

LNPTM VERTONTM COMPOUND UX03320

PDX-U-03320

DESCRIPTION

LNP VERTON UX03320 is a compound based on Polyphthalamide (PPA) resin containing 50% long glass fiber and proprietary fillers. Added feature of this grade is Structural.

GENERAL INFORMATION	
Features	High stiffness/Strength, No PFAS intentionally added
Fillers	Glass Fiber, Proprietary Filler
Polymer Types	Polyphthalamide (PPA)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Exteriors
Building and Construction	Building Component
Consumer	Sport/Leisure, Home Appliances, Commercial Appliance
Industrial	Electrical, Industrial General

TYPICAL PROPERTY VALUES

Revision 20231127

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL (1)			
Tensile Stress, break	220	MPa	ASTM D638
Tensile Strain, break	1.9	%	ASTM D638
Tensile Modulus, 5 mm/min	18200	MPa	ASTM D638
Flexural Stress	300	MPa	ASTM D790
Flexural Modulus	18000	MPa	ASTM D790
Tensile Stress, break	200	MPa	ISO 527
Tensile Strain, break	1.9	%	ISO 527
Tensile Modulus, 1 mm/min	20300	MPa	ISO 527
Flexural Stress, break, 2 mm/min	360	MPa	ISO 178
Flexural Modulus, 2 mm/min	17700	MPa	ISO 178
IMPACT (1)			
Izod Impact, unnotched, 23°C	800	J/m	ASTM D4812
Izod Impact, notched, 23°C	300	J/m	ASTM D256
Multiaxial Impact	19	J	ISO 6603
Instrumented Dart Impact Total Energy, 23°C	15	J	ASTM D3763
Izod Impact, unnotched 80*10*4 +23°C	70	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	38	kJ/m²	ISO 180/1A
THERMAL (1)			
HDT, 1.82 MPa, 3.2mm, unannealed	260	°C	ASTM D648
CTE, -40°C to 40°C, flow	1.2E-05	1/°C	ASTM E831



