

Precision Packing TPU #2045 is a 45D Thermoplastic Urethane. It is used to make Vee Rings, Wipers, and U-cups.

Properties	Test Method	Value
Minimum Operating Temperature	Supplier Recommendation	-40° C -40° F
Maximum Continuous Operating Temperature	Supplier Recommendation	104° C 220° F
Maximum Peak Operating Temperature	Supplier Recommendation	115° C 240° F
Flexural modulus 73° F	ASTM D790	10000 lb/in2
Izod notched impact strength 73° F; 0.125 in	ASTM D256	no break
Izod notched impact strength -22° F; 0.125 in	ASTM D256	3.3 ft-lb/in
Tensile Strength	ASTM D412	6000 lb/in2
Ultimate elongation	ASTM D412	500%
Tensile Stress at 50% elongation	ASTM D412	1100 lb/in2
Compression Set, as molded 22 h at 73 °	ASTM D395-B	18%
Compressive Load 5% deflection	ASTM D575	300 lb/in2
Compressive Load 10% deflection	ASTM D575	560lb/in2
Compressive Load 20% deflection	ASTM D575	1000 lb/in2
Compressive Load 50% deflection	ASTM D575	3400 lb/in2
Tear strength, Die C	ASTM D624	700 lbf/in
Glass transition temperature DMA	DMA	-51° F
Low-temperature brittle point	ASTM D746	<-90° F
Vicat softening temperature Rate A; 1kg; 50° C/h	ASTM D1525	298° F
UL 94 Flame Class Thickness tested: 1.5 mm	UL 94	HB Class
Specific Gravity	ASTM D792	1.21
Taber abrasion H-18 wheel: 1,000-g: 1,000 cycle	ASTM D3489	70 mg loss
Bayshore resilience	ASTM D2632	45%

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Precision Packing TPU #2055 is a 55D Thermoplastic Urethane. It is used to make Vee Rings, Wipers, and U-cups.

Properties	Test Method	Value
Minimum Operating Temperature	Supplier Recommendation	-40° C -40° F
Maximum Continuous Operating Temperature	Supplier Recommendation	104° C 220° F
Maximum Peak Operating Temperature	Supplier Recommendation	115° C 240° F
Flexural modulus 73 °F	ASTM D790	20000 lb/in2
Flexural modulus -22°F	ASTM D790	175000 lb/in2
Shear Strength	ASTM D732	5585 ft-lb/in2
Tensile Strength	ASTM D412	7000 lb/in2
Ultimate elongation	ASTM D412	500%
Tensile Stress at 50% elongation	ASTM D412	1800 lb/in2
Compression Set, as molded 22 h at 73 °	ASTM D395-B	20%
Compressive Load 5% deflection	ASTM D575	565 lb/in2
Compressive Load 10% deflection	ASTM D575	1075 lb/in2
Compressive Load 20% deflection	ASTM D575	1840 lb/in2
Compressive Load 50% deflection	ASTM D575	5890 lb/in2
Tear strength, Die C	ASTM D624	900 lbf/in
Glass transition temperature DMA	DMA	-15° F
Low-temperature brittle point	ASTM D746	<-90° F
Deflection temperature under load 66psi	ASTM D648	139° F
Vicat softening temperature Rate A: 1kg:50°C/h	ASTM D1525	334° F
UL94 Flame Class Thickness Tested: 1.57mm	UL 94	HB Class
Specific Gravity	ASTM D792	1.21
Taber abrasion H-18 wheel: 1,000-g: 1,000 cycle	ASTM D3489	50 mg loss
Bayshore resilience	ASTM D2632	40%

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Precision Packing GFMNylon #3200 is a Type 6 Glass and Mineral Filled Nylon. It is used to make precision CNC machined bearings.

Properties	Test Method	Value
Minimum Operating Temperature	Supplier Recommendation	-40° C -40° F
Maximum Continuous Operating Temperature	Supplier Recommendation	176° C 350° F
Maximum Peak Operating Temperature	Supplier Recommendation	198° C 390° F
Mechanical		
Tensile Strength	ASTM D 638	30,000 PSI
Elongation @ Break	ASTM D 638	3%
Flexural Modulus	ASTM D 790	1,000,000 PSI
Flexural Strength	ASTM D 790	29,000 PSI
Izod Impact	ASTM D 256	1 ft lb/in
Thermal		
Heat Deflection Temperature		
1.8 Mpa (264 psi)	ASTM D 648	455° F
Melting Point	ASTM D 3418	491° F
Other		
Specific Gravity	ASTM D 792	1.46
Ash (Fiberglass Content)	ASTM D 5630	33 +/- 3%
Processing		
Melt Temperature Range		550-580° F
Mold Temperature Range		150-250° F
Processing Moisture Content		<0.20

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Precision Packing GFNylon #3300 is a Type 6,6 Glass Filled Nylon. It is used to make Male and Female Adaptors, Guide Rings, Wear Rings, and Back-Up Rings.

