LNP™ KONDUIT™ COMPOUND PX13012

DESCRIPTION

LNP KONDUIT PX13012 compound is based on Nylon 6 resin containing proprietary thermal filler. Added features of this grade include: Thermally Conductive, Electrically Insulative and Non-Brominated, Non-Chlorinated Flame Retardant.

GENERAL INFORMATION	
Features	Flame Retardant, Thermally Conductive, Non Cl/Br flame retardant, Thermally conductive/Electrically isolative, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polyamide 6 (Nylon 6)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Building and Construction	Building Component
Consumer	Home Appliances
Electrical and Electronics	Mobile Phone - Computer - Tablets, Lighting
Industrial	Electrical, Material Handling

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 5 mm/min	68	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	1.2	%	ASTM D638
Tensile Modulus, 5 mm/min	10350	MPa	ASTM D638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	119	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	11800	MPa	ASTM D790
Tensile Stress, break, 5 mm/min	75	MPa	ISO 527
Tensile Strain, break, 5 mm/min	1.1	%	ISO 527
Tensile Modulus, 1 mm/min	13000	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	105	MPa	ISO 178
Flexural Modulus, 2 mm/min	12000	MPa	ISO 178
IMPACT [1]			
Izod Impact, unnotched, 23°C	152	J/m	ASTM D4812
Izod Impact, notched, 23°C	15	J/m	ASTM D256
Izod Impact, unnotched 80*10*4 +23°C	9	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	3	kJ/m²	ISO 180/1A
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm	203	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	137	°C	ASTM D648
CTE, -40°C to 40°C, flow	3.3E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	4.4E-05	1/°C	ASTM E831

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Thermal Conductivity through-plane, 60*60*3mm plaque	1.2	W/m-K	ISO 22007-2
Thermal Conductivity in-plane, 60*60*3mm plaque	5.5	W/m-K	ISO 22007-2
CTE, -30°C to 80°C, flow	3.9E-05	1/°C	ISO 11359-2
CTE, -30°C to 80°C, xflow	5.5E-05	1/°C	ISO 11359-2
Ball Pressure Test, 165°C +/- 2°C	PASSES	-	IEC 60695-10-2
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	203	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	160	°C	ISO 75/Af
Relative Temp Index, Elec [2]	130	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	100	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	130	°C	UL 746B
PHYSICAL [1]			
Mold Shrinkage on Tensile Bar, flow [3]	0.7	%	SABIC method
Mold Shrinkage, flow, 24 hrs [3]	0.55	%	ASTM D955
Mold Shrinkage, xflow, 24 hrs [3]	0.65	%	ASTM D955
Mold Shrinkage, flow, 24 hrs [3]	0.55	%	ISO 294
Mold Shrinkage, xflow, 24 hrs [3]	0.65	%	ISO 294
Density	1.68	g/cm³	ISO 1183
Water Absorption, (23°C/24hrs)	0.23	%	ISO 62-1
ELECTRICAL [1]			
Surface Resistivity	4.E+14	Ω	ASTM D257
Dielectric Strength, in oil, 1.6 mm	7.2	kV/mm	ASTM D149
Dielectric Strength, 1.6 mm	6.1	kV/mm	IEC 60243-1
Comparative Tracking Index (UL) {PLC}	0	PLC Code	UL 746A
Comparative Tracking Index [4]	600	V	IEC 60112
Hot-Wire Ignition (HWI), PLC 0	≥0.8	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 0	≥0.8	mm	UL 746A
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E45329-101769086	-	-
UL Recognized, 94V-0 Flame Class Rating	≥0.8	mm	UL 94
Glow Wire Ignitability Temperature, 0.8 mm	750	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.6 mm	775	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	800	°C	IEC 60695-2-13
Glow Wire Flammability Index, 0.8 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.6 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0 mm	960	°C	IEC 60695-2-12
INJECTION MOLDING [5]			
Drying Temperature	80	°C	
Drying Time	4	Hrs	
Maximum Moisture Content	0.15 – 0.25	%	
Melt Temperature	270 – 295	°C	
Front - Zone 3 Temperature	270 – 290	°C	
Middle - Zone 2 Temperature	270 – 290	°C	
Rear - Zone 1 Temperature	260 – 275	°C	
Mold Temperature	85 – 100	°C	
Back Pressure	0.2 – 0.3	MPa	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Screw Speed	20 – 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.
(2) 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.
(3) 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.
(4) Value shown here is based on internal measurement.
(5) 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.

ADDITIONAL PRODUCT NOTES

No PFAS intentionally added: The grade listed in this document does not contain PFAS intentionally added during Seller's manufacturing process and is not expected to contain unintentional PFAS impurities. Each user is responsible for evaluating the presence of unintentional PFAS impurities.

DISCLAIMER