

Aliphatic Carbothane™ PC Series TPU

Transparent Thermoplastic Polyurethane

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

Features: This series exhibits excellent oxidative stability in blood contact, inherently resists yellowing by aging and sterilization, and provides good mechanical performance

Process: Extrusion and injection molding

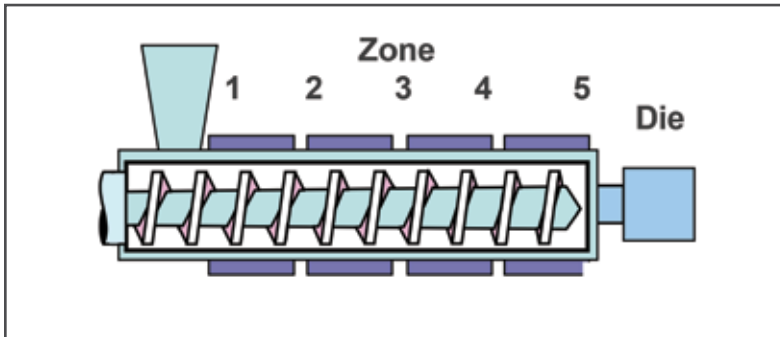
Products & Properties	ASTM Test	PC-3575A	PC-3585A	PC-3595A	PC-3555D	PC-3572D
Durometer (Shore Hardness)	D2240	70A	80A	90A	50D	69D
Specific Gravity	D792	1.15	1.15	1.15	1.15	1.15
Ultimate Tensile (psi)	D412	7200	8300	9600	9700	9600
Ultimate Elongation (%)	D412	600	425	400	325	325
Tensile Modulus (psi)	D412					
at 100% Elongation		350	600	1050	1750	3500
at 200% Elongation		500	1100	2250	3100	5400
at 300% Elongation		2000	4000	6400	6800	9200
Flexural Modulus (psi)	D790	1600	1470	6400	19,300	134,000
Vicat Temperature (°C)	D1525	46	58	62	51	63
Mold Shrinkage (in/in) (1"x.25"x6" bar)	D955	0.010	0.010	0.010	0.008	0.008
Glass Transition Temperature (°C)	D3418 Second Heat	-29	-27	-25	-25	50

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.

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 four hours at 65°C (150°F) or overnight at 57°C (135°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 0.05%**. Never to exceed 500°F (260°C) melt temperature.

Processing Conditions: Aliphatic Carbothane™ TPUs can be processed on any conventional extruder or molder. Please refer to Lubrizol's [processing guides](#) for medical TPUs for further recommendations regarding equipment and process design.

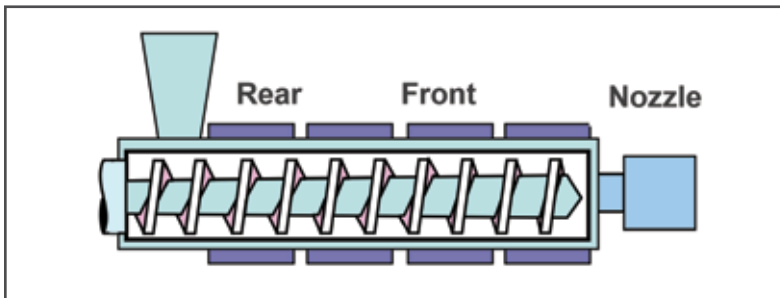
Recommended Starting Extrusion Temperature Profile:



	PC-3575A	PC-3585A	PC-3595A	PC-3555D	PC-3572D
	°F/°C	°F/°C	°F/°C	°F/°C	°F/°C
Zone 1	360/182	360/182	360/182	380/193	380/193
Zone 2	370/188	370/188	370/188	390/199	390/199
Zone 3	380/193	380/193	380/193	400/204	400/204
Zone 4	390/199	390/199	390/199	410/210	410/210
Adapter 5	400/204	400/204	400/204	420/216	420/216
Die	400/204	400/204	400/204	420/216	420/216

Screen Pack Recommendation: 100/500/250 mesh

Recommended Starting Injection Molding Temperature Profile:



	PC-3575A	PC-3585A	PC-3595A	PC-3555D	PC-3572D
	°F/°C	°F/°C	°F/°C	°F/°C	°F/°C
Rear	365/185	365/185	375/190	375/190	375/190
Front	375/190	375/190	385/196	385/196	385/196
Nozzle	385/196	385/196	395/202	395/202	395/202
Melt	385/196	395/202	410/210	395/202	395/202
Mold	50-80/10-27	50-80/10-27	50-80/10-27	50-100/10-38	60-110/16-43

Further guidance is available on the [LLS Health Resource Hub](#) or by contacting our [technical solutions team](#).