

# Zythane® 4090A

Thermoplastic Polyurethane Elastomer (Polyester)

Alliance Polymers & Services

## Message:

Zythane 4090A is a polyester--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 Application:

Zythane 4090A applications include among others shoe soles, ski and skate boot shells, other sporting goods, 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 Information			
Features	Solvent resistance		
	Good wear resistance		
	Fuel resistance		
	Oil resistance		
	Good toughness		
	Hydrolysis stability		
Uses	Wheels		
	Washer		
	Power/other tools		
	Industrial application		
	Seals		
	Car interior parts		
	Mobile phone		
	Sporting goods		
	Footwear		
Appearance	Colorless		
Forms	Particle		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.23	g/cm³	ASTM D792
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ASTM D2240
Shaw A	90		ASTM D2240
Shaw D	41		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Taber Abrasion Resistance	23.0	mg	ASTM D1044
Abrasion - DIN	22	mm³	DIN 53516
Elastomers	Nominal Value	Unit	Test Method

Tensile Stress			ASTM D412
100% strain	11.0	MPa	ASTM D412
300% strain	23.0	MPa	ASTM D412
Tensile Strength (Break)	43.0	MPa	ASTM D412
Tensile Elongation (Break)	560	%	ASTM D412
Tear Strength <sup>1</sup>	127	kN/m	ASTM D624
Compression Set			ASTM D395B
24°C, 22 hr	23	%	ASTM D395B
70°C, 72 hr	38	%	ASTM D395B
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	-31.1	°C	DSC
Vicat Softening Temperature	132	°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	185	°C	
Middle Temperature	200	°C	
Front Temperature	205	°C	
Nozzle Temperature	205 - 215	°C	
Processing (Melt) Temp	205 - 215	°C	
Mold Temperature	25.0 - 60.0	°C	
Back Pressure	0.500 - 1.00	MPa	
Screw Speed	60 - 200	rpm	
Clamp Tonnage	4.1 - 6.9	kN/cm <sup>2</sup>	
Injection instructions			
Injection Speed: >.4 in/sec			
NOTE			
1.	C mould		

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#### Recommended distributors for this material

### Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

