

Zythane® 4045D

Alliance Polymers & Services - Thermoplastic Polyurethane Elastomer (Polyester)

General Information

Product Description

Zythane 4045D is a polyester-based TPU specially formulated for injection molding applications. It exhibits excellent abrasion resistance and toughness and has good hydrolytic stability. It also exhibit good oil, fuel and solvent resistance. It is supplied uncolored in pellet form.

Typical Applications:

Zythane 4045D applications include among others shoe soles, ski and skate boot shells, caster wheels, animal tags, good overmolded adhesion to certain EP (ex: PC, ABS, PMMA), couplings, gaskets and seals, tool handles, industrial parts, mobile phone cases, armrests, golf disks, mining screens.

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"> Automotive Interior Parts Cell Phones Footwear 	<ul style="list-style-type: none"> Gaskets Industrial Applications Power/Other Tools 	<ul style="list-style-type: none"> Seals Sporting Goods Wheels/Casters
Appearance	<ul style="list-style-type: none"> Colorless 		
Forms	<ul style="list-style-type: none"> Pellets 		
Processing Method	<ul style="list-style-type: none"> Injection Molding 		

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.22		ASTM D792
Mechanical	Nominal Value	Unit	Test Method
Taber Abrasion Resistance	40.0	mg	ASTM D1044
Abrasion - DIN	45	mm ³	DIN 53516
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress (100% Strain)	1310	psi	ASTM D412
Tensile Stress (300% Strain)	3050	psi	ASTM D412
Tensile Strength (Break)	7250	psi	ASTM D412
Tensile Elongation (Break)	500	%	ASTM D412
Tear Strength ²	560	lbf/in	ASTM D624
Compression Set			ASTM D395B
75°F, 22 hr	23	%	
158°F, 72 hr	43	%	
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ASTM D2240
Shore A	95		
Shore D	45		
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	-8.00	°F	DSC
Vicat Softening Temperature	275	°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	374	°F
Middle Temperature	392	°F
Front Temperature	410	°F
Nozzle Temperature	401 to 419	°F
Processing (Melt) Temp	401 to 419	°F
Mold Temperature	77 to 140	°F
Back Pressure	87.0 to 174	psi
Screw Speed	60 to 200	rpm
Clamp Tonnage	3.0 to 5.0	tons/in ²

Injection Notes

Injection Speed: >.4 in/sec

Notes

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

² Die C