

## Product Data Sheet

**Product : Quadrant Polypenco Korea PC Polycarbonate, Unfilled, extruded**

**Categories : Polymer; Thermoplastic; Polycarbonate (PC)**

**Material Notes :** PC stock shapes are produced from selected batches of a specific UV-stabilized polycarbonate resin. This polymer shows a combination of good mechanical, thermal and electrical properties combined with a good chemical resistance.

Properties	Units	Test Methods	PC
<b>Physical Properties</b>			
Specific Gravity	g/cc	ASTM D 792	1.19
Water Absorption, Immersion, 24hr	%	ASTM D 570(2)	-
Water Absorption at Saturation, Immersion	%	ASTM D 570(2)	-
<b>Mechanical Properties</b>			
Rockwell Hardness, M	M scale	ASTM D 785	-
Rockwell Hardness, R	R scale	ASTM D 785	122
Hardness, Shore D	D	ASTM D 2240	-
Tensile Strength	MPa	ASTM D 638	72.6
Tensile Modulus	GPa	ASTM D 638	2.32
Elongation at Break	%	ASTM D 638	9.6
Flexural Yield Strength	MPa	ASTM D 790	102
Flexural Modulus	GPa	ASTM D 790	2.36
Compressive Strength	MPa	10% Def.; ASTM D 695	-
Compressive Modulus	GPa	ASTM D 695	-
Shear Strength	MPa	ASTM D 732	-
Coefficient of Friction; Dry vs. Steel	-	QTM 55007	-
K (wear) Factor	mm <sup>3</sup> /N-M	QTM 55010	-
Limiting Pressure Velocity; 4:1 safety factor	MPa-m/sec	QTM 55007	-
Izod Impact, Notched	J/m	ASTM D 256	94
<b>Electrical Properties</b>			
Surface Resistivity per Square	Ω	EOS/ESD S11.11	-
Dielectric Constant	-	ASTM D 150	-
Dielectric Strength; Short term	kV/mm	ASTM D 149	-

Dissipation Factor - ASTM D 150 -

### Thermal Properties

Coefficient of Thermal Expansion; CTE, linear	µm/m-°C	ASTM E 831	-
Thermal Conductivity	W/m-K	ASTM F 433	-
Melting point ; Crystalline, Peak	°C	ASTM D 3418	-
Maximum Service Temperature, Air	°C	Long Term	-
Deflection Temperature at 1.8 MPa (264psi)	°C	ASTM D 648	150
Glass Transition Temp, Tg		ASTM D 3418	-
Flammability, UL94 ; 1/8inch(Estimated Rating)	-	-	V-2

### Compliance Property Comments

3A-Dairy	No
Canada AG	No
FDA	No
NSF	No
USDA	No
RoHS	Yes

### Descriptive Properties

Color	Natural / Black
Machinability	1-10, 1=Easier to Machine 3

### Chemical Resistance Properties

Acid, Strong (pH1-3)	Unacceptable
Acids, Weak	Acceptable
Alcohls	Acceptable
Alkalies, Weak	Unacceptable
Alkalies, Strong (pH 11-14)	Acceptable
Chlorinated Solvent	Unacceptable
Conductive / Static Dissipative	No
Continuous Sunlight	Limited
Hot Water / Steam	Limited
Hydrocarbons – Aliphatic	Limited
Hydrocarbons – Aromatic	Unacceptable
Inorganic Salt Solution	Acceptable

## Product Data Sheet

**Product : Quadrant Polypenco Korea PC WHITE Polycarbonate, Unfilled, extruded**

**Categories : Polymer; Thermoplastic; Polycarbonate (PC-WHITE)**

**Material Notes :** PC stock shapes are produced from selected batches of a specific UV-stabilized polycarbonate resin. This polymer shows a combination of good mechanical, thermal and electrical properties combined with a good chemical resistance.

Properties	Units	Test Methods	PC WHITE
<b>Physical Properties</b>			
Specific Gravity	g/cc	ASTM D 792	1.21
Water Absorption, Immersion, 24hr	%	ASTM D 570(2)	0.15
Water Absorption at Saturation, Immersion	%	ASTM D 570(2)	0.32
<b>Mechanical Properties</b>			
Rockwell Hardness, M	M scale	ASTM D 785	-
Rockwell Hardness, R	R scale	ASTM D 785	122
Hardness, Shore D	D	ASTM D 2240	-
Tensile Strength	MPa	ASTM D 638	73.7
Tensile Modulus	GPa	ASTM D 638	2.26
Elongation at Break	%	ASTM D 638	13
Flexural Yield Strength	MPa	ASTM D 790	104
Flexural Modulus	GPa	ASTM D 790	2.33
Compressive Strength	MPa	10% Def.; ASTM D 695	79.3
Compressive Modulus	GPa	ASTM D 695	2.07
Shear Strength	MPa	ASTM D 732	63.4
Coefficient of Friction; Dry vs. Steel	-	QTM 55007	-
K (wear) Factor	mm <sup>3</sup> /N-M	QTM 55010	-
Limiting Pressure Velocity; 4:1 safety factor	MPa-m/sec	QTM 55007	-
Izod Impact, Notched	J/m	ASTM D 256	121
<b>Electrical Properties</b>			
Surface Resistivity per Square	Ω	EOS/ESD S11.11	≥ 1X10 <sup>13</sup>
Dielectric Constant	-	ASTM D 150	3.17 @Frequency 1e+6 Hz
Dielectric Strength; Short term	kV/mm	ASTM D 149	15.7

