Texin® 292AE

Characterization

Texin 292AE resin is an aromatic polyester-based thermoplastic polyurethane with a Shore hardness of approximately 92A*.

Properties / Applications

Texin 292AE resin offers low gel content, good clarity and abrasion resistance, and very good chemical resistance to oils, solvents, and other non-aqueous solutions. Texin 1210 natural color resin complies with FDA food-contact regulations 21 CFR 177.1680 (Polyurethane Resins) and 177.2600 (Rubber Articles Intended for Repeated Use), subject to the limitations of these and any other applicable regulations. Texin 292AE has a wide processing window, which allows for ease of film and sheet production. Typical applications include belting, hose, cable jackets, hose jackets, athletic shoes, film, tubing and extended profiles. As with any product, use of Texin 292AE resin in a given application must be tested (including but not limited to field testing) 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 292AE 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 180-210°F (81-99°C), the inlet air dew point should be -20°F (-29°C) or lower.

Where end-use requirements permit, up to 20% Texin 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 2019-03-29

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, are noted below. It is recommended that initial processing be done at the lower end of the suggested temperature ranges and increased as necessary. 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	385°–400°F (196°–204°C)
Barrel Temperature: Middle	390°–410°F (199°–210°C)
Barrel Temperature: Front	390°–410°F (199°–210°C)
Barrel Temperature: Nozzle	395°–415°F (202°–213°C)
Melt Temperature	400°–410°F (204°–210°C)
Mold Temperature	60°–100°F (16°–38°C)
Injection Pressure	10,000 - 15,000 psi
Hold Pressure	60 - 80% of Injection Pressure
Back Pressure	800 psi max.
Screw Speed	40 - 80 rpm
Injection Speed	Moderate
Cushion	1/8 in max

Extrusion and Blow Molding Profile

Typical Temperature Profile for Extrusion

Rear (Feed)	375° - 400°F (191° - 204°C)
Middle (Transition)	380° - 405°F (193° - 207°C)
Front (Meter)	380° - 405°F (193° - 207°C)
Die	380° - 405°F (193° - 207°C)
Melt	380° - 405°F (193° - 207°C)

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Typical Properties* for Natural Resin

Property	ASTM Test Method (Other)	Texin 292AE Resin U.S. Units	Texin 292AE Resin S.I. Units
General			
Specific Gravity	D 792 (ISO 1183)	1.22	1.22
Shore Hardness	D 2240 (ISO 868)	92A	92A
Taber Abrasion: H-18, 1,000-g Load, 1,000 Cycles	D 3489 (ISO 4649)	27 mg Loss	27 mg Loss
Mechanical			
Tensile Strength	D 412 (ISO 37)	5,800 lb/in^2	40.0 MPa
Tensile Stress at 100% Elongation	D 412 (ISO 37)	1,400 lb/in^2	9.7 MPa
Tensile Stress at 300% Elongation	D 412 (ISO 37)	2,900 lb/in^2	20.0 MPa
Ultimate Elongation	D 412 (ISO 37)	510%	510%
Flexural Modulus: 158°F (70°C) 73°F (23°C)	D 790 (ISO 178)	 4,600 lb/in^2 10,600 lb/in^2	 31.7 MPa 73.1 MPa
Tear Strength, Die C	D 624 (ISO 34)	735 lbf/in	129 kN/m
Compression Set (postcured):[a] 22 Hours at 158°F (70°C) 22 Hours at 73°F (23°C)	D 395-B (ISO 815)	 43% 16%	 43% 16%
Thermal			
Glass Transition Temperature (Tg)	(DSC)[b]	7°F	-14°C
Vicat Softening Temperature, Rate A	D 1525 (ISO 306)	190°F	88°C

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

a Postcured for 16 hours at 230°F (110°C).

b DSC – Differential Scanning Calorimetry.

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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.
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.***

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