Texin® STX-LG-20

High Modulus, 20% Glass-Fiber-Reinforced Thermoplastic Polyurethane

Description and Applications
Texin STX-LG-20 resin is a high performance glass-reinforced thermoplastic polyurethane which possesses an excellent combination of rigidity and toughness. This resin exhibits excellent heat and chemical resistance along with ease of processing and good surface appearance. Other key attributes of Texin STX-LG-20 include low moisture absorption, low mold shrinkage, a low coefficient of thermal expansion, and good abrasion resistance. Designed for injection molding, this grade contains a nominal 20% glass fiber reinforcement.

Typical uses may include housings, fasteners, caster hubs and metal replacement applications. As with any product, use of Texin STX-LG-20 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 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 95ºF (35ºC). Unused resin from opened containers, or reground material that is not to be used immediately, should be stored in sealed containers.

Texin STX-LG-20 resin must be thoroughly dried prior to processing. A desiccant dehumidifying hopper dryer is recommended. Hopper inlet air temperature should be 225º-250ºF (107º-121ºC). To achieve the recommended moisture content of less than 0.02%, the inlet air dew point should be -20ºF (-29ºC) or lower. The hopper capacity should be sufficient to provide a minimum residence time of 4 hours.

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 parts, sprues, runners, and/or trimmings. 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 Conditions	
Barrel Temperatures:	
Rear	460º-480ºF (238º-249ºC)
Middle	465º-485ºF (241º-252ºC)
Front	465º-485ºF (241º-252ºC)
Nozzle	470º-495ºF (243º-257ºC)
Melt Temperature	460-485ºF (238-252ºC)
Mold Temperature	110º-150ºF (43º-66ºC)
Injection Pressure	7,000-15,000 psi
Hold Pressure	60-80% of Injection Pressure
Back Pressure	800 psi max.
Screw Speed	40-80 rpm
Injection Speed	Moderate
Cushion	1/8 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 Material Science 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 STX-LG-20 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 Material

Science representative or contact Bayer's product safety and Regulatory Affairs Department in Pittsburgh, Pa.

Note: The information in this bulletin is current as of December 2012. Please contact Bayer Material Science for additional information or to determine whether this publication has been revised.

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

Typical Properties* for Natural Resin	ASTM Test Method (Other)	Units		Texin® STX-LG-20	
		U. S.	SI	U. S.	SI
		Conventional	Metric	Conventional	Metric
General					
Specific Gravity	D 792 (ISO 1183)			1.38	
Water Absorption, 24 hours	D 570 (ISO 62)	%		0.19	
Mold Shrinkage at 100-mil Thickness:	D 955 (ISO 2577)				
Flow Direction		in/in (mm/mm)		0.0035	
Mechanical					
Tensile Stress at Break	D 638	lb/in2	MPa	21,500	148
Tensile Elongation at Break	D 638	%		2.9	
Tensile Modulus	D638	lb/in2	MPa	1,000,000	6900
Flexural Modulus	D 790 (ISO 178)	lb/in2	MPa	1,000,000	6900
Flexural Stress (Maximum)	D 790 (ISO 178)	lb/in2	MPa	35,000	240
Impact Strength, Un-notched Izod	D 4812				
73°F (23°C), 0.125 in (3.2 mm) Thickness		ft•lb/in	J/m	19.2	1025

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

Note: The information contained in this bulletin is current as of December 2012. Please contact Bayer MaterialScience to determine whether this publication has been revised.

Bayer MaterialScience LLC

100 Bayer Road • Pittsburgh, PA 15205-9741 • Phone: 1-800-662-2927 • www.bayermaterialsciencenafta.com

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 test 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.

12/12