Properties	Test Method	Value
Minimum Operating Temperature	Supplier Recommendation	-40° C -40° F
Maximum Continuous Operating Temperature	Supplier Recommendation	176° C 350° F
Maximum Peak Operating Temperature	Supplier Recommendation	198° C 390° F
Mechanical		
Tensile Strength	ASTM D 638	22,000 PSI
Elongation @ Break	ASTM D 638	5%
Flexural Modulus	ASTM D 790	1,250,000 PSI
Flexural Strength	ASTM D 790	31,000 PSI
Izod Impact	ASTM D 256	1.8 ft lb/in
Thermal		
Heat Deflection Temperature	ASTM D 648	
1.8 Mpa (264 psi)		450° F
Melting Point	ASTM D 3418	493° F
Other		
Specific Gravity	ASTM D 792	1.39
Ash (Fiberglass Content)	ASTM D 5630	33 +/- 3%
Processing		
Melt Temperature Range		550-580° F
Mold Temperature Range		150-250° F
Processing Moisture Content		<0.20

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Precision Packing TPE #4040 is a 40D Thermoplastic Elastomer. It is used to make Vee Rings, Wipers, and U-cups.

Properties	Test Method	Value
Minimum Operating Temperature	Supplier Recommendation	-40° C -40° F
Maximum Continuous Operating Temperature	Supplier Recommendation	104° C 220° F
Maximum Peak Operating Temperature	Supplier Recommendation	115° C 240° F
Color	---	NATURAL
Melt Flow (220° C@ 2.16 KG)	ASTM D1238	16.0 g/10 min.
Hardness	ASTM D2240	40 +/- 2 Shore D
Specific Gravity	ASTM D792	1.17 +/- 0.03 g/cm3
Tensile Stress (73° F)	ASTM D638	3,000 psi
Tensile Strain (73° F)	ASTM D638	650%
Flexural Modulus (73° F)	ASTM D790	90,000 psi

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Precision Packing TPE #4055 is a 55D Thermoplastic Elastomer. It is used to make Vee Rings, Wipers, and U-cups.

Properties	Test Method	Value
Minimum Operating Temperature	Supplier Recommendation	-40° C -40° F
Maximum Continuous Operating Temperature	Supplier Recommendation	104° C 220° F
Maximum Peak Operating Temperature	Supplier Recommendation	115° C 240° F
Color	---	NATURAL
Melt Flow (220° C@ 2.16 KG)	ASTM D1238	16.0 g/10 min.
Hardness	ASTM D2240	55 +/- 2 Shore D
Specific Gravity	ASTM D792	1.20 +/- 0.03 g/cm3
Tensile Stress (73° F)	ASTM D638	6,000 psi
Tensile Strain (73° F)	ASTM D638	550%
Flexural Modulus (73° F)	ASTM D790	310,000 psi

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Precision Packing NeoFab #6600 is a Neoprene coated Fabric Material. It is used to make Vee Rings, Piston Cups and NeoFab U-Cups.

Properties	Test Method	Value
Minimum Operating Temperature	Supplier Recommendation	-53°C -65° F
Maximum Continuous Operating Temperature	Supplier Recommendation	104°C 220°F
Maximum Peak Operating Temperature	Supplier Recommendation	121°C 250°F
Color (Neoprene) Black, (Fabric) Dyed Black	Visual	Black
Curl Test	Proprietary	Pass
Gauge	ASTM D751-89 sec 9	Minimum 250 psi
Mullen Burst	ASTM D751-89 sec 18.3	.040-.046"
Peel Adhesion @12"/min Slide 1	ASTM D751-89 sec 43.1.1	Minimum 4 lbs/in
Peel Adhesion @12"/min Slide 2	ASTM D751-89 sec 43.1.1	Minimum 4 lbs/in
Strip Tensile Warp	ASTM D751-89 sec 16	Minimum 120 lbs/in

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2145 Centerwood Drive
Warren, MI 48091

T 586-756-8700
F 586-756-8710
cs@precpack.com

www.precpack.com

Standard Terms and Conditions of Sale

Open Account Terms: Payment is due net 30 days from Invoice date. Accounts over 30 days will be placed on credit hold. Customers who continuously pay over 30 days will be switched to cash in advance and lose any discounted pricing.

