Developmental Product

Bayer MaterialScience

Product Information

TEXIN® 1208

Thermoplastic Polyurethane

Aromatic Polyether-Based Grade

Description and Applications

Texin 1208 resin is an aromatic polyether-based thermoplastic polyurethane with a Shore hardness of approximately 90A*. Texin 1208 resin offers outstanding abrasion resistance, impact strength, toughness and flexibility. It also exhibits excellent hydrolytic stability and microbial resistance.

Typical applications include injection molded articles needing high resilience and hydrolytic stability such as sport shoes, golf discs, skiing and other cold weather components. As with any product, use of Texin 1208 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 1208 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 185-210°F (85-99°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.

Injection 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 Temperatures:	
Rear	380°-410°F (193°-210°C)
Middle	390°-420°F (199°-216°C)
Front	390°-420°F (199°-216°C)
Nozzle	395°-425°F (202°-218°C)
Melt Temperature	390°-420°F (199°-216°C)
Mold Temperature	60°-100°F (16°-38°C)
Injection Pressure	6,000-15,000 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

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

Regulatory Compliance Information

The end uses of the product described in this bulletin must comply with applicable regulations, such as the FDA. 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.

Developmental Product Information

Texin 1208 resin is a developmental product and is not considered part of the Bayer MaterialScience line of standard commercial products. Complete commercialization and continued supply are not assured. The purchaser/user agrees that Bayer MaterialScience reserves the right to discontinue this product without prior notice.

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 1208 resin. Before working with 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 MaterialScience representative or contact Bayer's Product Safety and Regulatory Affairs Department in Pittsburgh, PA.

Typical Properties* for Natural Resin	ASTM Test Method (Other)	Units U.S. Conventional	Units SI Metric	Texin 1208 Resin U.S. Conventional	Texin 1208 Resin SI Metric
General					
Specific Gravity	D 792 (ISO 1183)			1.11	
Shore Hardness	D 2240 (ISO 868)	A Scale		90	
Taber Abrasion	D 3489 (ISO 4649)				
H-18 wheel, 1000-g load, 1000 cycles		mg Loss		46	
Bayshore Resilience	D 2632	%		52	
Mold Shrinkage at 100-mil Thickness:	D 955 (ISO 2577)				
Flow Direction		in/in (mm/mm)		0.008	
Cross-Flow Direction		in/in (mm/mm)		0.008	
Mechanical					
Tensile Strength	D 412 (ISO 37)	lb/in^2	MPa	3,000	20.7
Tensile Stress at 100 % Elongation	D 412 (ISO 37)	lb/in^2	MPa	1,100	7.6
Tensile Stress at 300 % Elongation	D 412 (ISO 37)	lb/in^2	MPa	1,800	12.4
Ultimate Elongation	D 412 (ISO 37)	%		550	
Tear Strength, Die “C”	D 624 (ISO 34)	lbf/in	kN/m	500	87.5
Flexural Modulus	D 790 (ISO 178)				
158°F 70°C)		lb/in^2	MPa	5,100	35.1
73°F (23°C)		lb/in^2	MPa	9,400	64.7
-22°F (-30°C)		lb/in^2	MPa	39,600	273.2
Compression Set (Post-cured**):	D 395B (ISO 815)				
22 hours at 158°F (70°C)		%		48	
22 hours at 73°F (23°C)		%		23	
Thermal					
Vicat Softening Temperature (Rate A)	D 1525 (ISO 306)	°F	°C	214	101
Glass Transition Temperature (Tg)	(DMA)[a]	°F	ºC	-74	-59

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*** 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 June 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

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