Bayer MaterialScience

Product Information

TEXIN® 288LW

Thermoplastic Polyurethane

Aromatic Polyester-Based Grade

Description and Applications

Texin 288LW resin is an aromatic polyester-based thermoplastic polyurethane with a hardness of approximately 88A and a reduced level of release compared to Texin 288 TPU resin. It can be processed by injection molding and some extrusion processes (i.e. sheet, tubing, profiles and cable). Contact Bayer MaterialScience for additional extrusion processing information. Texin 288LW resin is characterized by excellent low-temperature properties and excellent fuel and oil resistance. It also offers outstanding abrasion resistance, impact strength, toughness and flexibility. Texin 288LW resin exhibits excellent adhesion when overmolded onto harder substrates (e.g. PC, ABS, etc.). It is also well suited for applications requiring post molding decoration or painting.

Typical applications include casters, couplings, sleeves, gears, bushings, industrial components and identification tags. As with any product, use of Texin 288LW 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 resins are hygroscopic and will absorb ambient moisture. The presence of moisture can adversely affect processing characteristics and the quality of parts. Therefore, the resins should remain in their sealed containers and be stored under cool and dry conditions until used. Storage temperature should not exceed 86ºF (30ºC). Unused resin from opened containers, or reground material that is not to be used immediately, should be stored in sealed containers.

Prior to processing, Texin 288LW resin must be thoroughly dried for a minimum of 2 hours in a desiccant dehumidifying hopper dryer to a moisture content of less than 0.03%. Hopper inlet air temperature should be 210-230ºF (93-104ºC), the inlet air dew point should be -20ºF(-29ºC) 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. Finished parts containing regrind must be tested to ensure that end-use requirements are fully met.

Injection Molding Conditions

Typical starting conditions for injection 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 Guidelines	
Barrel Temperatures:	
Rear	380°-410°F (190°-210°C)
Middle	380°-420°F (190°-215°C)
Front	390°-430°F (200°-220°C)
Nozzle	400°-440°F (205°-225°C)
Melt Temperature	400°-420°F (205°-215°C)
Mold Temperature	60°-100°F (15°-40°C)
Injection Pressure	6,000-15,000 psi
Hold Pressure	60-80% of Injection Pressure
Back Pressure	200 psi max
Screw Speed	40-80 rpm
Injection Speed	Slow to moderate
Cushion	1/8 inch max

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 Bayer MaterialScience representative or Bayer's Regulatory Affairs Manager in Pittsburgh, PA.

Health and Safety Information

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling Texin 288LW resin. Before working with this product, you must read and become familiar with the available information on its 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 Bayer MaterialScience representative or contact Bayer's product safety and Regulatory Affairs Department in Pittsburgh, Pa.

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

Typical Properties for Natural Resin*	ASTM Test Method (Other)	Texin 288LW Resin U.S. Conventional	SI Metric
General			
Specific Gravity	D 792 (ISO 1183)	1.20	
Shore Hardness	D 2240 (ISO 868)	88 A/38 D	
Taber Abrasion:	D 3489 (ISO 4649)		
H-18, 1,000-g Load, 1,000 Cycles		42 mg loss	
Bayshore Resilience	D2632	41%	
Mold Shrinkage at 100-mil Thickness:	D 955 (ISO 2577)		
Flow Direction		0.008 in/in (mm/mm)	
Cross-Flow Direction		0.008 in/in (mm/mm)	
Mechanical			
Tensile Strength	D 412 (ISO 37)	6,000 lbs/in^2	41.4 MPa
Tensile Stress at 100%	D 412 (ISO 37)	1,000 lbs/in^2	6.9 MPa
Tensile Stress at 300%	D 412 (ISO 37)	2,500 lbs/in^2	17.2 MPa
Ultimate Elongation	D 412 (ISO 37)	450%	
Tear Strength, Die "C"	D 624 (ISO 34)	600 lbf/in	105.1 kN/m
Flexural Modulus:	D 790 (ISO 178)		
73°F (23°C)		6,700 lbs/in^2	46.2 MPa
Compression Set (Postcured**):	D 395B (ISO 815)		
22 Hours at 158°F (70°C)		21%	
22 Hours at 73°F (23°C)		12%	
Thermal			
Glass Transition Temperature (Tg)	(DMA)[a]	-49°F	-45°C
Vicat Softening Temperature (Rate A)	D 1525 (ISO 306)	274°F	135°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

Note: The information contained in this bulletin is current as of October 2010. Please contact Bayer MaterialScience at 1-800-662-2927 to determine whether this publication has been revised.

Bayer MaterialScience LLC

100 Bayer Road • Pittsburgh, PA 15205-9741 • www.BayerMaterialScienceNAFTA.com

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