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**Bayer Corporation – Polymers Division**



## Bayer Polymers Product Guide - Properties

**Product:** TEXIN

**Resin:** 990R

**Type:** Thermoplastic Polyurethane

**Description:** Unreinforced, General Purpose, Release

**Highlights:** 90A Shore Hardness, Abrasion Resistance, Tear Strength, Chemical Resistance, Toughness, Elasticity, Hydrolytic Stability, Microbe Resistance

| Property          | Typical Physical Properties*                              | Value                               | ASTM Test Method |
|-------------------|-----------------------------------------------------------|-------------------------------------|------------------|
| <b>General</b>    |                                                           |                                     |                  |
|                   | Specific Gravity                                          | 1.13                                | D 792            |
|                   | Shore Hardness                                            | 90 A                                | D 2240           |
|                   | Taber Abrasion: H-18 Wheel, 1000-g Load, 1000 Cycles      | 25 mg Loss                          | D 3489           |
|                   | Bayshore Resilience                                       | 40 %                                | D 2632           |
|                   | Mold Shrinkage at 100-mil Thickness: Flow Direction       | 0.008 in/in                         | D 955            |
|                   | Mold Shrinkage at 100-mil Thickness: Cross-Flow Direction | 0.008 in/in                         | D 955            |
|                   | Processing Methods: Injection Molding                     | Injection Molding                   |                  |
|                   | Processing Methods: Extrusion -- Hose, Tubing, Profiles   | Extrusion -- Hose, Tubing, Profiles |                  |
|                   | Processing Methods: Extrusion -- Wire & Cable             | Extrusion -- Wire & Cable           |                  |
|                   | Processing Methods: Extrusion -- Film & Sheet             | Extrusion -- Film & Sheet           |                  |
|                   | Processing Methods: Blow Molding                          | Blow Molding                        |                  |
| <b>Mechanical</b> |                                                           |                                     |                  |
|                   | Tensile Strength                                          | 5,000 lb/in <sup>2</sup>            | D 412            |
|                   | Tensile Stress at 50% Elongation                          | 1,000 lb/in <sup>2</sup>            | D 412            |
|                   | Tensile Stress at 100% Elongation                         | 1,100 lb/in <sup>2</sup>            | D 412            |
|                   | Tensile Stress at 300% Elongation                         | 2,000 lb/in <sup>2</sup>            | D 412            |
|                   | Ultimate Elongation                                       | 450 %                               | D 412            |
|                   | Flexural Modulus                                          | 6,000 lb/in <sup>2</sup>            | D 790            |

|                                                           |            |         |
|-----------------------------------------------------------|------------|---------|
| Compression Set: As Molded (Postcured)**: 22 Hrs at 158°F | 75 (35) %  | D 395-B |
| Compression Set: As Molded (Postcured)**: 22 Hrs at 73°F  | 20 (13) %  | D 395-B |
| Tear Strength, Die C                                      | 550 lbf/in | D 624   |
| <b>Thermal</b>                                            |            |         |
| Low-Temperature Brittle Point                             | <-90 °F    | D 746   |
| Glass Transition Temperature (Tg)                         | -47 °F     | (DMA)#  |
| Vicat Softening Temperature, Rate A                       | 223 °F     | D 1525  |

\* These items are provided as general information only. They are approximate values and are not part of the product specifications.

\*\* Postcured 16 hrs. at 230°F (110°C).

# DMA: Dynamic Mechanical Analysis.

\*\*\* Flammability results are based on small-scale laboratory tests for purposes of relative comparison and are not intended to reflect the hazards presented by this or any other material under actual fire conditions.

<sup>a</sup> Natural color.

<sup>b</sup> Natural and black colors.

**All grades** of Texin and Desmopan resins listed here are aromatic. Aliphatic grades are also available.

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### General / Typical Properties for Natural Resin

The data in this electronic database are provided as general information only. They are approximate values and are not part of the product specifications.

### Product Usage

The products mentioned in this electronic database may be a candidate for use in any number of diverse applications, as with any product, the use of a Bayer Corporation engineering resin in a given application must be tested (including field testing, etc.) in advance by the user to determine suitability.

### Health and Safety Information

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling the Bayer Corporation products mentioned in this electronic database. Before working with any of these

products, you must read and become familiar with the available information on their hazards, proper use, and handling. This cannot be overemphasized. Information is available in several forms, e.g., material safety data sheets and product labels. Consult your local Bayer Corporation representative or contact the Product Safety and Regulatory Affairs Department in Pittsburgh, Pennsylvania.

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### **Regulatory Compliance Information**

Some of the end-uses of the products described in this electronic database must comply with the applicable regulations, such as the FDA, NSF, USDA, and CPSC. If you have any questions on the regulatory status of any of these Bayer Corporation products, please contact your local Bayer Corporation representative or the Bayer Corporation Regulatory Affairs Manager in Pittsburgh, Pennsylvania.

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Data generated from Engineering Polymers Properties Guide Brochure (Thermoplastics and Polyurethanes).

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