



## Aromatic Carbothane™ AC Series TPU

## Transparent Thermoplastic Polyurethane

**Type:** Medical grade polycarbonate-based aromatic Thermoplastic Polyurethanes (TPUs)

Features: This series exhibits excellent oxidative stability in blood contact and provides superior mechanical performance and chemical resistance properties

**Process:** Extrusion and injection molding

Products & Properties	ASTM Test	AC-4075A	AC-4085A	AC-4095A	AC-4055D	AC-4065D	AC-4075D
Durometer (Shore Hardness)	D2240	77A	85A	95A	56D	70D	75D
Specific Gravity	D792	1.19	1.20	1.21	1.22	1.22	1.22
Ultimate Tensile (psi)	D412	8000	9000	10,000	11,000	11,500	12,000
Ultimate Elongation (%)	D412	400	400	370	300	300	250
Tensile Modulus (psi)	D412						
at 100% Elongation		400	875	2125	3300	3000	4300
at 200% Elongation		1025	2100	4650	6700	5500	6000
at 300% Elongation		4400	6200	7700	_	_	_
Flexural Modulus (psi)	D790	1500	3500	10,800	27,700	60,000	150,000
Vicat Temperature (°C)	D1525	91	73	124	144	110	160
Mold Shrinkage (in/in) (1"x.25"x6" bar)	D955	0.011	0.011	0.011	0.009	0.008	0.007
Glass Transition Temperature (°C)	D3418 Second Heat	-15	-10	0	5	20	30

**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 or specifications.



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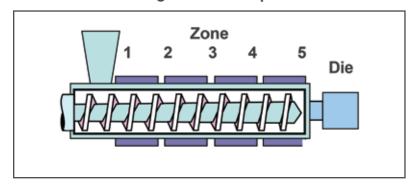




**Handling Conditions:** Properties of all thermoplastic polyurethane products in the molten state are adversely affected by moisture. For the best results, always dry the material at least two hours at 95°C (200°F) or overnight at 80°C (180°F) in a machine mounted dehumidifying dryer (a desiccant dryer 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:** Aromatic Carbothane™ TPUs can be processed on any conventional extruder or molder. Please refer to Lubrizol's <u>processing guide</u> for medical TPUs for further recommendations regarding equipment and process design.

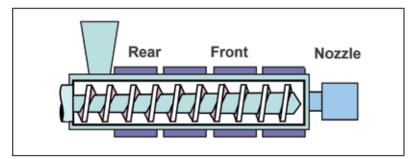
## **Recommended Starting Extrusion Temperature Profile:**



	AC-4075A	AC-4085A	AC-4095A	AC-4055D	AC-4065D	AC-4075D
	°F/°C	°F/°C	°F/°C	°F/°C	°F/°C	°F/°C
Zone 1	410/210	410/210	410/210	410/210	425/218	435/224
Zone 2	420/215	420/215	420/215	420/215	435/224	445/229
Zone 3	430/221	430/221	430/221	430/221	445/229	455/235
Zone 4	430/221	430/221	430/221	430/221	455/235	465/241
Adapter 5	420/215	420/215	420/215	420/215	425/218	435/224
Die	420/215	420/215	420/215	420/215	425/218	435/224

Screen Pack Recommendation: 100/500/250 mesh

## **Recommended Starting Injection Molding Temperature Profile:**



	AC-4075A	AC-4085A	AC-4095A	AC-4055D	AC-4065D	AC-4075D
	°F/°C	°F/°C	°F/°C	°F/°C	°F/°C	°F/°C
Rear	383/195	383/195	400/205	375/190	460/237	460/237
Front	392/200	392/200	410/210	390/200	460/237	460/237
Nozzle	383/195	383/195	420/215	410/210	440/225	460/237
Melt	392/200	392/200	410/210	410/210	400/204	410/210
Mold	50-80/10-27	50-80/10-27	50-80/10-27	50-80/10-27	50-80/10-27	50-80/10-27

Further guidance is available on the LLS Health Resource Hub or by contacting our technical solutions team.



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