ExxonMobil Santoprene® 171-73 Thermoplastic Elastomer (discontinued **)

Categories: Polymer; Thermoplastic; Elastomer, TPE; Thermoplastic Vulcanizate Elastomer (TPV)

Material Notes: A soft, black, specialty thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. It complies with FDA regulations for rubber articles intended for repeated use, as well as those in contact with non-fatty, non-oily foods as closures and sealing gaskets. This grade of Santoprene TPV is shear-dependent and can be processed on conventional thermoplastics equipment for injection molding, extrusion or blow molding. It is polyolefin based and completely recyclable.

Key Features:

- This product, in principle, can be used in food contact applications in the USA (FDA). Migration or use limitations may apply.
- Complies with NSF Standard 51: Food Equipment Materials - Plastics, materials and components used in food equipment.
- UL listed: file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component.
- Although not NSF certified, this product has a Material Supplier Form on file with NSF to facilitate its evaluation for use in applications requiring NSF certification.
- Recommended for applications requiring excellent flex fatigue resistance.
- EU and China RoHS compliant.

Applications:

- Consumer: Packaging, Small Appliance, Soft Touch Grips
- Industrial – Seals and Gaskets
- Tubing

Uses:

- Filter
- Flexible Grips
- Food Conatiners
- Kitchenware
- Non-specific Food Applications
- Seals
- White Goods & Small Appliances

Availability: Africa & Middle East, Europe, North America, Asia Pacific, Latin America and South America

Information provided by ExxonMobil Chemical

Key Words: EU 2003/11/EC; FDA 21 CFR 177.1210; FDA 21 CFR 177.2600; NSF 51; RoHS Compliant; UL QMFZ2; UL QMFZ8

Vendors: No vendors are listed for this material. Please click here if you are a supplier and would like information on how to add your listing to this material.

Physical Properties	Metric	English	Comments
Specific Gravity	0.970 g/cc	0.970 g/cc	ASTM D792

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	78	78	2 mm, 15 sec; ISO 868
	85	85	Air at 302°F, 168 hr; ASTM D573
Tensile Strength at Break	8.7370 MPa	1267.2 psi	Air at 302°F, 168 hr; ASTM D573
	8.83 MPa	1280 psi	Across Flow; ASTM D412
Tensile Stress at Strain	3.60 MPa @Strain 100 %	522 psi @Strain 100 %	Across Flow; ASTM D412
Elongation at Break	475.3 %	475.3 %	Air at 302°F, 168 hr; ASTM D573
	490 %	490 %	Across Flow; ASTM D412
Tear Strength	27.0 kN/m	154 pli	73°F, Die C; ASTM D624
Compression Set	28 % @Temperature 70.0 °C, Time 79200 sec	28 % @Temperature 158 °F, Time 22.0 hour	ASTM D395
	37 % @Temperature 125 °C, Time 252000 sec	37 % @Temperature 257 °F, Time 70.0 hour	ASTM D395

Thermal Properties	Metric	English	Comments
Brittleness Temperature	-60.0 °C	-76.0 °F	ASTM D746

UL RTI, Electrical	90.0 °C	194 °F	UL 746
UL RTI, Mechanical with Impact	90.0 °C @Thickness 1.00 mm	194 °F @Thickness 0.0394 in	UL 746
	90.0 °C @Thickness 1.50 mm	194 °F @Thickness 0.0591 in	UL 746
	95.0 °C @Thickness 3.00 mm	203 °F @Thickness 0.118 in	UL 746
Flammability, UL94	HB @Thickness 1.00 mm	HB @Thickness 0.0394 in	
	HB @Thickness 1.50 mm	HB @Thickness 0.0591 in	
	HB @Thickness 3.00 mm	HB @Thickness 0.118 in	

Processing Properties	Metric	English	Comments
Processing Temperature	175 - 230 °C	347 - 446 °F	
Rear Barrel Temperature	177 °C	350 °F	
Middle Barrel Temperature	182 °C	360 °F	
Front Barrel Temperature	188 °C	370 °F	
Nozzle Temperature	193 - 227 °C	380 - 440 °F	
Die Temperature	204 °C	400 °F	Extrusion
Melt Temperature	202 °C	395 °F	Extrusion
	199 - 232 °C	390 - 450 °F	Processing
Mold Temperature	10.0 - 51.7 °C	50.0 - 125 °F	Processing
Drying Temperature	82.2 °C	180 °F	
Dry Time	3 hour	3 hour	
Moisture Content	0.080 %	0.080 %	
Back Pressure	0.345 - 0.689 MPa	50.0 - 100 psi	Processing
	5.00 - 20.0 MPa	725 - 2900 psi	Extrusion
Clamp Pressure	41.4 - 68.9 MPa	6000 - 10000 psi	
Vent Depth	0.00254 cm	0.00100 in	
Cushion	0.317 - 0.635 cm	0.125 - 0.250 in	
Screw Speed	100 - 200 rpm	100 - 200 rpm	

Compliance Properties	Metric	English	Comments
FDA	Yes	Yes	

Descriptive Properties

Change in Mass in IRM 903 Oil at 257°F for 70 hr	87
Color	Black
Form	Pellets
Injection Rate	Fast
Maximum Regrind %	20
Screw Compression Ratio	2:1 - 2.5:1
Screw L/D Ratio	16:1 - 20:1

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