Dissipation Factor - ASTM D 150 0.0009  
@Frequency 1e+6 Hz

### Thermal Properties

Coefficient of Thermal Expansion; CTE, linear	µm/m-°C	ASTM E 831	70.2 @Temperature -40.0 - 149 °C
Thermal Conductivity	W/m-K	ASTM F 433	0.186
Melting point ; Crystalline, Peak	°C	ASTM D 3418	-
Maximum Service Temperature, Air	°C	Long Term	121
Deflection Temperature at 1.8 Mpa (264psi)	°C	ASTM D 648	143
Glass Transition Temp, Tg		ASTM D 3418	145
Flammability, UL94 ; 1/8inch(Estimated Rating)	-	-	HB

### Compliance Property

### Comments

3A-Dairy	No
Canada AG	No
FDA	No
NSF	No
USDA	No
RoHS	Yes

### Descriptive Properties

Color	Natural / Black
Machinability	1-10, 1=Easier to Machine 3

### Chemical Resistance Properties

Acid, Strong (pH1-3)	Unacceptable
Acids, Weak	Acceptable
Alcohols	Acceptable
Alkalies, Weak	Unacceptable
Alkalies, Strong (pH 11-14)	Acceptable
Chlorinated Solvent	Unacceptable
Conductive / Static Dissipative	No
Continuous Sunlight	Limited
Hot Water / Steam	Limited
Hydrocarbons – Aliphatic	Limited
Hydrocarbons – Aromatic	Unacceptable
Inorganic Salt Solution	Acceptable

## Product Data Sheet

**Product : Quadrant Polypenco Korea PC/ABS Polycarbonate/Acrylonitrile-Butadiene-Styrene, Unfilled, extruded**

**Categories : Polymer; Thermoplastic; Polycarbonate/Acrylonitrile-Butadiene-Styrene (PC/ABS)**

**Material Notes :** PC/ABS stock shapes are produced from selected batches of a specific UV-stabilized polycarbonate resin. This polymer shows a combination of good mechanical, thermal and electrical properties combined with a good chemical resistance.

Properties	Units	Test Methods	PC/ABS
<b>Physical Properties</b>			
Specific Gravity	g/cc	ASTM D 792	1.186
Water Absorption, Immersion, 24hr	%	ASTM D 570(2)	-
Water Absorption at Saturation, Immersion	%	ASTM D 570(2)	-
<b>Mechanical Properties</b>			
Rockwell Hardness, M	M scale	ASTM D 785	-
Rockwell Hardness, R	R scale	ASTM D 785	118
Hardness, Shore D	D	ASTM D 2240	-
Tensile Strength	MPa	ASTM D 638	67.4
Tensile Modulus	GPa	ASTM D 638	2.50
Elongation at Break	%	ASTM D 638	17.0
Flexural Yield Strength	MPa	ASTM D 790	100
Flexural Modulus	GPa	ASTM D 790	2.46
Compressive Strength	MPa	10% Def.; ASTM D 695	-
Compressive Modulus	GPa	ASTM D 695	-
Shear Strength	MPa	ASTM D 732	-
Coefficient of Friction; Dry vs. Steel	-	QTM 55007	-
K (wear) Factor	mm <sup>3</sup> /N-M	QTM 55010	-
Limiting Pressure Velocity; 4:1 safety factor	MPa-m/sec	QTM 55007	-
Izod Impact, Notched	J/m	ASTM D 256	156
<b>Electrical Properties</b>			
Surface Resistivity per Square	Ω	EOS/ESD S11.11	-
Dielectric Constant	-	ASTM D 150	- @Frequency 1e+6 Hz
Dielectric Strength; Short term	kV/mm	ASTM D 149	-

Dissipation Factor - ASTM D 150 @Frequency 1e+6 Hz

### Thermal Properties

Coefficient of Thermal Expansion; CTE, linear	µm/m-°C	ASTM E 831	- @Temperature -40.0 - 149 °C
Thermal Conductivity	W/m-K	ASTM F 433	-
Melting point ; Crystalline, Peak	°C	ASTM D 3418	235 ~ 275
Maximum Service Temperature, Air	°C	Long Term	-
Deflection Temperature at 1.8 MPa (264psi)	°C	ASTM D 648	117
Glass Transition Temp, Tg		ASTM D 3418	-
Flammability, UL94 ; 1/8inch(Estimated Rating)	-	-	V-0

### Compliance Property Comments

3A-Dairy	No
Canada AG	No
FDA	No
NSF	No
USDA	No
RoHS	Yes

### Descriptive Properties

Color	Natural / Black
Machinability	1-10, 1=Easier to Machine 3

### Chemical Resistance Properties

Acid, Strong (pH1-3)	Unacceptable
Acids, Weak	Acceptable
Alcohls	Acceptable
Alkalies, Weak	Unacceptable
Alkalies, Strong (pH 11-14)	Acceptable
Chlorinated Solvent	Unacceptable
Conductive / Static Dissipative	No
Continuous Sunlight	Limited
Hot Water / Steam	Limited
Hydrocarbons – Aliphatic	Limited
Hydrocarbons – Aromatic	Unacceptable
Inorganic Salt Solution	Acceptable

Ketones, Esters

Unacceptable

## Miscellaneous Properties

Targeted Usage

Structural Uses

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