

Zythane® 5050D

Alliance Polymers & Services - Thermoplastic Polyurethane Elastomer (Polyester)

General Information

Product Description

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

Features	<ul style="list-style-type: none"> Abrasion Resistant Fuel Resistant 	<ul style="list-style-type: none"> Good Toughness Hydrolytically Stable 	<ul style="list-style-type: none"> Oil Resistant Solvent Resistant
Uses	<ul style="list-style-type: none"> Tubing 		
Appearance	<ul style="list-style-type: none"> Colorless 		
Forms	<ul style="list-style-type: none"> Pellets 		
Processing Method	<ul style="list-style-type: none"> Blow Molding 	<ul style="list-style-type: none"> Extrusion 	<ul style="list-style-type: none"> Injection Molding

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.24		ASTM D792
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 (100% Strain)	1890	psi	ASTM D412
Tensile Stress (300% Strain)	3630	psi	ASTM D412
Tensile Strength (Break)	6960	psi	ASTM D412
Tensile Elongation (Break)	440	%	ASTM D412
Tear Strength ²	700	lbf/in	ASTM D624
Compression Set			ASTM D395B
75°F, 22 hr	28	%	
158°F, 72 hr	43	%	
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	50		ASTM D2240
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	7.00	°F	DSC
Vicat Softening Temperature	284	°F	ASTM D1525
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.04 in		HB	
0.06 in		HB	
0.12 in		HB	

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	185	°F
Drying Time	4.0	hr
Rear Temperature	383	°F

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Injection	Nominal Value	Unit
Middle Temperature	401	°F
Front Temperature	419	°F
Nozzle Temperature	410 to 428	°F
Processing (Melt) Temp	410 to 428	°F
Mold Temperature	77 to 140	°F
Back Pressure	43.5 to 189	psi
Screw Speed	60 to 200	rpm
Clamp Tonnage	3.0 to 5.0	tons/in ²

Injection Notes

Injection Speed: >.4 in/sec

Extrusion	Nominal Value	Unit
Drying Temperature	185	°F
Drying Time	4.0	hr
Cylinder Zone 1 Temp.	383	°F
Cylinder Zone 2 Temp.	401	°F
Cylinder Zone 3 Temp.	419	°F
Die Temperature	428	°F

Extrusion Notes

Gate Temperature: 210°C (410°F)

Notes

¹ Typical properties: these are not to be construed as specifications.

² Die C