Lubrizol LifeSciences

TECHNICAL DATA SHEET

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
Physical			
Specific Gravity	ASTM D792	1.14	g/mL
Mechanical			
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	-
Thermal			
T_m (by DSC, second heat)	Lubrizol internal method	150 (300)	°C (°F)
T_g (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.

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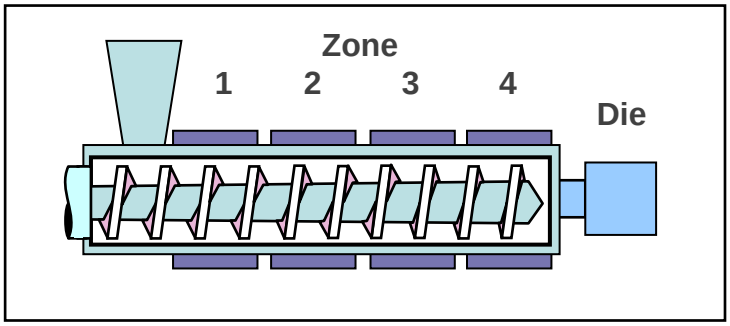
Handling Conditions:
Properties of all thermoplastic polyurethane products in the molten state are adversely affected by moisture. For the best results, always dry the material at least 2-4 hours at 104°C (220°F) in a machine mounted dehumidifying dryer (a desiccant dryer delivering air at 1 liter/sec/kg 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.

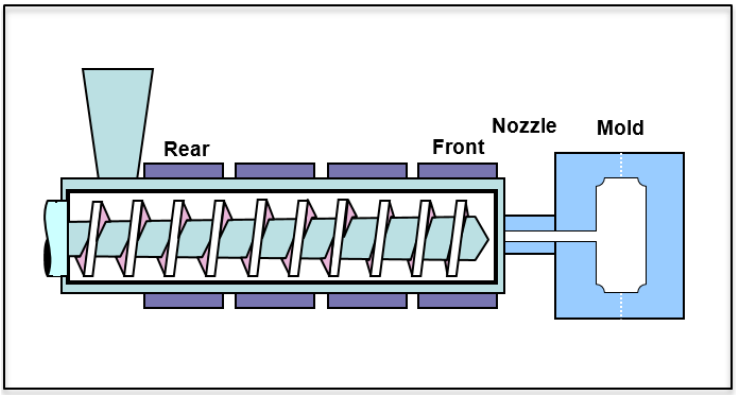
Recommended Starting Extrusion Temperature Profile:



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

Screen Pack Recommendation: 20/40/80/20

Recommended Starting Injection Molding Temperature Profile:



	°C/°F
Rear	193/380
Front	199/390
Nozzle	205/400
Melt	205/400
Mold	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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