

Zythane® 5050D

Thermoplastic Polyurethane Elastomer (Polyester)

Alliance Polymers & Services

Message:

Zythane 5050D is a polyester--based TPU specifically formulated for extrusion applications. It exhibits excellent abrasion resistance and toughness and has good hydrolytic stability, oil, fuel and solvent resistance. It is supplied uncolored in pellet form.

Typical Applications:

Zythane 5050D applications include among others spiral and pneumatic tubing, round and V belting, blow molded bellows.

General Information			
Features	Solvent resistance		
	Good wear resistance		
	Fuel resistance		
	Oil resistance		
	Good toughness		
	Hydrolysis stability		
Uses	Pipe fittings		
Appearance	Colorless		
Forms	Particle		
Processing Method	Blow molding		
	Extrusion		
	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.24	g/cm ³	ASTM D792
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	50		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Taber Abrasion Resistance	33.0	mg	ASTM D1044
Abrasion - DIN	40	mm ³	DIN 53516
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			ASTM D412
100% strain	13.0	MPa	ASTM D412
300% strain	25.0	MPa	ASTM D412
Tensile Strength (Break)	48.0	MPa	ASTM D412
Tensile Elongation (Break)	440	%	ASTM D412
Tear Strength ¹	123	kN/m	ASTM D624
Compression Set			ASTM D395B
24°C, 22 hr	28	%	ASTM D395B
70°C, 72 hr	43	%	ASTM D395B

Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	-13.9	°C	DSC
Vicat Softening Temperature	140	°C	ASTM D1525
Flammability	Nominal Value		Test Method
Flame Rating			UL 94
1.00 mm	HB		UL 94
1.50 mm	HB		UL 94
3.00 mm	HB		UL 94
Injection	Nominal Value	Unit	
Drying Temperature	85.0	°C	
Drying Time	4.0	hr	
Rear Temperature	195	°C	
Middle Temperature	205	°C	
Front Temperature	215	°C	
Nozzle Temperature	210 - 220	°C	
Processing (Melt) Temp	210 - 220	°C	
Mold Temperature	25.0 - 60.0	°C	
Back Pressure	0.300 - 1.30	MPa	
Screw Speed	60 - 200	rpm	
Clamp Tonnage	4.1 - 6.9	kN/cm ²	
Injection instructions			
Injection Speed: >.4 in/sec			
Extrusion	Nominal Value	Unit	
Drying Temperature	85.0	°C	
Drying Time	4.0	hr	
Cylinder Zone 1 Temp.	195	°C	
Cylinder Zone 2 Temp.	205	°C	
Cylinder Zone 3 Temp.	215	°C	
Die Temperature	220	°C	
Extrusion instructions			
Gate Temperature: 210°C (410°F)			
NOTE			
1.	C mould		

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