



Lubrizol LifeSciences

Carbothane™ TPU – Clear Aromatic

Type: Medical Grade Aromatic Polycarbonate-based Thermoplastic Polyurethanes (TPUs)

Features: Variety of hardnesses, good mechanical properties, good chemical resistance, excellent oxidative stability and biocompatibility properties and can be color-matched

Process: Extrusion and Injection Molding

Products & Properties	ASTM Test	AC-4075A	AC-4085A	AC-4095A	AC-4055D
Durometer (Shore Hardness)	D785	77A	85A	95A	56D
Specific Gravity	D792	1.19	1.20	1.21	1.22
Ultimate Tensile (psi)	D412	8000	9000	10000	11000
Ultimate Elongation (%)	D412	400	400	370	300
Tensile Modulus (psi)	D412				
at 100% Elongation		400	875	2125	3300
at 200% Elongation		1025	2100	4750	6700
at 300% Elongation		4400	6200	7700	n/a
Flexural Modulus (psi)	D790	1500	3500	10800	27700
Vicat Temperature (°C)	D1525	91	73	124	144
Mold Shrinkage (in/in) (1"x.25"x6" bar)	D955	0.011	0.011	0.009	0.008
Glass Transition Temperature	DSC	-23	-24	-10	NA

Note: These test results are based on small samples of Carbothane® polyurethanes and do not necessarily represent average results from larger test samples. This information should not be used for establishing engineering or manufacturing guidelines.

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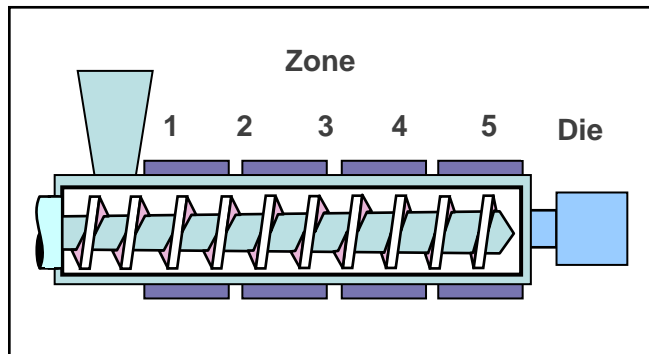
Handling Conditions:

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 two hours at 95°C (200°F) or overnight at 80°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 (260°C) melt temperature.

Processing Conditions:

Carbothane™ Aromatic TPU's can be processed on any conventional extruder or molder.

Recommended Starting Extrusion Temperature Profile:



	AC-4075A	AC-4085A	AC-4095A	AC-4055D
	°F/°C	°F/°C	°F/°C	°F/°C
Zone 1	410/210	410/210	410/210	410/210
Zone 2	420/215	420/215	420/215	420/215
Zone 3	430/221	430/221	430/221	430/221
Zone 4	430/221	430/221	430/221	430/221
Adapter 5	420/215	420/215	420/215	420/215
Die	420/215	420/215	420/215	420/215

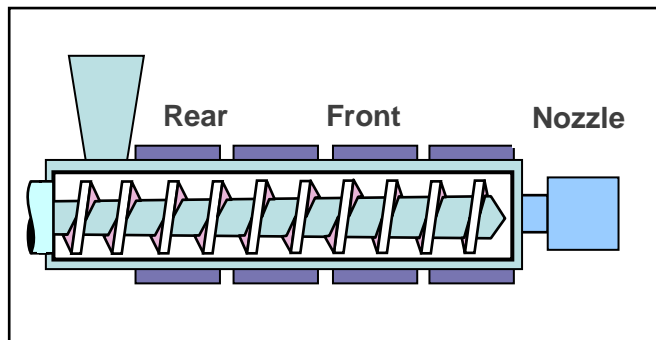
Screen Pack Recommendation: 88/60/500/100/88

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Recommended Starting Injection Molding Temperature Profile:



	AC-4075A	AC-4085A	AC-4095A	AC-4055D
	°F/°C	°F/°C	°F/°C	°F/°C
Rear	383/195	383/195	400/205	374/190
Front	392/200	392/200	410/210	392/200
Nozzle	383/195	383/195	419/215	410/210
Melt	392/200	392/200	410/210	410/210
Mold	50-80/10-27	50-80/10-27	50-80/10-27	50-80/10-38

For Further information, refer to Lubrizol Advanced Materials processing guides.

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