PROFERTIES TYPICAL VAILUES UNITS TEST METHODS CTE, 40°C to 40°C, xiflow 2.26.05 1/°C ASTM E831 CTE, 40°C to 40°C, xiflow 2.26.05 1/°C ISO 11359-2 HDT, 4f, 1.8 MPa Flatva 80°10′4 sp=64mm 2.75 °C ISO 75/Af PHYSICAL. ⁽¹⁾ US ASTM D570 STM D79 Moisture Aborption, (23°C/50% RH/24 hrs) 0.2 % ASTM D570 ASTM D570 Mold Shrinkage, flow, 24 hrs ⁽¹⁾ 0.5 − 0.1 % ASTM D955 STM D955 Mold Shrinkage, flow, 24 hrs ⁽²⁾ 0.05 − 0.2 % ASTM D955 STM D955 Mold Shrinkage, flow, 24 hrs ⁽²⁾ 0.05 − 0.2 % ASTM D955 STM D955 Mold Shrinkage, flow, 24 hrs ⁽²⁾ 0.05 − 0.2 % ASTM D955 STM D955 Spiral flow (3mm) 0.15 % C SASIM D955 Spiral flow (3mm) 7.0 cm SABIC method Spiral flow (3mm) 0.3 9.0 SO 294 Name CHARACTERISTICS ⁽¹⁾ 2.2 3.2 1.2 1.2 Use loop (2a y 4.4) 4.2 4.2					
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PHYSICAL ¹¹ Density 1.63 g/m² ASTM D792 Moisture Absorption, (23°C/50′RH/24 hrs) 0.2 % ASTM D570 Mold Shrinkage, flow, 24 hrs ⁽²⁾ 0.05 − 0.1 % ASTM D955 Mold Shrinkage, xflow, 24 hrs ⁽²⁾ 0.06 % ASTM D955 Mold Shrinkage, xflow, 24 hrs ⁽²⁾ 0.06 % \$0.294 Mold Shrinkage, xflow, 24 hrs ⁽²⁾ 0.06 % \$0.294 Mold Shrinkage, xflow, 24 hrs ⁽²⁾ 0.06 % \$0.294 Spiral flow (Jamy) 0.0 cm \$ABIC method Spiral flow (Jamy) 0.0 cm \$ABIC method Spiral flow (Jamy) 0.0 cm \$0.20 Moisture Absorption (23°C / 50% RH) 0.3 3.0 \$0.2 Uk Plow Card Link 5 55.29-101284433 7 \$0.2 Uk Recognized, 94HB Flame Class Rating ⁽³⁾ 20-150 \$0.2 \$0.2 Drying Temperature 10-150 \$0.2 \$0.2 Drying Temperature 30.3 \$0.2 <td< th=""><th>CTE, -40°C to 40°C, xflow</th><th>2.2E-05</th><th>1/°C</th><th>ISO 11359-2</th></td<>	CTE, -40°C to 40°C, xflow	2.2E-05	1/°C	ISO 11359-2	
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Mold Shrinkage, xflow, 24 hrs ⁽²⁾ 0.08 - 0.2%ATM D955Mold Shrinkage, flow, 24 hrs ⁽²⁾ 0.06%\$0.294Spiral flow (1mm)0.15cmxmxmSpiral flow (3mm)70cmxmxmDesity1.63ycmxmxmMoisture Absorption (23°C / 50% RH)0.3xmxmxmU. Yellow Card Link453.99.101284433xmxmymU. Yellow Card Link20-150xmxmymDrying Temperature10-150xmxmymDrying Time453.99.101284433xmymymDrying Temperature10-150xmymymDrying Time10-150xmymymMelt Temperature315-330xmymymMelt Temperature315-330xmymymMiddle-Zone 2 Temperature30-345xmymymMiddle-Zone 2 Temperature315-325xmymymMold Temperature40-165xmymymMold Temperature40-165xmymymMold Temperature40-165xmymymMold Temperature40-165xmymymMold Temperature40-165xmymymMold Temperature40-165xmymymMold Temperature40-165xmymymMold Temperature40-165xmymym <tr< th=""><th>Moisture Absorption, (23°C/50% RH/24 hrs)</th><th>0.2</th><th>%</th><th>ASTM D570</th></tr<>	Moisture Absorption, (23°C/50% RH/24 hrs)	0.2	%	ASTM D570	
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Mold Shrinkage, xflow, 24 hrs (2)0.15%150.294Spiral flow (1mm)30cmABIC methodSpiral flow (3mm)70cmABIC methodDensity1.63ycm³150.183Moisture Absorption (23°C / 50% RH)3.2150.2LY Yellow Card Link£453.29.101.284433UY Le Recognized, 94HB Flame Class Rating (3)20.8mmU.94Dying Temperature120-150C-Drying Time4Hrs-Maximum Moisture Content315-330C-Melt Temperature30-345C-Middle - Zone 2 Temperature30-330C-Meld - Zone 2 Temperature30-330C-Moid Temperature315-325C-Moid Temperature315-325C-Moid Temperature40-165C-Moid Temperature40-165C-Moid Temperature40-165MPa	Mold Shrinkage, xflow, 24 hrs ⁽²⁾	0.08 – 0.2	%	ASTM D955	
Spiral flow (Timm)30cmSABIC methodSpiral flow (3mm)70cmSABIC methodDensity1.63g/m³ISO 1183Moisture Absorption (2³°C / 50%RH)0.3xISO 62EAMAC CHARACTERISTICS (3)UL Yellow Card Link£45329-101284433xxUL Yellow Card Link20mmU 94INJECTION MOLDING (4)Drying Temperature120 - 150xxMaximum Moisture Content1.5xMelt Temperature315 - 330xxFont - Zone 3 Temperature320 - 330xxMiddle - Zone 2 Temperature320 - 330xxMeld Temperature315 - 325xxMoid Temperature315 - 325xxMold Temperature310 - 325xxM	Mold Shrinkage, flow, 24 hrs ⁽²⁾	0.06	%	ISO 294	
Spiral flow (3mm)70cmSABIC methodDensity1.63g/cm³ISO 1183Moisture Absorption (23°C / 50% RH)0.3xtSO 62FLAME CHARACTERISTICS **UL Yellow Card Link£45329-101284433-xxUL Recognized, 94HB Flame Class Rating **20.8mmU 194INJECTION MOLDING **Drying Temperature120 − 150∞xxPrying Time4HrsxMaximum Moisture Content0.15%xMelt Temperature315 − 330∞cxFront - Zone 3 Temperature320 − 330∞cxMiddle - Zone 2 Temperature320 − 330∞cxMiddle - Zone 2 Temperature315 − 325∞cxMold Temperature140 − 165∞xxMold Temperature<	Mold Shrinkage, xflow, 24 hrs (2)	0.15	%	ISO 294	
