

Pellethane® 5863-82AE-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

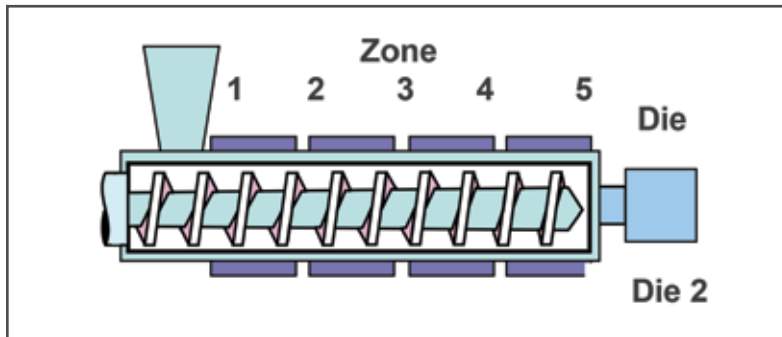
Properties	Test Method	Values	Units
Durometer (Shore Hardness)	ASTM D2240	82	A
Specific Gravity	ASTM D792	1.104	
Tensile Properties			
Modulus at 100% Elongation	ASTM D412	700 (4.8)	psi (MPa)
Modulus at 300% Elongation	ASTM D412	1100 (7.6)	psi (MPa)
Ultimate Tensile Strength	ASTM D412	5500 (37.9)	psi (MPa)
Ultimate Elongation	ASTM D412	650	%
Tear Strength			
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)	0.0008 (22)	oz (mg)
Tm (by DSC)	Lubrizol	266 (130)	°F (°C)
Tg (by DSC)	Lubrizol	-58 (-50)	°F (°C)
Application Properties			
Tensile Set (200% elongation)	ASTM D412	11	%
Kofler Melt Point	Lubrizol	257 (125)	°F (°C)
Haze (pressed between glass)	ASTM D1003	7.0	%
Volume Swell in Water (24h/23C)	ASTM D471	2.0	%

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 5863-82AE-R1 can be processed on any conventional extruder or molder.

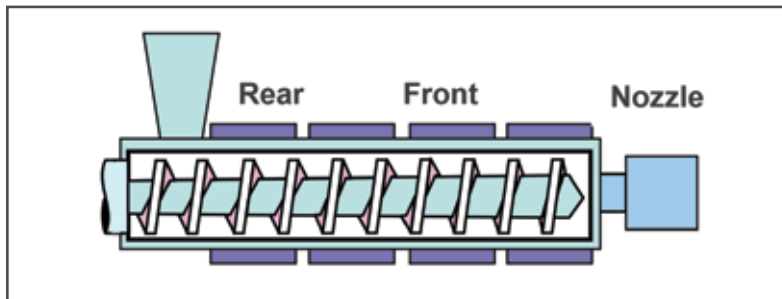
Recommended Starting Extrusion Temperature Profile:



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

Screen Pack Recommendation: 20/40/80/20

Recommended Starting Injection Molding Temperature Profile:



	°F/°C
Rear	340/171
Front	350/177
Nozzle	360/182
Melt	360/182
Mold	60/15

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