

Zythane® 7070AF

Alliance Polymers & Services - Thermoplastic Polyurethane Elastomer (Polyether)

General Information

Product Description

Zythane 7070AF is a polyether-based FR TPU specifically formulated for both injection molding and extrusion applications with ease of processing. It exhibits excellent flame retardance, abrasion resistance and toughness and has good hydrolytic stability, oil, fuel and solvent resistance. It is supplied uncolored in pellet form.

Typical Applications:

Zythane 7070AF applications include among others FDA applications, cable sheathing, spiral and pneumatic tubing, film, irrigation hoses, conveyor hoses, fire hoses, hydraulic hoses, cable jacketing, flat flex cables, automotive sensor cables.

General

Features	<ul style="list-style-type: none"> • Abrasion Resistant • Flame Retardant • Fuel Resistant 	<ul style="list-style-type: none"> • Good Toughness • Hydrolytically Stable • Oil Resistant 	<ul style="list-style-type: none"> • Solvent Resistant
Uses	<ul style="list-style-type: none"> • Automotive Applications • Cable Jacketing 	<ul style="list-style-type: none"> • Hose • Tubing 	
Agency Ratings	<ul style="list-style-type: none"> • FDA 		
Appearance	<ul style="list-style-type: none"> • Colorless 		
Forms	<ul style="list-style-type: none"> • Pellets 		
Processing Method	<ul style="list-style-type: none"> • Extrusion 	<ul style="list-style-type: none"> • Injection Molding 	

Properties¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.10		ASTM D792
Mechanical	Nominal Value	Unit	Test Method
Taber Abrasion Resistance	37.0	mg	ASTM D1044
Abrasion - DIN	30	mm ³	DIN 53516
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress (100% Strain)	435	psi	ASTM D412
Tensile Stress (300% Strain)	870	psi	ASTM D412
Tensile Strength (Break)	3480	psi	ASTM D412
Tensile Elongation (Break)	800	%	ASTM D412
Tear Strength ²	392	lbf/in	ASTM D624
Compression Set			ASTM D395B
75°F, 22 hr	22	%	
158°F, 72 hr	37	%	
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore A)	70		ASTM D2240
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	-65.0	°F	DSC
Vicat Softening Temperature	167	°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	

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Processing Information

Injection	Nominal Value	Unit
Drying Temperature	185	°F
Drying Time	4.0	hr
Rear Temperature	329	°F
Middle Temperature	356	°F
Front Temperature	383	°F
Nozzle Temperature	383 to 392	°F
Processing (Melt) Temp	374 to 383	°F
Mold Temperature	77 to 140	°F
Back Pressure	72.5 to 145	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.	329	°F
Cylinder Zone 2 Temp.	356	°F
Cylinder Zone 3 Temp.	383	°F
Die Temperature	388	°F

Extrusion Notes

Gate Temperature: 195°C (383°F)

Notes

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

² Die C