

## LNPTM STAT-KONTM COMPOUND ZE004XXQ

ZC-1004XXQ

## **DESCRIPTION**

Industrial

LNP STAT-KON ZE004XXQ compound is based on Polyphenylene Ether / Polystyrene (PPE/PS) blend containing 20% carbon fiber. Added features of this grade include: Electrically Conductive.

GENERAL INFORMATION	
Features	Electrically Conductive, Carbon fiber filled, High stiffness/Strength, No PFAS intentionally added
Fillers	Carbon Fiber
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Injection Molding
INDUSTRY	SUB INDUSTRY
Electrical and Electronics	Electronic Components

Material Handling

## **TYPICAL PROPERTY VALUES**

Revision 20231109

PROPERTIES         TYPICAL VALUES         UNITS         TEST METHODS           MECHANICAL <sup>(1)</sup> ************************************				
Tensile Stress, brk, Type I, 5 mm/min         62         MPa         ASTM D638           Tensile Strain, brk, Type I, 5 mm/min         1         4         8         ASTM D638           Tensile Modulus, 5 mm/min         14200         MPa         ASTM D638           Flexural Strength, 1.3 mm/min, 50 mm span         102         MPa         ASTM D790           Tensile Stress, break, 5 mm/min         60         MPa         SIM D790           Tensile Strain, break, 5 mm/min         9.9         %         50 527           Tensile Modulus, 1 mm/min         14500         MPa         50 527           Tensile Modulus, 2 mm/min         9.9         MPa         50 178           Flexural Strength, 2 mm/min         1100         MPa         50 178           Flexural Strength, 2 mm/min         2 mm/min         50 178         50 178           Brown Jone         4 mm/min         50 178         50 178           Bro	PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Tensile Stress, brk, Type I, 5 mm/min         62         MPa         ASTM D638           Tensile Strain, brk, Type I, 5 mm/min         1         4         8         ASTM D638           Tensile Modulus, 5 mm/min         14200         MPa         ASTM D638           Flexural Strength, 1.3 mm/min, 50 mm span         102         MPa         ASTM D790           Tensile Stress, break, 5 mm/min         60         MPa         SIM D790           Tensile Strain, break, 5 mm/min         9.9         %         50 527           Tensile Modulus, 1 mm/min         14500         MPa         50 527           Tensile Modulus, 2 mm/min         9.9         MPa         50 178           Flexural Strength, 2 mm/min         1100         MPa         50 178           Flexural Strength, 2 mm/min         2 mm/min         50 178         50 178           Brown Jone         4 mm/min         50 178         50 178           Bro	MECHANICAL (1)			
Tensile Modulus, 5 mm/min         14200         MPa         ASTM D638           Flexural Strength, 1.3 mm/min, 50 mm span         102         MPa         ASTM D790           Flexural Modulus, 1.3 mm/min, 50 mm span         11300         MPa         ASTM D790           Tensile Stress, break, 5 mm/min         60         MPa         150 527           Tensile Modulus, 1 mm/min         14500         MPa         150 527           Flexural Strength, 2 mm/min         95         MPa         150 178           Flexural Modulus, 2 mm/min         1100         MPa         50 178           IMPACT ****         1100         MPa         50 178           Impact, unnotched, 23°C         50         J/m         ASTM D4812           Izod Impact, notched, 23°C         50         J/m         ASTM D56           Izod Impact, unnotched 80*10*4+23°C         18         J/m²         ASTM D56           Izod Impact, notched 80*10*4+23°C         18         J/m²         50 180/14           Itomatic         10         20         ASTM D648           HDT, 0.45 MPa, 3.2 mm, unannealed         13         °C         ASTM D648           HDT, 1.82 MPa, 3.2 mm, unannealed         35         C         ASTM D648           CTE, 40°C to 40°C, filow		62	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span         102         MPa         ASTM D790           Flexural Modulus, 1.3 mm/min, 50 mm span         11300         MPa         ASTM D790           Tensile Stress, break, 5 mm/min         60         MPa         ISO 527           Tensile Strain, break, 5 mm/min         14500         MPa         ISO 527           Tensile Modulus, 1 mm/min         14500         MPa         ISO 178           Flexural Strength, 2 mm/min         95         MPa         ISO 178           Flexural Modulus, 2 mm/min         1100         MPa         SO 178           Impact Number         