

Multibase TPSiV™ 3010-50A Thermoplastic Silicone Vulcanizate

Category : Polymer , Thermoplastic , Elastomer, TPE , Thermoplastic Vulcanizate Elastomer (TPV) , Polyurethane, TP , Silicone, Thermoplastic

Material Notes:

These materials are a novel family of TPV products based on cross-linked silicone rubber dispersed into various engineering thermoplastics. The dispersion of the silicone internal phase is produced by dynamic "vulcanization" or cross-linking of silicone polymers within the thermoplastic organic phase and results in a stable droplet type morphology as shown in the TEM micrograph. TPSiV™ combines the elastomeric performance of silicone rubber with the melt re-processability and thermal and chemical resistance of engineering thermoplastics. Thermoplastic polyurethane based TPSiV™ (3010, 3011, 3111, 3040, 3340 grades) combine the benefits of excellent abrasion resistance from the polyurethane as well as the lower coefficient of friction and improved temperature properties from the silicone rubber. TPSiV™ 3010-50A / 60A: Designed to have a low compression set and tension set as well as excellent dielectric strength. Recommended for injection molding applications and bonds to PC, ABS, PU, and PVC. The 60A product is plasticizer free. Information provided by Multibase, a Dow Corning Company

Order this product through the following link:

http://www.lookpolymers.com/polymer_Multibase-TPSiV-3010-50A-Thermoplastic-Silicone-Vulcanizate.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.12 g/cc	1.12 g/cc	ASTM D792

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	52	52	10 sec; ASTM D2240
Tensile Strength at Break	7.10 MPa	1030 psi	ASTM D412
Elongation at Break	470 %	470 %	ASTM D412
Tear Strength	24.5 kN/m	140 pli	ASTM D412
Taber Abrasion, mg/1000 Cycles	21	21	ASTM D1044
Compression Set	14 %	14 %	ASTM D412
	@Temperature 22.8 °C, Time 79200 sec	@Temperature 73.0 °F, Time 22.0 hour	
	49 %	49 %	
Tensile Set	@Temperature 70.0 °C, Time 79200 sec	@Temperature 158 °F, Time 22.0 hour	ASTM D412
	74 %	74 %	
	@Temperature 120 °C, Time 79200 sec	@Temperature 248 °F, Time 22.0 hour	
Tensile Set	6.0 %	6.0 %	1; ASTM D412
	20 %	20 %	

Mechanical Properties	24 % Metric	24 % English	At Break: ASTM D412 Comments
	24 %	24 %	ASTM D412

Electrical Properties	Metric	English	Comments
Dielectric Constant	4.37	4.37	
Dielectric Strength	19.0 kV/mm	483 kV/in	
	19.0 kV/mm	483 kV/in	
	@Frequency 100 Hz	@Frequency 100 Hz	

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	180 °C	356 °F	
Middle Barrel Temperature	190 °C	374 °F	
Front Barrel Temperature	200 °C	392 °F	
Nozzle Temperature	205 °C	401 °F	
Mold Temperature	10.0 - 30.0 °C	50.0 - 86.0 °F	
Drying Temperature	80.0 °C	176 °F	
Dry Time	2 - 4 hour	2 - 4 hour	

Descriptive Properties	Value	Comments
Injection Rate	Fast	

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