



# Pellethane® 5855-70D-WF TPU

## PRELIMINARY DATA SHEET

**Type:** Medical Grade Aromatic Polyester-based Thermoplastic Polyurethane (TPU)

**Features:** High stiffness TPU alloy

**Process:** Extrusion and Injection Molding

Properties	Test Method	Value	Units
<b>Physical</b>			
Specific Gravity	ASTM D792	1.14	g/mL
<b>Mechanical</b>			
Durometer Hardness	ASTM D2240	70	Shore D
Tensile Modulus	ASTM D412		
50% Elongation		29.0 (4200)	MPa (psi)
100% Elongation		27.5 (4000)	MPa (psi)
Ultimate Tensile Strength	ASTM D412	32.4 (4700)	MPa (psi)
Ultimate Elongation	ASTM D412	300	%
Flexural Modulus	ASTM D790	793 (115,000)	MPa (psi)
Tear Strength Graves	ASTM D624 (die C)	135 (770)	kN/m (lb/in)
Taber Loss, 1000 cycles	ASTM D3389 (H18, 1000g)	0.002 (57)	oz (mg)
Coefficient of Friction (COF)	ASTM D1894 Against Stainless Steel, Dry		
Static COF		0.26	-
Kinetic COF		0.24	-
<b>Thermal</b>			
T <sub>m</sub> (by DSC, second heat)	Lubrizol internal method	150 (300)	°C (°F)
T <sub>g</sub> (by DSC, second heat)	Lubrizol internal method	-14 (7)	°C (°F)
Vicat Softening Point	ASTM D1525	105 (221)	°C (°F)

Prior to testing samples were conditioned at 23°C for 48 hours. Physical test data based on extruded & compression molded samples.

These test results are based on small samples and do not necessarily represent average results from larger test samples. This information should NOT be used for establishing engineering or manufacturing guidelines and specifications.

The information contained herein is believed to be reliable, but no representations, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications or the results to be obtained. The information often is based on laboratory work with small-scale equipment and does not necessarily indicate end product performance or reproducibility. Formulations presented may not have been tested for stability and should be used only as a suggested starting point. Because of the variations in methods, conditions and equipment used commercially in processing these materials, no warranties or guarantees are made as to the suitability of the products for the applications disclosed. Full-scale testing and end product performance are the responsibility of the user. Lubrizol Advanced Materials, Inc. shall not be liable for and the customer assumes all risk and liability for any use or handling of any material beyond Lubrizol Advanced Materials, Inc.'s direct control. The SELLER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Nothing contained herein is to be considered as permission, recommendation nor as an inducement to practice any patented invention without permission of the patent owner.

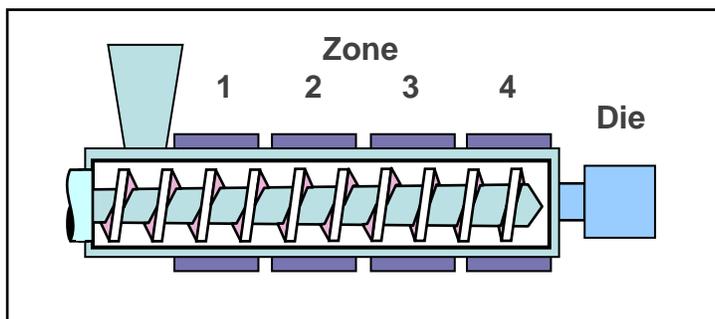
**Handling Conditions:**

Properties of all thermoplastic polyurethane products in the molten state are adversely affected by moisture. For the best results, always dry the material at least 2-4 hours at 104°C (220°F) in a machine mounted dehumidifying dryer (a desiccant dryer delivering air at 1 liter/sec/kg at -40°C dew point (1 cfm/lb at -40°F dew point). A dehumidifying dryer hopper or one shot loader is also recommended. Depending on the applied processing technique, the maximum moisture level should be 0.02%. Never to exceed 500°F (260°C) melt.

**Processing Conditions:**

Pellethane® 5855-70D-WF can be processed on any conventional extruder or molder.

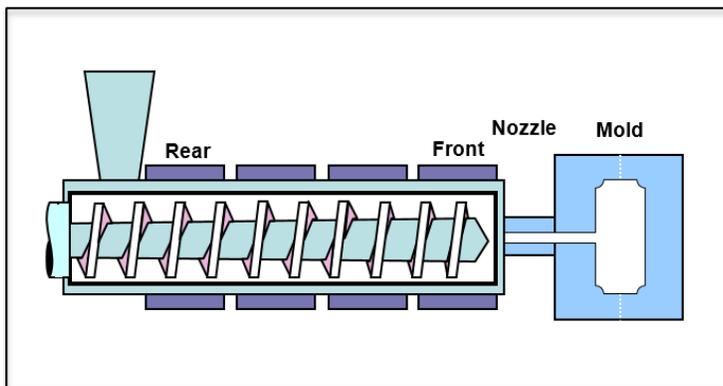
**Recommended Starting Extrusion Temperature Profile:**



	°C/°F
<b>Zone 1</b>	193/380
<b>Zone 2</b>	199/390
<b>Zone 3</b>	205/400
<b>Zone 4</b>	210/410
<b>Die</b>	210/410

Screen Pack Recommendation: 20/40/80/20

**Recommended Starting Injection Molding Temperature Profile:**



	°C/°F
<b>Rear</b>	193/380
<b>Front</b>	199/390
<b>Nozzle</b>	205/400
<b>Melt</b>	205/400
<b>Mold</b>	27/80

For further information refer to Lubrizol Advanced Materials processing guides

<https://www.lubrizol.com/Life-Sciences/Literature/Medical-Device-Literature>

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