1         Processor         MPa         ASTM D4812           Icod Impact, unnotched, 23°C         250         J/m         ASTM D4812           Icod Impact, notched, 23°C         18         J/m         ASTM D256           Icod Impact, unnotched 80°10°4 + 23°C         18         J/m         ASTM D256           Icod Impact, notched 80°10°4 + 23°C         7         3         2         ASTM D481           InterMAL (**)         ************************************	Tensile Strain, brk, Type I, 5 mm/min	1	%	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span         11300         MPa         ASTM D790           Tensile Stress, break, 5 mm/min         60         MPa         ISO 527           Tensile Strain, break, 5 mm/min         0.9         %         ISO 527           Tensile Modulus, 1 mm/min         14500         MPa         ISO 527           Flexural Strength, 2 mm/min         95         MPa         ISO 178           Flexural Modulus, 2 mm/min         11100         MPa         ISO 178           Impact ("International Controlled, 23°C         250         J/m         ASTM D4812           Izod Impact, unnotched, 23°C         15         J/m         ASTM D256           Izod Impact, unnotched 80°10°4+23°C         18         J/m²         ISO 180/1U           Izod Impact, unnotched 80°10°4+23°C         7         Impact 10	Tensile Modulus, 5 mm/min	14200	MPa	ASTM D638
Tensile Stress, break, 5 mm/min         60         MPa         ISO 527           Tensile Strain, break, 5 mm/min         0.9         %         ISO 527           Tensile Modulus, 1 mm/min         14500         MPa         ISO 527           Flexural Strength, 2 mm/min         95         MPa         ISO 178           Flexural Modulus, 2 mm/min         1100         MPa         ISO 178           Impact (1)         WPa         So 178         MPa           Izod Impact, unnotched, 23°C         250         J/m         ASTM D4812           Izod Impact, unnotched, 23°C         18         I/m²         ISO 180/1U           Izod Impact, unnotched 80°10°4 + 23°C         18         I/m²         ISO 180/1U           Izod Impact, notched 80°10°4 + 23°C         7         Impact (1)         Impact (2)         ISO 180/1U           Itor, 0.45 MPa, 3.2 mm, unannealed         139         °C         ASTM D648           HDT, 0.45 MPa, 3.2 mm, unannealed         135         °C         ASTM D648           TEL, 40°C to 40°C, flow         3.5E         1/°C         ASTM E831           CTE, 40°C to 40°C, flow         3.5E         1/°C         ASTM E831	Flexural Strength, 1.3 mm/min, 50 mm span	102	MPa	ASTM D790
Tensile Strain, break, 5 mm/min         0.9         %         ISO 527           Tensile Modulus, 1 mm/min         14500         MPa         ISO 527           Flexural Strength, 2 mm/min         95         MPa         ISO 178           Flexural Modulus, 2 mm/min         11100         MPa         ISO 178           IMPACT (1)         V         V         V           Izod Impact, unnotched, 23°C         250         J/m         ASTM D4812           Izod Impact, notched, 23°C         65         J/m         ASTM D256           Izod Impact, unnotched 80°10°4 +23°C         18         Id/m²         ISO 180/1U           Izod Impact, notched 80°10°4 +23°C         7         Id/m²         ISO 180/1U           Itod Impact, notched 80°10°4 +23°C         7         Id/m²         ISO 180/1U           Itod Mpact, notched 80°10°4 +23°C         3         X         ISO 180/1U           InterMAL (1)         Y         Impact (200 mm)	Flexural Modulus, 1.3 mm/min, 50 mm span	11300	MPa	ASTM D790
Tensile Modulus, 1 mm/min         14500         MPa         ISO 527           Flexural Strength, 2 mm/min         95         MPa         ISO 178           IExural Modulus, 2 mm/min         11100         MPa         ISO 178           IMPACT (1)         Uman March (23°C         250         J/m         ASTM D4812           Izod Impact, unnotched, 23°C         250         J/m         ASTM D256           Izod Impact, unnotched 80°10°4 +23°C         18         I/m²         ISO 180/10           Idod Impact, notched 80°10°4 +23°C         7         I/m²         ISO 180/10           IteRMAL (1)         I/m²         ISO 180/10         Impact (200/10)         I/m²         ISO 180/10           HDT, 0.45 MPa, 3.2 mm, unannealed         139         °C         ASTM D648         ASTM D648           HDT, 1.82 MPa, 3.2 mm, unannealed         150         9.556         1/°C         ASTM E831           CTE, 40°C to 40°C, flow         5.556         1/°C         ASTM E831	Tensile Stress, break, 5 mm/min	60	MPa	ISO 527
