

# Pellethane® 5863-82A-R1 TPU

**Type:** Medical Grade 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	82	A
Specific Gravity	ASTM D792	1.13	
<b>Tensile Properties</b>			
Modulus at 100% Elongation	ASTM D412	750 (5.2)	psi (MPa)
Modulus at 300% Elongation	ASTM D412	1100 (7.6)	psi (MPa)
Ultimate Tensile Strength	ASTM D412	6000 (41.4)	psi (MPa)
Ultimate Elongation	ASTM D412	640	%
<b>Tear Strength</b>			
Graves	ASTM D624 (die C)	400 (7.1)	lb/in (kg/mm)
Trouser	ASTM D470	130 (2.3)	lb/in (kg/mm)
Taber Loss (1000 rev)	ASTM D3389 (H18, 1000g)	0.0022 (60)	oz (mg)
Tm (by DSC)	Lubrizol	248 (120)	°F (°C)
Tg (by DSC)	Lubrizol	-58 (-50)	°F (°C)
<b>Application Properties</b>			
Tensile Set (200% elongation)	ASTM D412	15	%
Kofler Melt Point	Lubrizol	257 (125)	°F (°C)
Volume Swell in Water (24h/23C)	ASTM D471	2.1	%

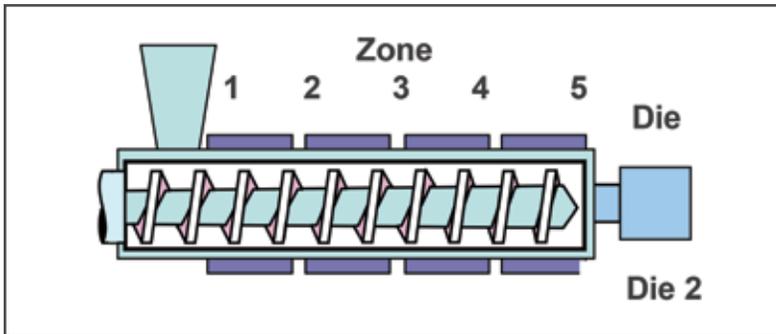
Prior to testing samples were conditioned at 23°C for 48 hours. Based on extruded sheet (30 mils). These test results are based on small samples and do not necessarily represent average results from larger test samples. **This information should NOT be used for establishing engineering or manufacturing 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® 5863-82A can be processed on any conventional extruder or molder.

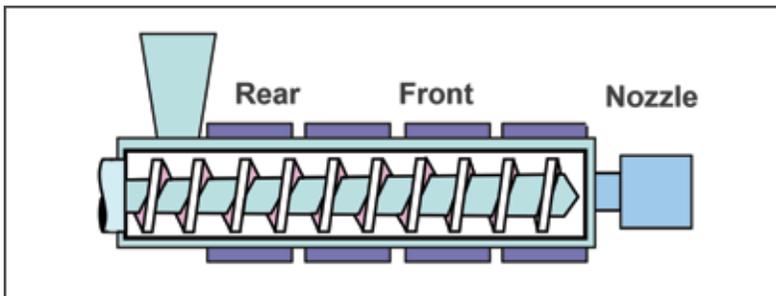
## Recommended Starting Extrusion Temperature Profile:



	°F/°C
<b>Zone 1</b>	330/166
<b>Zone 2</b>	340/171
<b>Zone 3</b>	350/177
<b>Zone 4</b>	360/182
<b>Adapter 5</b>	360/182
<b>Die</b>	360/182
<b>Die 2</b>	360/182

Screen Pack Recommendation: 20/40/80/20

## Recommended Starting Injection Molding Temperature Profile:



	°F/°C
<b>Rear</b>	350/177
<b>Front</b>	360/182
<b>Nozzle</b>	360/182
<b>Melt</b>	360/182
<b>Mold</b>	60/15

For Further information, refer to Lubrizol Life Science Health processing guides.