

# Pellethane® 5863-85A-R1 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

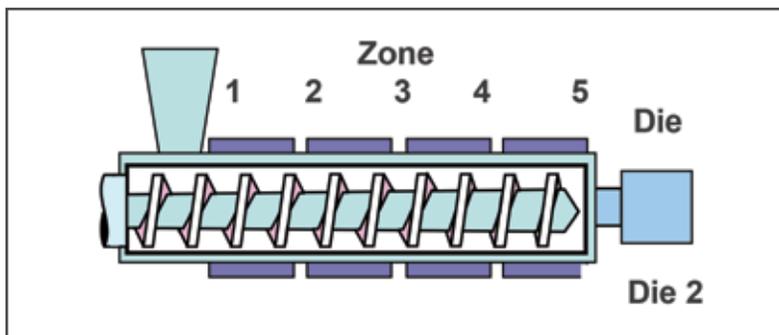
Properties	Test Method	Values	Units
Durometer (Shore Hardness)	ASTM D2240	85	A
Specific Gravity	ASTM D792	1.12	
Tensile Properties			
Modulus at 100% Elongation	ASTM D412	900 (6.2)	psi (MPa)
Modulus at 300% Elongation	ASTM D412	1500 (10.3)	psi (MPa)
Ultimate Tensile Strength	ASTM D412	7000 (48.3)	psi (MPa)
Ultimate Elongation	ASTM D412	570	%
Tear Strength			
Graves	ASTM D624 (die C)	490 (8.7)	lb/in (kg/mm)
Trouser	ASTM D470	150 (2.7)	lb/in (kg/mm)
Taber Loss (1000 rev)	ASTM D3389 (H18, 1000g)	0.00130 (37)	oz (mg)
Tm (by DSC)	Lubrizol	275 (135)	°F (°C)
Tg (by DSC)	Lubrizol	-58 (-50)	°F (°C)
Application Properties			
Tensile Set (200% elongation)	ASTM D412	14	%
Kofler Melt Point	Lubrizol	293 (145)	°F (°C)
Haze (pressed between glass)	ASTM D1003	1.8	%
Volume Swell in Water (24h/23C)	ASTM D471	1.7	%

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 (260°C) melt.

**Processing Conditions:** Pellethane 5863-85A-R1 can be processed on any conventional extruder or molder.

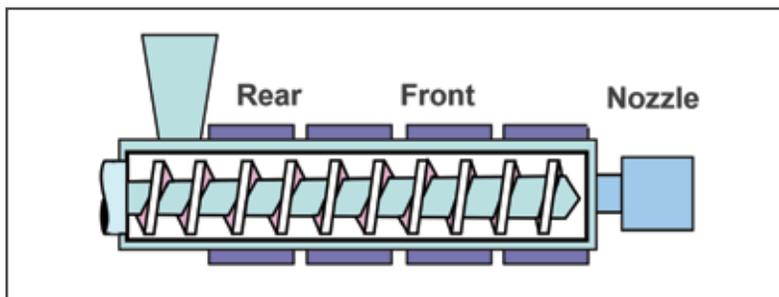
**Recommended Starting Extrusion Temperature Profile:**



	°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>	370/188
<b>Die</b>	370/188
<b>Die 2</b>	370/188

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>	370/188
<b>Melt</b>	370/188
<b>Mold</b>	60/15

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