

Aliphatic Carbothane™ PC Series TPU

20% Barium Sulfate Filled Thermoplastic Polyurethane

Type: Radiopaque (20% BaSO₄ filled) 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. The inclusion of 20% (by weight) barium sulfate (BaSO₄) in the material provides radiopaque properties.

Process: Extrusion and injection molding

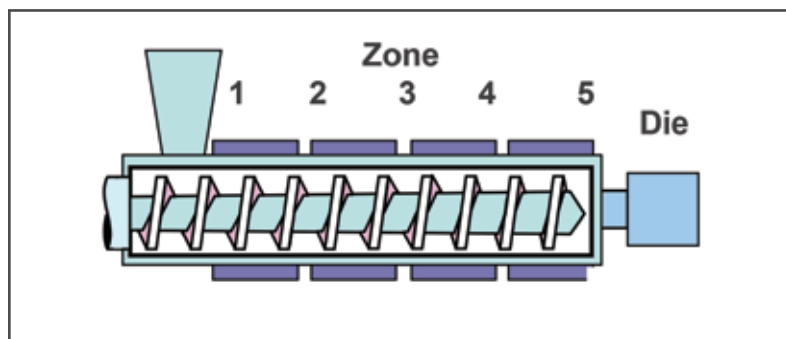
Products & Properties	ASTM Test	PC-3575A-B20	PC-3585A-B20	PC-3595A-B20	PC-3555D-B20	PC-3572D-B20
Durometer (Shore Hardness)	D2240	75A	80A	92A	52D	71D
Specific Gravity	D792	1.35	1.35	1.35	1.35	1.35
Ultimate Tensile (psi)	D412	7200	8700	9400	9400	9200
Ultimate Elongation (%)	D412	530	410	400	375	300
Tensile Modulus (psi)	D412					
at 100% Elongation		300	800	1200	375	3800
at 200% Elongation		625	1500	1200	1975	3800
at 300% Elongation		1450	4100	4900	6400	8800
Flexural Modulus (psi)	D790	2000	2200	6,800	22,000	135,000
Vicat Temperature (°C)	D1525	47	56	53	57	63
Mold Shrinkage (in/in) (1"x.25"x6" bar)	D955	0.010	0.010	0.010	0.008	0.008

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 two 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.

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.

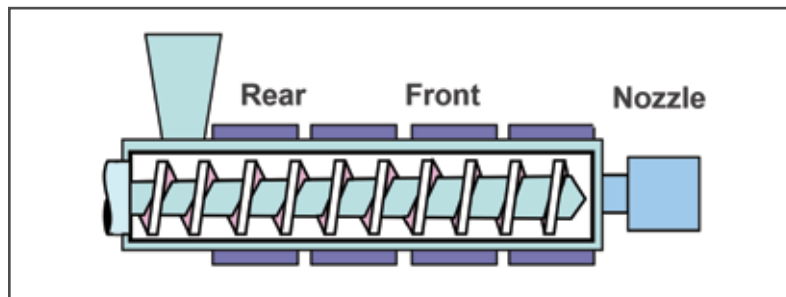
Recommended Starting Extrusion Temperature Profile:



	PC-3575A-B20	PC-3585A-B20	PC-3595A-B20	PC-3555D-B20	PC-3572D-B20
	°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: 100/250/100 mesh

Recommended Starting Injection Molding Temperature Profile:



	PC-3575A-B20	PC-3585A-B20	PC-3595A-B20	PC-3555D-B20	PC-3572D-B20
	°F/°C	°F/°C	°F/°C	°F/°C	°F/°C
Rear	392/200	392/200	392/200	410/210	428/220
Front	410/210	410/210	410/210	428/220	446/230
Nozzle	428/220	428/220	428/220	446/230	464/240
Melt	410/210	410/210	410/210	428/220	446/230
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](#).