	Test Method
Drying Temperature     121     °C       Drying Time     4.0     hr       Suggested Max Moisture     0.020     %       Rear Temperature     304 - 343     °C       Middle Temperature     304 - 343     °C       Front Temperature     304 - 343     °C       Processing (Melt) Temp     304 - 327     °C       Melt Temperature (Aim)     316     °C       Mold Temperature     82.2 - 121     °C       Injection Rate     Fast     WPa       Back Pressure     0.345 - 0.689     MPa       Screw Speed     45 - 75     rpm       Cushion     3.18 - 6.35     mm	Flame Rating	V-1		UL 94
Drying Time     4.0     hr       Suggested Max Moisture     0.020     %       Rear Temperature     304 - 343     °C       Middle Temperature     304 - 343     °C       Front Temperature     304 - 343     °C       Processing (Melt) Temp     304 - 327     °C       Melt Temperature (Aim)     316     °C       Mold Temperature     82.2 - 121     °C       Injection Rate     Fast     MPa       Screw Speed     45 - 75     rpm       Cushion     3.18 - 6.35     mm	Injection	Nominal Value	Unit	
Suggested Max Moisture     0.020     %       Rear Temperature     304 - 343     °C       Middle Temperature     304 - 343     °C       Front Temperature     304 - 343     °C       Processing (Melt) Temp     304 - 327     °C       Melt Temperature (Aim)     316     °C       Mold Temperature     82.2 - 121     °C       Injection Rate     Fast       Back Pressure     0.345 - 0.689     MPa       Screw Speed     45 - 75     rpm       Cushion     3.18 - 6.35     mm	Drying Temperature	121	°C	
Rear Temperature     304 - 343     °C       Middle Temperature     304 - 343     °C       Front Temperature     304 - 343     °C       Processing (Melt) Temp     304 - 327     °C       Melt Temperature (Aim)     316     °C       Mold Temperature     82.2 - 121     °C       Injection Rate     Fast     MPa       Screw Speed     45 - 75     rpm       Cushion     3.18 - 6.35     mm	Drying Time	4.0	hr	
Middle Temperature   304 - 343   °C     Front Temperature   304 - 343   °C     Processing (Melt) Temp   304 - 327   °C     Melt Temperature (Aim)   316   °C     Mold Temperature   82.2 - 121   °C     Injection Rate   Fast   Temperature     Back Pressure   0.345 - 0.689   MPa     Screw Speed   45 - 75   rpm     Cushion   3.18 - 6.35   mm	Suggested Max Moisture	0.020	%	
Front Temperature     304 - 343     °C       Processing (Melt) Temp     304 - 327     °C       Melt Temperature (Aim)     316     °C       Mold Temperature     82.2 - 121     °C       Injection Rate     Fast     Fast       Back Pressure     0.345 - 0.689     MPa       Screw Speed     45 - 75     rpm       Cushion     3.18 - 6.35     mm	Rear Temperature	304 - 343	°C	
Processing (Melt) Temp   304 - 327   °C     Melt Temperature (Aim)   316   °C     Mold Temperature   82.2 - 121   °C     Injection Rate   Fast   Fast     Back Pressure   0.345 - 0.689   MPa     Screw Speed   45 - 75   rpm     Cushion   3.18 - 6.35   mm	Middle Temperature	304 - 343	°C	
Melt Temperature (Aim)   316   °C     Mold Temperature   82.2 - 121   °C     Injection Rate   Fast     Back Pressure   0.345 - 0.689   MPa     Screw Speed   45 - 75   rpm     Cushion   3.18 - 6.35   mm	Front Temperature	304 - 343	°C	
Mold Temperature   82.2 - 121   °C     Injection Rate   Fast   Temperature     Back Pressure   0.345 - 0.689   MPa     Screw Speed   45 - 75   rpm     Cushion   3.18 - 6.35   mm	Processing (Melt) Temp	304 - 327	°C	
Injection Rate     Fast       Back Pressure     0.345 - 0.689     MPa       Screw Speed     45 - 75     rpm       Cushion     3.18 - 6.35     mm	Melt Temperature (Aim)	316	°C	
Back Pressure 0.345 - 0.689 MPa   Screw Speed 45 - 75 rpm   Cushion 3.18 - 6.35 mm	Mold Temperature	82.2 - 121	°C	
Screw Speed     45 - 75     rpm       Cushion     3.18 - 6.35     mm	Injection Rate	Fast		
Cushion     3.18 - 6.35     mm	Back Pressure	0.345 - 0.689	MPa	
	Screw Speed	45 - 75	rpm	
Injection instructions	Cushion	3.18 - 6.35	mm	
	Injection instructions			

The minimum injection pressure required to fill the part should be used for the first stage. The hold pressure should be set between 50% and 75% of the injection pressure.

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## Recommended distributors for this material

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