Premix Thermoplastics PRETHERM TPE 1050 Thermoplastic Elastomer, Boron Nitride / SEBS compound

Category : Polymer , Thermoplastic , Elastomer, TPE

Material Notes:

PRETHERM TPE 1050 is a thermoplastic elastomer based highly thermally conductive compound intended primarily for heat dissipation. It is used as gap filler between processor and heat sink or co-molded into plastic shell. Thermal conductivity is achieved with Boron nitride which is highly thermally conductive and electrically isolating. PRETHERM TPE 1050 can be injection-molded like an ordinary thermoplastic elastomer. It has adhesion to selected thermoplastics and metal contacts are also arranged. It can be used in co-injection molding e.g. molding the gasket directly in the phone casing. Recyclability is an added value. The material is silicone free. The electronics industry is moving towards smaller devices with an increasing amount of special features. The smaller the device the more attention should be paid to controlling the excess heat.Cost Savings Through a Simplified Production Process: Traditionally the silicon-based compounds and glues are used as an intermediate heat conductor from circuit board to metal plate. When choosing PRETHERM TPE compound instead, the production process will be simplified and accelerated radically; PRETHERM TPE can be co-moulded with metal without using any primers. PRETHERM TPE compounds are insulative and non-migrating and can therefore be placed directly into contact with sensitive electronics without the risk of short-circuits.Design and Processing:Production using normal thermoplastic processing methods; injection molding and extrusionEasy processability enables product designs with complex shapes and sizesMass-production friendly; fast cycle times, no need for vulcanisation nor primersRecyclable and RoHS compliantApplications: Heat sink, gap filler between metal and electric component in mobile phones, mobile phone base stations and other electronics as well as military application.Information from Premix OY

Order this product through the following link:
http://www.lookpolymers.com/polymer_Premix-Thermoplastics-PRETHERM-TPE-1050-Thermoplastic-Elastomer-Boron-Nitride-SEBS-compound.php

Physical Properties	Metric	English	Comments
Density	1.33 g/cc	0.0480 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	50	50	ISO 868
Tensile Strength	1.40 MPa	203 psi	ISO 37
Tensile Strength, Yield	1.50 MPa	218 psi	ISO 37
Elongation at Break	105 %	105 %	ISO 37
Elongation at Yield	65 %	65 %	ISO 37
Compression Set	64 % @Temperature 85.0 °C, Time 86400 sec	64 % @Temperature 185 °F, Time 24.0 hour	ISO 815:1991

Thermal Properties	Metric	English	Comments
Specific Heat Capacity			

Thermal Properties	Metric	English	Comments
	0.580 J/g-°C	0.139 BTU/lb-°F	
Thermal Conductivity	1.60 W/m-K	11.1 BTU-in/hr-ft²-°F	Hot Disk

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+13 ohm-cm	1.00e+13 ohm-cm	ISO D-257

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	200 °C	392 °F	Zone 1
	200 °C	392 °F	Zone 2
	200 °C	392 °F	Zone 3
	200 °C	392 °F	Zone 4
	200 °C	392 °F	Zone 5
Nozzle Temperature	200 °C	392 °F	
Mold Temperature	70.0 °C	158 °F	Moulding a 6 gram (shot weight) gasket with a 50 ton injection moulding machine having a screw diameter of 25[mm]
Injection Velocity	10.0 - 25.0 mm/sec	0.394 - 0.984 in/sec	Molding a 6 gram (shot weight) gasket with a 50 ton injection molding machine; screw diameter of 25 mm
	10.0 - 25.0 mm/sec	0.394 - 0.984 in/sec	Molding a 6 gram (shot weight) gasket with a 50 ton injection molding machine; screw diameter of 25 mm
Drying Temperature	<= 60.0 °C	<= 140 °F	Pre-drying
Dry Time	3 hour	3 hour	
Moisture Content	<= 0.040 %	<= 0.040 %	when produced
Hold Pressure	0.000 MPa	0.000 psi	
Back Pressure	0.300 MPa	43.5 psi	Moulding a 6 gram (shot weight) gasket with a 50 ton injection moulding machine having a screw diameter of 25[mm]
Cycle Time - Cooling	25 sec	25 sec	
Shelf Life	12.0 Month	12.0 Month	Normal Storing Conditions

Descriptive Properties	Value	Comments
Appearance	Granule	

Descriptive Properties	Value	Comments
Colour	White	
Holding Time(s)	5	
Injection time (s)	0.7	
Plasticising speed	25-80% of Max 480 rev/min	
Thermal Diffusivity(mm2/s)	2.1	

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