



Lubrizol LifeSciences

# Pellethane® 5863-80A TPU

**Type:** Aromatic Polyether-based Thermoplastic Polyurethane (TPU)

**Features:** High moisture vapour transmission. Good low temperature properties and elasticity.

**Process:** Extrusion and Injection Molding.

Properties	Test Method	Values	Units
Durometer Hardness, Shore	ASTM D2240	80	A
Specific Gravity	ASTM D792	1.21	
Tensile Modulus 100% elongation 300% elongation	ASTM D412	650 (4.5) 1200 (8.3)	psi (MPa) psi (MPa)
Ultimate Tensile Strength	ASTM D412	4500 (31.0)	psi (MPa)
Ultimate Elongation	ASTM D412	700	%
Tear Strength Graves Trouser	ASTM D624 (die C) ASTM D470	350 (6.3) 100 (1.8)	lb/in (kg/mm) lb/in (kg/mm)
Taber Loss (1000 rev)	ASTM D3389 (H18, 1000g)	0.0021 (60)	oz (mg)
T <sub>m</sub> (by DSC)	Lubrizol	275 (135)	°F (°C)
T <sub>g</sub> (by DSC)	Lubrizol	-35 (-37)	°F (°C)
<b>Application Properties</b>			
Tensile Set (200% elongation)	ASTM D412	10	%
Kofler Melt Point	Lubrizol	275 (135)	°F (°C)
Volume Swell in Water (24h/23C)	ASTM D471	60	%
MVT: upright cup (23°C, 50%RH)	ASTM E96B	650	g/m <sup>2</sup> *24h
MVT: Mocon (38°, 90%RH)	ASTM D6701	6500	g/m <sup>2</sup> *24h

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 82°C (180°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.

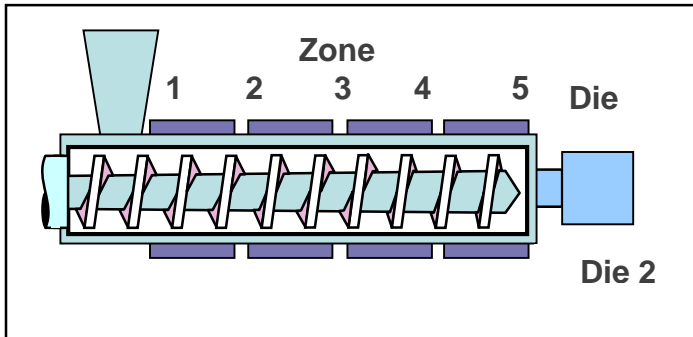
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**Processing Conditions:**

Pellethane® 5863-80A can be processed on any conventional extruder or molder.

**Recommended Starting Extrusion Temperature Profile:**



	°F/°C
<b>Zone 1</b>	340/171
<b>Zone 2</b>	350/177
<b>Zone 3</b>	360/182
<b>Zone 4</b>	370/188
<b>Adapter 5</b>	380/193
<b>Die</b>	380/193
<b>Die 2</b>	380/193

Screen Pack Recommendation: 20/40/80/20

**For further information refer to Lubrizol Advanced Materials processing guides.**

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