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Schematic Grade Diagram

Position among Engineering Plastics

Available Grades

U-100 (neat polymer)

P Series

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U Series

AX Series

Precautions in molding

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U-polymer

P series resins composite grade

(1) L-1003PA

Characteristics

Heat resistance, creep resistance, and excellent lubricant

Properties

[Print Table on A4 Paper](#)

	Item	ASTM	Unit: SI (conventional)	L-1003PA
Mechanical Properties	Density	D-792	-	1.23
	Water absorption (1/8", 24hrs)	D-570	%	0.26
	Light transmittance (Thickness: 3mm)	D-1003	%	-
	Tensile strength	D-638	MPa {kg/cm ² }	70
	Elongation at break	D-638	%	60
	Bending strength	D-790	MPa {kg/cm ² }	82 {840}
	Bending modulus	D-790	GPa {kg/cm ² }	2.2
	Compressive strength (Yield)	D-695	MPa {kg/cm ² }	-
	Izod impact strength (1/8", with notch)	D-256	J/m {kg-Ecm/cm}	280
	Rockwell hardness	D-785	R	123
Thermal properties	Deflection temperature under load 1.8MPa {18.6kg/cm ² }	D-648	°C	175
	Linear expansion coefficient	D-696	10 ⁻⁵ /K {10 ⁻⁵ cm/cm/°C}	6.2
	Dielectric breakdown strength	D-149	MV/m {kv/mm}	31
	Specific volume resistivity	D-257	Ωm {Ωcm}	2x10 ¹⁴ {2x10 ¹⁶ }
Electrical Properties	Dielectric constant (10 ⁶ Hz)	D-150	PF/m	27
	Dielectric dissipation factor (10 ⁶ Hz)	D-150	-	0.01
	Ark resistance	D-495	s	127
	Tracking resistance	IEC	V	-
Other properties	Molding shrinkage (Thickness: 3mm)	-	%	0.8
	Flow direction, orthogonal direction			

<Technical Data>

Properties of lubricant materials

Item	L-1003PA	POM
Deflection temperature under load 1.8MPa {18.6kg/cm ² }	175	110
Limiting PV value	935	376
kPa • m/s {kg/cm ² • cm/s}	{954}	{383}
Coefficient of dynamic coefficient*	0.2~0.3	0.2~0.3
Relative abrasion* {mm ³ /km • kg}	0.195	2.13
Dimensional stability	◎	Δ
Creep resistance	◎	O
Rigidity	O	O
Chemical resistance	Δ	◎

*Counterpart: S45C ◎: Excellent O: Good, Δ: inferior

(2)PT-3020**Characteristics**

- Dimensional accuracy (planarity)
- Heat resistance
- Creep resistance and elasticity
- Rigidity

Properties[Print Table on A4 Paper](#)

	Item	ASTM	Unit: SI (conventional)	PT-3020
Mechanical Properties	Density	D-792	-	1.36
	Water absorption (1/8", 24hrs)	D-570	%	0.12
	Light transmittance (Thickness: 3mm)	D-1003	%	-
	Tensile strength	D-638	MPa {kg/cm ² }	67
	Elongation at break	D-638	%	6
	Bending strength	D-790	MPa {kg/cm ² }	111
	Bending modulus	D-790	GPa {kg/cm ² }	3.8
	Compressive strength (Yield)	D-695	MPa {kg/cm ² }	-
	Izod impact strength (1/8", with notch)	D-256	J/m {kg-Ecm/cm}	60
	Rockwell hardness	D-785	R	-
Thermal properties	Deflection temperature under load 1.8MPa {18.6kg/cm ² }	D-648	°C	165
	Linear expansion coefficient	D-696	10 ⁻⁵ /K {10 ⁻⁵ cm/cm/°C}	3.5~4.0/3.8~4.3
	Dielectric breakdown strength	D-149	MV/m {kv/mm}	-
Electrical Properties	Specific volume resistivity	D-257	Ωm {Ωcm}	-
	Dielectric constant (10 ⁶ Hz)	D-150	PF/m	-
	Dielectric dissipation factor(10 ⁶ Hz)	D-150	-	-
	Ark resistance	D-495	s	-
	Tracking resistance	IEC	V	-
Other properties	Molding shrinkage (Thickness: 3mm)	-	%	0.3~0.4/0.4~0.5
	Flow direction, orthogonal direction			

(3)C300VN**Characteristics**

- Flame resistant, transparent (flame resistance: UL94 V-0, 0.8 mmt)
- High flow

Properties[Print Table on A4 Paper](#)

	Item	ASTM	Unit: SI (conventional)	C300VN
Mechanical Properties	Density	D-792	-	1.29
	Water absorption (1/8", 24hrs)	D-570	%	0.24
	Light transmittance (Thickness: 3mm)	D-1003	%	-
	Tensile strength	D-638	MPa {kg/cm ² }	75
	Elongation at break	D-638	%	40
	Bending strength	D-790	MPa {kg/cm ² }	95
	Bending modulus	D-790	GPa {kg/cm ² }	2.5
	Compressive strength (Yield)	D-695	MPa {kg/cm ² }	-

Thermal properties	Izod impact strengtn (1/8", with notch)	D-256	J/m {kg-Ecm/cm}	65
	Rockwell hardness	D-785	R	-
	Deflection temperature under load 1.8MPa {18.6kg/cm ² }	D-648	°C	155
	Linear expansion coefficient	D-696	10 ⁻⁵ /K {10 ⁻⁵ cm/cm/°C}	6.5
	Dielectric breakdown strength	D-149	MV/m {kv/mm}	30
Electrical Properties	Specific volume resistivity	D-257	Ωm {Ωcm}	2x10 ¹⁴ {2x10 ¹⁶ }
	Dielectric constant (10 ⁶ Hz)	D-150	PF/m	26
	Dielectric dissipation factor(10 ⁶ Hz)	D-150	-	0.01
	Ark resistance	D-495	s	125
	Tracking resistance	IEC	V	175
Other properties	Molding shrinkage (Thickness: 3mm)	-	%	0.8
	Flow direction, orthogonal direction			

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