Flexural Strength, 2 mm/min 95 MPa ISO 178 Flexural Modulus, 2 mm/min 1100 MPa ISO 178  IMPACT **  Ixod Impact, unnotched, 23°C 250 J/m ASTM D4812  Ixod Impact, unnotched, 23°C 250 J/m ASTM D256  Ixod Impact, unnotched 80°10°4 +23°C 188  ISO 180/10 ISO	Tensile Strain, break, 5 mm/min	0.9	%	ISO 527
Flexural Modulus, 2 mm/min 1100 MPa ISO 178  iMPACT (1)  izod Impact, unnotched, 23°C 250 J/m ASTM D4812  izod Impact, notched, 23°C 65 J/m ASTM D256  izod Impact, unnotched 80°10°4 +23°C 18 ISO 180/10 ISO 180	Tensile Modulus, 1 mm/min	14500	MPa	ISO 527
ind Impact, unnotched, 23°C 250 1/m ASTM D4812  izod Impact, unotched, 23°C 250 1/m ASTM D256  izod Impact, unnotched 80°10°4 +23°C 288 288 288 288 288 288 288 288 288 28	Flexural Strength, 2 mm/min	95	MPa	ISO 178
Izod Impact, unnotched, 23°C         250         J/m         ASTM D4812           Izod Impact, notched, 23°C         65         J/m         ASTM D256           Izod Impact, unnotched 80°10°4 +23°C         18         kJ/m²         ISO 180/10           Izod Impact, notched 80°10°4 +23°C         7         kJ/m²         ISO 180/1A           THERMAL <sup>(1)</sup> V         ASTM D648           HDT, 0.45 MPa, 3.2 mm, unannealed         139         °C         ASTM D648           HDT, 1.82 MPa, 3.2 mm, unannealed         135         °C         ASTM D648           CTE, -40°C to 40°C, flow         9.5E-6         1/°C         ASTM E831           CTE, -40°C to 40°C, xflow         7.5E-5         1/°C         ASTM E831	Flexural Modulus, 2 mm/min	11100	MPa	ISO 178
Izod Impact, notched, 23°C         65         J/m         ASTM D256           Izod Impact, unnotched 80°10°4 +23°C         18         kJ/m²         ISO 180/10           Izod Impact, notched 80°10°4 +23°C         7         kJ/m²         ISO 180/1A           THERMAL <sup>(1)</sup> ***         ASTM D648           HDT, 0.45 MPa, 3.2 mm, unannealed         139         °C         ASTM D648           HDT, 1.82 MPa, 3.2 mm, unannealed         135         °C         ASTM D648           CTE, -40°C to 40°C, flow         9.5E-6         1/°C         ASTM E831           CTE, -40°C to 40°C, xflow         7.5E-5         1/°C         ASTM E831	IMPACT (1)			
Izod Impact, unnotched 80*10*4 +23°C         18         KJ/m²         ISO 180/1U           Izod Impact, notched 80*10*4 +23°C         7         KJ/m²         ISO 180/1A           THERMAL (1)           HDT, 0.45 MPa, 3.2 mm, unannealed         139         °C         ASTM D648           HDT, 1.82 MPa, 3.2 mm, unannealed         135         °C         ASTM D648           CTE, -40°C to 40°C, flow         9.5E-6         1/°C         ASTM E831           CTE, -40°C to 40°C, xflow         7.5E-5         1/°C         ASTM E831	Izod Impact, unnotched, 23°C	250	J/m	ASTM D4812
Izod Impact, notched 80°10°4 +23°C         7         Izof Impact         Ixof Impact         Ixof Impact         Ixof Ixof Ixof Ixof Ixof Ixof Ixof Ixof	Izod Impact, notched, 23°C	65	J/m	ASTM D256
THERMAL (1)           HDT, 0.45 MPa, 3.2 mm, unannealed         139         °C         ASTM D648           HDT, 1.82 MPa, 3.2 mm, unannealed         135         °C         ASTM E831           CTE, -40°C to 40°C, rflow         7.5E-5         1/°C         ASTM E831	Izod Impact, unnotched 80*10*4 +23°C	18	kJ/m²	ISO 180/1U
HDT, 0.45 MPa, 3.2 mm, unannealed       139       °C       ASTM D648         HDT, 1.82 MPa, 3.2 mm, unannealed       135       °C       ASTM D648         CTE, 40°C to 40°C, flow       9.5E-6       1/°C       ASTM E831         CTE, 40°C to 40°C, xflow       7.5E-5       1/°C       ASTM E831	Izod Impact, notched 80*10*4 +23°C	7	kJ/m²	ISO 180/1A
HDT, 1.82 MPa, 3.2mm, unannealed       135       °C       ASTM D648         CTE, -40°C to 40°C, flow       9.5E-6       1/°C       ASTM E831         CTE, -40°C to 40°C, xflow       7.5E-5       1/°C       ASTM E831	THERMAL (1)			
CTE, -40°C to 40°C, flow       9.5E-6       1/°C       ASTM E831         CTE, -40°C to 40°C, xflow       7.5E-5       1/°C       ASTM E831	HDT, 0.45 MPa, 3.2 mm, unannealed	139	°C	ASTM D648
CTE, -40°C to 40°C, xflow 7.5E-5 1/°C ASTM E831	HDT, 1.82 MPa, 3.2mm, unannealed	135	°C	ASTM D648
•	CTE, -40°C to 40°C, flow	9.5E-6	1/°C	ASTM E831
CTE, -40°C to 40°C, flow 9.5E-6 1/°C ISO 11359-2	CTE, -40°C to 40°C, xflow	7.5E-5	1/°C	ASTM E831
	CTE, -40°C to 40°C, flow	9.5E-6	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow 7.5E-5 1/°C ISO 11359-2	CTE, -40°C to 40°C, xflow	7.5E-5	1/°C	ISO 11359-2



PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	141	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	135	°C	ISO 75/Af
PHYSICAL (1)			
Density	1.5	g/cm³	ISO 1183
Moisture Absorption, (23°C/50% RH/24 hrs)	0.02	%	ASTM D570
Water Absorption, (23°C/24hrs)	0.1	%	ASTM D570
Mold Shrinkage, flow <sup>(2)</sup>	0.1 – 0.2	%	SABIC method
Mold Shrinkage, xflow <sup>(2)</sup>	0.2 – 0.4	%	SABIC method
Density	1.5	g/cm³	ASTM D792
ELECTRICAL (1)			
Surface Resistivity (3)	1E02 – 1E06	Ω	ASTM D257
INJECTION MOLDING (4)			
Drying Temperature	120	°C	
Drying Time	4	Hrs	
Melt Temperature	300 – 305	°C	
Front - Zone 3 Temperature	300 – 310	°C	
Middle - Zone 2 Temperature	290 – 300	°C	
Rear - Zone 1 Temperature	275 – 290	°C	
Mold Temperature	80 – 110	°C	
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.
- (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) Measurement meets requirements as specified in ASTM D4496.
- (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.

## **DISCLAIMER**

Any sale by SABIC, its subsidiaries and affiliates (each a "seller"), is made exclusively under seller's standard conditions of sale (available upon request) unless agreed otherwise in writing and signed on behalf of the seller. While the information contained herein is given in good faith, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND NONINFRINGEMENT OF INTELLECTUAL PROPERTY, NOR ASSUMES ANY LIABILITY, DIRECT OR INDIRECT, WITH RESPECT TO THE PERFORMANCE, SUITABILITY OR FITNESS FOR INTENDED USE OR PURPOSE OF THESE PRODUCTS IN ANY APPLICATION. Each customer must determine the suitability of seller materials for the customer's particular use through appropriate testing and analysis. No statement by seller concerning a possible use of any product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right.