Density1.63g/cm³ISO 1183Moisture Absorption (23°C / 50% RH)0.3xISO 62FLAME CHARACTERISTICS (³)UL Yellow Card Link£45329-101284433UL Recognized, 94HB Flame Class Rating (³)∞∞WUINJECTION MOLDING (⁴)Drying Temperature120 – 150°C-Drying Time4HrsMelt Temperature0.15%-Front - Zone 3 Temperature315 – 330°C-Middle - Zone 2 Temperature320 – 330°C-Rear - Zone 1 Temperature315 – 325°C-Mold Temperature140 – 165°C-Back PressureMPa	Spiral flow (1mm)	30	cm	SABIC method	
Moisture Absorption (23°C / 50% RH) 0.3 \$ 150 62 FLAME CHARACTERISTICS (3) £45329-101284433 - 2 - 2 UL Yellow Card Link £45329-101284433 - 2 - 2 UL Recognized, 94HB Flame Class Rating (3) ≥0.8 mm UL 94 INJECTION MOLDING (4) Drying Temperature 120 – 150 °C - 2 Drying Time 4 Hrs - 2 Maximum Moisture Content 0.15 % - 2 Melt Temperature 315 – 330 °C - 2 Front - Zone 3 Temperature 320 – 330 °C - 2 Middle - Zone 2 Temperature 315 – 325 °C - 2 Mold Temperature 140 – 165 °C - 2 Mold Temperature 140 – 165 °C - 2 Mold Temperature 20 – 20.3 MPa - 2	Spiral flow (3mm)	70	cm	SABIC method	
FLAME CHARACTERISTICS ⁽³⁾ UL Yellow Card Link	Density	1.63	g/cm³	ISO 1183	
UL Yellow Card Link£45329-101284433UL Recognized, 94HB Flame Class Rating (3)>0.8mmUL 94INJECTION MOLDING (4)Urying Temperature120 – 150°C-Drying Time4Hrs-Maximum Moisture Content0.15%-Melt Temperature315 – 330°C-Front - Zone 3 Temperature320 – 330°C-Middle - Zone 2 Temperature320 – 330°C-Mear - Zone 1 Temperature315 – 325°C-Mold Temperature140 – 165°C-Back PressureMPa	Moisture Absorption (23°C / 50% RH)	0.3	%	ISO 62	
UL Recognized, 94HB Flame Class Rating (3) 20.8 mm Ul 94 INECTION MOLDING (4) Drying Temperature 120 120 150 °C Drying Time 44 Hrs Maximum Moisture Content 151 330 °C Melt Temperature 1315 - 330 °C Front - Zone 3 Temperature 1320 330 °C Middle - Zone 2 Temperature 1320 330 °C Rear - Zone 1 Temperature 140 140 - 165 °C Mold Temperature 140 140 - 165 °C Maximum Mold Temperature 140 140 - 165 °C Maximum Molestre Content 140 - 165 °C M	FLAME CHARACTERISTICS (3)				
INJECTION MOLDING ⁽⁴⁾ Drying Temperature120 – 150°CDrying Time4HrsMaximum Moisture Content0.15%Melt Temperature315 – 330°CFront - Zone 3 Temperature320 – 345°CMiddle - Zone 2 Temperature320 – 330°CRear - Zone 1 Temperature315 – 325°CMold Temperature140 – 165°CBack Pressure0.2 – 0.3MPa	UL Yellow Card Link	<u>E45329-101284433</u>	-	-	
Drying Temperature 120 – 150 °C Drying Time 4 Hrs Maximum Moisture Content 0.15 % Melt Temperature 315 – 330 °C Front - Zone 3 Temperature 330 – 345 °C Middle - Zone 2 Temperature 320 – 330 °C Rear - Zone 1 Temperature 315 – 325 °C Mold Temperature 140 – 165 °C Back Pressure 0.2 – 0.3 MPa	UL Recognized, 94HB Flame Class Rating (3)	≥0.8	mm	UL 94	
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Maximum Moisture Content 0.15 % Melt Temperature 315 – 330 °C Front - Zone 3 Temperature 330 – 345 °C Middle - Zone 2 Temperature 320 – 330 °C Rear - Zone 1 Temperature 315 – 325 °C Mold Temperature 140 – 165 °C Back Pressure 0.2 – 0.3 MPa	Drying Temperature	120 – 150	°C		
Melt Temperature 315 – 330 °C Front - Zone 3 Temperature 330 – 345 °C Middle - Zone 2 Temperature 320 – 330 °C Rear - Zone 1 Temperature 315 – 325 °C Mold Temperature 140 – 165 °C Back Pressure 0.2 – 0.3 MPa	Drying Time	4	Hrs		
Front - Zone 3 Temperature 330 – 345 °C Middle - Zone 2 Temperature 320 – 330 °C Rear - Zone 1 Temperature 315 – 325 °C Mold Temperature 140 – 165 °C Back Pressure 0.2 – 0.3 MPa	Maximum Moisture Content	0.15	%		
Middle - Zone 2 Temperature 320 – 330 °C Rear - Zone 1 Temperature 315 – 325 °C Mold Temperature 140 – 165 °C Back Pressure 0.2 – 0.3 MPa	Melt Temperature	315 – 330	°C		
Rear - Zone 1 Temperature 315 – 325 °C Mold Temperature 140 – 165 °C Back Pressure 0.2 – 0.3 MPa	Front - Zone 3 Temperature	330 – 345	°C		
Mold Temperature 140 – 165 °C Back Pressure 0.2 – 0.3 MPa	Middle - Zone 2 Temperature	320 – 330	°C		
Back Pressure 0.2 – 0.3 MPa	Rear - Zone 1 Temperature	315 – 325	°C		
	Mold Temperature	140 – 165	°C		
Screw Speed 30 – 60 rpm	Back Pressure	0.2 – 0.3	MPa		
	Screw Speed	30 – 60	rpm		

⁽¹⁾ The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

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⁽²⁾ Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

⁽³⁾ UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

⁽⁴⁾ Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.