Returns: No returns will be accepted without return authorization number. No product may be returned more than 14 days after receiving. All returns are subject to a 20% restocking fee. Special order items and tooling items may not be returned.

Minimum Order and Line Item: Minimum Order and Line Items are \$100

1) Seller warrants that the products (or materials) delivered hereunder meet Seller's standard specifications for the products or such other specifications as may have been expressly agreed to herein. SELLER MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESSED OR IMPLIED WARRANTY. Buyer assumes all risk and liability resulting from use of the products delivered hereunder, whether used singly or in combination with other products.

2) No claim of any kind, whether as to products (or materials) delivered or for non-delivery of products, and whether or not based on negligence, shall be greater in amount than the purchase price of the products in respect of which damages are claimed; and failure to give notice of claim within thirty (30) days (or such other period as may be provided in the Special Conditions of Sales referred to in Condition 10 hereof) from date of delivery or the date fixed for delivery (in case of non-delivery), shall constitute a waiver by Buyer of all claims in respect of such products. No charge or expense incident to any claims will be allowed unless approved by an authorized representative of Seller. THE REMEDY HEREBY PROVIDED SHALL BE THE EXCLUSIVE AND SOLE REMEDY OF BUYER, AND IN NO EVENT SHALL EITHER PARTY BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER OR NOT CAUSED BY OR RESULTING FROM THE NEGLIGENCE OF SUCH PARTY.

3) No liability shall result from delay in performance or non-performance, directly caused by circumstances beyond the control of the party affected, including, but not limited to, Act of God, fire, explosion, flood, war, act of or authorized by any Government, accident, labor trouble or shortage, inability to obtain material, equipment or transportation. Quantities so affected may be eliminated from the agreement without liability, but the agreement shall remain otherwise unaffected. Seller shall have no obligation to purchase supplies of the products (or materials) specified herein to enable it to perform this agreement.

4) It is further understood and agreed between Buyer and Seller that if this agreement covers products (or materials) that must be necessarily be manufactured especially for buyer and is suspended or terminated for any reason, Buyer will take delivery of and make payment for such products as have been completed and such as are in process on the date notice of suspension or termination is received by Seller; provided, that if Buyer for any reason cannot accept delivery of such products, he will make payment therefore as though delivery had been made and seller will store such product for Buyer's account and at Buyer's expense.

5) If for any reason Seller is unable to supply the total demand for products (or material) specified herein, Seller may distribute its available supply among any or all purchasers, as well as departments and division of Seller, on such basis as it may deem fair and practical without liability for any failure or performance which may result therefrom.

6) If any Government action should place or continue limitations on the price provided for in this agreement such that it would be illegal or against public or Government policy for Seller to charge, assess or receive the full amount of or to increase such prices as determined by this agreement, then Seller shall have the option (1) to continue to perform under this agreement subject to such adjustments in prices that Seller may deem necessary to comply with such Government action. (2) to revise this agreement, subject to Buyer's approval, in order to most nearly accomplish the original intent of this agreement or (3) to terminate performance of the affected portions of the agreement without liability for any damages.

7) At Buyer's request, Seller may furnish such technical assistance and information as it has available with respect to the use of the products (or materials) covered by this agreement. Unless otherwise agreed in writing, all such technical assistance and information will be provided gratis; however Buyer assumes sole responsibility for results obtained in reliance thereon.

8) The Buyer shall reimburse the Seller for all taxes, excises or other charges which the Seller may be required to pay to any Government (National, State, Local) upon the sale, production or transportation of the products sold hereunder.

9) In the event Buyer fails to fulfill Seller's terms of payment, or in case Seller shall have any doubt at any time as to Buyer's financial responsibility, Seller may decline to make further deliveries except upon receipt of cash or satisfactory security.

10) In addition to the Standard Conditions of Sale set forth herein, any Special Conditions of Sale set forth in the Invoice on reverse side hereof, for the products (or materials) covered by this agreement shall apply and are incorporated by reference herein.

11) This document contains all of the terms and conditions with respect to the sale and purchase of the products (or materials) sold hereunder. These terms and conditions supersede any of previous date and no modification thereof shall be binding on Seller unless separately contracted in writing and agreed to by a duly authorized representative of Seller. No modifications shall be affected by the acknowledgement or acceptance of purchase order forms stipulating different conditions. Unless Buyer shall notify Seller in writing to the contrary as soon as practicable after receipt of this document by Buyer, acceptance of the terms and conditions hereof by Buyer shall be indicated and, in the absence of such notification, the Buyer's assent to the terms and conditions hereof. Waiver of either party of any default by the other hereunder shall not be deemed a waiver by such party of any default by the other which may thereafter occur.