

# Zythane® 6045D

## Alliance Polymers & Services - Thermoplastic Polyurethane Elastomer (Polyether)

### General Information

#### Product Description

Zythane 6045D is a polyether--based TPU specifically formulated for injection molding 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 6045D applications include among others FDA applications, sports shoes, ski tips, other sporting goods, casters, power tools handles, good overmolded adhesion to certain EP (ex: PC, ABS, PMMA), cell phone cases, plugs, terminations, ski boot shell, animal tags, railroad pads.

#### General

Features	<ul style="list-style-type: none"> <li>Abrasion Resistant</li> <li>Fuel Resistant</li> </ul>	<ul style="list-style-type: none"> <li>Good Toughness</li> <li>Hydrolytically Stable</li> </ul>	<ul style="list-style-type: none"> <li>Oil Resistant</li> <li>Solvent Resistant</li> </ul>
Uses	<ul style="list-style-type: none"> <li>Cell Phones</li> <li>Footwear</li> </ul>	<ul style="list-style-type: none"> <li>Industrial Applications</li> <li>Power/Other Tools</li> </ul>	<ul style="list-style-type: none"> <li>Sporting Goods</li> <li>Wheels/Casters</li> </ul>
Agency Ratings	<ul style="list-style-type: none"> <li>FDA</li> </ul>		
Appearance	<ul style="list-style-type: none"> <li>Colorless</li> </ul>		
Forms	<ul style="list-style-type: none"> <li>Pellets</li> </ul>		
Processing Method	<ul style="list-style-type: none"> <li>Injection Molding</li> </ul>		

### Properties <sup>1</sup>

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.14		ASTM D792
Mechanical	Nominal Value	Unit	Test Method
Taber Abrasion Resistance	48.0	mg	ASTM D1044
Abrasion - DIN	21	mm <sup>3</sup>	DIN 53516
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress (100% Strain)	1450	psi	ASTM D412
Tensile Stress (300% Strain)	2470	psi	ASTM D412
Tensile Strength (Break)	5800	psi	ASTM D412
Tensile Elongation (Break)	460	%	ASTM D412
Tear Strength <sup>2</sup>	812	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			ASTM D2240
Shore A	95		
Shore D	45		
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	-31.0	°F	DSC
Vicat Softening Temperature	264	°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		

## Zythane® 6045D

Alliance Polymers & Services - Thermoplastic Polyurethane Elastomer (Polyether)

### Processing Information

Injection	Nominal Value	Unit
Drying Temperature	194	°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 <sup>2</sup>

#### Injection Notes

Injection Speed: >.4 in/sec

#### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> Die C