

Bayflex® 970

Polyurethane (MDI)

Covestro - PUR

Message:

Bayflex 970 is a fully compounded polyether-based polyurethane system consisting of two liquid components which can be water-blown. Component A is a modified diphenylmethane diisocyanate (MDI) prepolymer, and Component B is a polyether polyol system. The Bayflex 970 system is used in the manufacture of microcellular polyurethane shoe soles. Soles prepared from these components combine light weight, comfort, and durability. Processibility and dynamic flexural properties are excellent over a wide range of densities. The combination of excellent physical properties and ease of processing has made the Bayflex 970 system a prime soling material for sandals, fashion and casual shoes. As with any product, use of the Bayflex 970 system in a given application must be tested (including but not limited to field testing) in advance by the user to determine suitability.

| General Information | | | |
|---|-----------------------------|-------------------|-----------------|
| Features | Workability, good | | |
| | Good flexibility | | |
| Uses | Footwear | | |
| Physical | Nominal Value | Unit | Test Method |
| Specific Gravity | 0.500 | g/cm ³ | Internal method |
| Hardness | Nominal Value | Unit | Test Method |
| Durometer Hardness (Shore A) | 52 | | ASTM D2240 |
| Mechanical | Nominal Value | Unit | Test Method |
| Taber Abrasion Resistance (1000 Cycles, 1000 g, H-18 Wheel) | 70.0 | mg | ASTM D3489 |
| Ross Flex ¹ | | | ASTM D1052 |
| -29°C, 6.35 mm | > 5.0E+4 | Cycles | ASTM D1052 |
| 23°C, 6.35 mm | > 1.0E+5 | Cycles | ASTM D1052 |
| Oil Resistance - Volume Swell | | vol% | ASTM D5694 |
| Elastomers | Nominal Value | Unit | Test Method |
| Tensile Strength (Break) | 3.10 | MPa | ASTM D412 |
| Tensile Elongation (Break) | 400 | % | ASTM D412 |
| Tear Strength | | | |
| -- ² | 14.0 | kN/m | ASTM D624 |
| -- ³ | 4.38 | kN/m | Internal method |
| Thermoset | Nominal Value | Unit | Test Method |
| Thermoset Components | | | |
| Component a | Mixing ratio by weight: 63 | | |
| Component B | Mixing ratio by weight: 100 | | |
| Additional Information | Nominal Value | Unit | Test Method |

Part A

Type: Isocyanate

Appearance: Light yellow to yellow liquid

Specific Gravity @ 25°C: 1.19

Viscosity @25°C: 400 mPa*s

Flash Point PMCC: >93°C

Bulk Density @ 20°C: 9.93 lb/gal

NCO: 18.9 wt%

Part B

Type: Polyol

Appearance: White liquid

Specific Gravity @ 25°C: 1.04

Viscosity @25°C: 1100 mPa*s

Flash Point PMCC: 138°C

Bulk Density @ 25°C: 8.68 lb/gal

Water: 0.45 wt%

Hydroxyl Number: 133

Material Temperature: 28°C Mold Temperature: 49°C Demold Time: 3.5 min Linear Shrinkage @ 0.10 g/cm: <1.0% Hand Mix Reactivity @ 25°C

Cream Time: 12 to 16 sec

Tack Free: 30 to 40 sec

Pull Time: 45 to 60 sec

Free-Rise Density: 12.6 to 14.9 lb/ft³

NOTE

| | |
|----|---------------|
| 1. | 0% Cut Growth |
| 2. | Die C |
| 3. | Block |

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