

Alliance Polymers Zythane™ 5085A Thermoplastic Polyurethane Elastomer

Category : Polymer , Thermoplastic , Elastomer, TPE , Polyurethane TPE

Material Notes:

Zythane™ 5085A is a polycaprolactone-based TPU specifically formulated for injection molding applications .It exhibits excellent low compression set, abrasion resistance and toughness and has good hydrolytic stability, oil, fuel and solvent resistance. It is supplied uncolored in pellet form. Availability: North America Features: Fuel Resistant, Good Toughness, Oil Resistant, Hydrolytically Stable, Solvent Resistant, Good Abrasion Resistance Appearance: Colorless Forms: Pellets Processing Method: Injection Molding and Extrusion Information provided by Alliance Polymers

Order this product through the following link:

http://www.lookpolymers.com/polymer_Alliance-Polymers-Zythane-5085A-Thermoplastic-Polyurethane-Elastomer.php

| Physical Properties | Metric | English | Comments |
|---------------------|-----------|---------------------------|-----------|
| Density | 1.22 g/cc | 0.0441 lb/in ³ | ASTM D792 |

| Mechanical Properties | Metric | English | Comments |
|--------------------------------|--|---|-----------------------------|
| Hardness, Shore A | 85 | 85 | ASTM D2240 |
| Tensile Strength at Break | 43.0 MPa | 6240 psi | ASTM D412 |
| Tensile Stress | 5.00 MPa @Strain 100 % | 725 psi @Strain 100 % | ASTM D412 |
| | 14.0 MPa @Strain 300 % | 2030 psi @Strain 300 % | ASTM D412 |
| Elongation at Break | 620 % | 620 % | ASTM D412 |
| Tear Strength | 83.1 kN/m | 474 pli | Die C; ASTM D412 |
| Taber Abrasion, mg/1000 Cycles | 23 | 23 | ASTM D1044 |
| Abrasion | 20 | 20 | mm ³ ; DIN 53516 |
| Compression Set | 23 % @Temperature 22.8 °C, Time 79200 sec | 23 % @Temperature 73.0 °F, Time 22.0 hour | ASTM D3995B |
| | 33 % @Temperature 70.0 °C, Time 259000 sec | 33 % @Temperature 158 °F, Time 72.0 hour | ASTM D3995B |

| Thermal Properties | Metric | English | Comments |
|-----------------------|--------|---------|------------|
| Vicat Softening Point | 110 °C | 230 °F | ASTM D1525 |

| Brittleness Temperature Thermal Properties | -31.0 °C Metric | -23.8 °F English | ASTM D746 Comments |
|---|--------------------|----------------------|-----------------------|
| Flammability, UL94 | HB | HB | |
| | @Thickness 1.00 mm | @Thickness 0.0394 in | |
| | HB | HB | |
| | @Thickness 1.50 mm | @Thickness 0.0591 in | |
| | HB | HB | |
| | @Thickness 3.00 mm | @Thickness 0.118 in | |

| Processing Properties | Metric | English | Comments |
|---------------------------|------------------|------------------|-----------------------------|
| Processing Temperature | 200 °C | 392 °F | Gate Temperature; Extrusion |
| | 205 - 210 °C | 401 - 410 °F | Injection |
| Rear Barrel Temperature | 180 °C | 356 °F | Injection |
| Middle Barrel Temperature | 195 °C | 383 °F | Injection |
| Front Barrel Temperature | 200 °C | 392 °F | Injection |
| Nozzle Temperature | 200 - 215 °C | 392 - 419 °F | Injection |
| Zone 1 | 180 °C | 356 °F | Extrusion |
| Zone 2 | 195 °C | 383 °F | Extrusion |
| Zone 3 | 200 °C | 392 °F | Extrusion |
| Die Temperature | 215 °C | 419 °F | Extrusion |
| Mold Temperature | 25.0 - 60.0 °C | 77.0 - 140 °F | Injection |
| Injection Velocity | >= 10.0 mm/sec | >= 0.394 in/sec | Injection |
| Drying Temperature | 85.0 °C | 185 °F | Injection |
| | 85.0 °C | 185 °F | Extrusion |
| Dry Time | 4.00 hour | 4.00 hour | Injection |
| | 4.00 hour | 4.00 hour | Extrusion |
| Back Pressure | 0.500 - 1.00 MPa | 72.5 - 145 psi | Injection |
| Clamp Pressure | 40.0 - 70.3 MPa | 5800 - 10200 psi | Injection |
| Screw Speed | 60 - 200 rpm | 60 - 200 rpm | Injection |

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