Texin® 385AE

Characterization	Texin 385AE resin are aromatic polyester-based thermoplastic polyurethanes of approximately 85A Shore hardness.
Properties / Applications	Texin 385AE is processed by injection molding or extrusion and is characterized by high mechanical strength, improved hydrolysis resistance, low temperature flexibility and good chemical resistance to oils, greases and solvents. Typical applications of Texin 385AE include belting, tubing, hose, cable jackets, hose jackets, seals, athletic soles, casters, mine screens, film and extruded profile. As with any product, use of Texin 385AE resin in a given application must be tested (including field testing, etc.) in advance by the user to determine suitability.
Storage, Drying and Regrind Usage	Texin thermoplastic polyurethane resins are hygroscopic and will absorb ambient moisture. The resins should remain in their sealed containers and stored in a dry area. Storage temperatures should not exceed 86°F (30°C). Unused resin from opened containers, or reground material that is not to be used immediately, should also be stored in sealed containers under cool and dry conditions. Prior to processing, Texin 385AE resin must be thoroughly dried for a minimum of 4 hours in a desiccant dehumidifying hopper dryer to a moisture content of less than 0.03%. Hopper inlet air temperature should be 180-200˚F (82-93˚C), the inlet air dew point should be -20˚F(-29C) or lower. Where end-use requirements permit, up to 20% Desmopan resin regrind may be used with virgin material. Regrind material must be generated from properly molded/extruded parts, sprues, runners, trimmings, and/or films. Degraded or discolored material may not be used for regrind. All regrind material must be free of contamination and thoroughly blended with virgin material prior to drying and processing. Finish parts containing regrind must be tested to ensure that end-use requirements are fully met.

Document contains important information and must be read in its entirety.

Edition 2019-04-01

2026-02-18 11:00:00 Distributed by Mito polimeri

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Injection Molding, Extrusion and Blow Molding Conditions

Typical starting conditions for injection molding, extrusion and blow molding are noted below. Actual processing conditions will depend on machine size, mold design, material residence time, shot size, part geometry, etc.

Typical Injection Molding Conditions

Barrel Temperature: Rear	380º-400ºF (193º-204ºC)
Barrel Temperature: Middle	385º-405ºF (196º-207ºC)
Barrel Temperature: Front	385º-405ºF (196º-207ºC)
Barrel Temperature: Nozzle	390º-410ºF (199º-210ºC)
Melt Temperature	395º-410ºF (202º-210ºC)
Mold Temperature	60°–100°F (16°–38°C)
Injection Pressure	8,000 - 15,000 psi
Hold Pressure	60 - 80% of Injection Pressure
Back Pressure	800 psi max.
Screw Speed	40 - 80 rpm
Injection Speed	Slow to Moderate
Cushion	1/8 in max

Extrusion Profile

Typical Temperature Profile for Extrusion

Rear (Feed)	370º - 390ºF (188º - 199ºC)
Middle (Transition)	375º - 395ºF (191º - 202ºC)
Front (Meter)	375º - 395ºF (191º - 202ºC)
Die	375º - 395ºF (191º - 202ºC)
Melt	375º - 395ºF (191º - 202ºC)

Health and Safety Information

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling this product. Before working with this product, you must read and become familiar with the available information on its risks, proper use, and handling. This cannot be overemphasized. Information is available in several forms, e.g., safety data sheets and product labels. For further information contact your Covestro LLC representative or the Product Safety and Regulatory Affairs Department in Pittsburgh, PA.

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Typical Properties* for Natural Resin

Property	ASTM Test Method (Other)	Texin 385AE U.S. Units	Texin 385AE S.I. Units
General			
Specific Gravity	D 792 (ISO 1183)	1.20	1.20
Shore Hardness, A Scale	D 2240 (ISO 868)	85A	85A
Taber Abrasion H-18 wheel, 1000-g load, 1000 cycles	D 3489 (ISO 4649)	9 mg Loss	9 mg Loss
Bayshore Resilience	D 2632	36%	36%
Mold Shrinkage, 100-mil thickness; Flow Direction Cross-Flow Direction	D 955 (ISO 2577)	 0.011 in/in 0.011 in/in	 0.011 mm/mm 0.011 mm/mm
Mechanical			
Tensile Strength	D 412 (ISO 37)	7,300 lb/in^2	50.4 MPa
Tensile Stress at 100% Elongation	D 412 (ISO 37)	800 lb/in^2	5.5 MPa
Tensile Stress at 300% Elongation	D 412 (ISO 37)	2,500 lb/in^2	17.4 MPa
Ultimate Elongation	D 412 (ISO 37)	500%	500%
Tear Strength, Die C	D 624 (ISO 34)	530 lbf/in	93 kN/m
Flexural Modulus 73°F (23°C) -22°F (-30°C)	D 790 (ISO 178)	 4,800 lb/in^2 13,900 lb/in^2	 33.1 MPa 95.9 MPa
Compression Set (Post-cured**) 22 hours at 158°F (70°C) 22 hours at 73°F (23°C)	D 395B (ISO 815)	 25% 18%	 25% 18%
Thermal			
Glass Transition Temperature (Tg)	(DMA)[a]	-40°F	-40°C
Vicat Softening Temperature (Rate A)	D 1525 (ISO 306)	212°F	100°C

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

*** Post-cured for 16 hours at 230°F (110°C).*

a DMA- Dynamic Mechanical Analysis

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Edition 2019-04-01

2026-02-18 11:00:00 Distributed by Mito polimeri

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Regulatory Compliance Information

Some of the end uses of the products described in this bulletin must comply with applicable regulations, such as the FDA, NSF, USDA, and CPSC. If you have any questions on the regulatory status of these products, contact your Covestro representative or Regulatory Affairs Manager in Pittsburgh, PA.

Note

The purchaser/user agrees that Covestro LLC reserves the right to discontinue this product without prior notice.

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you utilize our products, technical assistance and information to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent.

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Edition 2019-04-01

2026-02-18 11:00:00 Distributed by Mito polimeri