



Lubrizol LifeSciences

Pellethane® 5863-87A TPU

Type: Aromatic Polyether-based Thermoplastic Polyurethane (TPU)

Features: Good physical properties, hydrolysis resistance, low temperature performance and abrasion with a wide processing window for extrusion.

Process: Extrusion and Injection Molding.

Properties	Test Method	Values	Units
Durometer Hardness, Shore	ASTM D2240	87	A
Specific Gravity	ASTM D792	1.12	
Tensile Modulus 100% elongation 300% elongation	ASTM D412	1000 (6.9) 1800 (12.4)	psi (MPa) psi (MPa)
Ultimate Tensile Strength	ASTM D412	7500 (51.7)	psi (MPa)
Ultimate Elongation	ASTM D412	500	%
Tear Strength Graves Trouser	ASTM D624 (die C) ASTM D470	500 (8.9) 150 (2.7)	lb/in (kg/mm) lb/in (kg/mm)
Taber Loss (1000 rev)	ASTM D3389 (H18, 1000g)	0.00141 (40)	oz (mg)
T _m (by DSC)	Lubrizol	284 (140)	°F (°C)
T _g (by DSC)	Lubrizol	-49 (-45)	°F (°C)
Application Properties			
Tensile Set (200% elongation)	ASTM D412	18	%
Kofler Melt Point	Lubrizol	302 (150)	°F (°C)
Haze (pressed between glass)	ASTM D1003	1.0	%
Volume Swell in Water (24h/23C)	ASTM D471	1.1	%

Prior to testing samples were conditioned at 23°C for 48 hours.

Based on extruded sheet (30 mils)

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.

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 (270°C) melt.

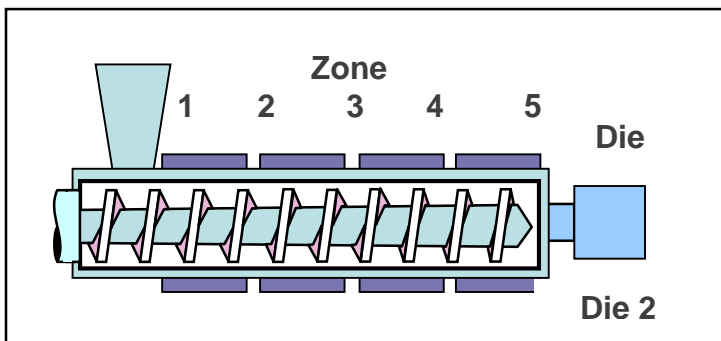
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Processing Conditions:

Pellethane® 5863-87A can be processed on any conventional extruder or mold.

Recommended Starting Extrusion Temperature Profile:

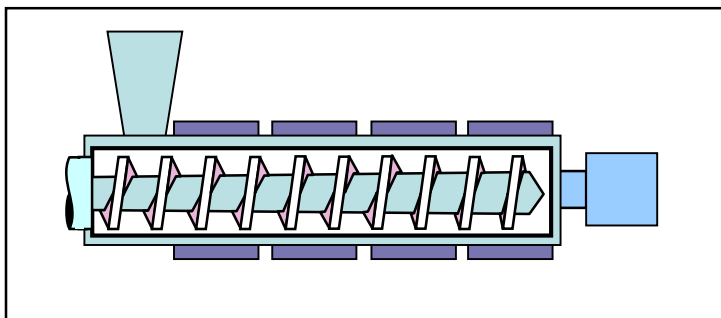


20/40/80/20

	°F/°C
Zone 1	350/177
Zone 2	360/182
Zone 3	370/188
Zone 4	380/193
Adapter 5	380/193
Die	380/193
Die 2	380/193

Screen Pack Recommendation:

Recommended Starting Injection Molding Temperature Profile:



	°F/°C
Rear	360/182
Front	370/188
Nozzle	380/193
Melt	380/193
Mold	60/15

For further information refer to Lubrizol Advanced Materials processing guides.

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