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DURATHANE™ ALC-B30

Description

Durathane™ ALC-B30 is medical grade aliphatic polycarbonate-based thermoplastic polyurethane (TPU) loaded with 30% Barium Sulfate as radiopacifier. The radiopacity is between the existing ALC-B20 and ALC-B40 products. ALC-B30 can be color-matched while retaining the traits of clear grade ALC, including superior biocompatibility and mechanical properties, as well as excellent resistance to oxidation, chemical, and hydrolysis. This product can be injection molded and extruded.

Storage

Durathane™ ALC-B30 TPU pellets should be stored in a cool and dry environment in their original containers until used. Storage temperature should not exceed 85°F/30°C. If only a portion of TPU pellets was used, the container with remaining TPU pellets should be tightly closed.

Products and Properties

Durathane™ ALC-B30	ASTM Test	ALC-90A-B30	ALC-93A-B30	ALC-95A-B30
Durometer (Shore hardness)	D2240	90A	92A	94A
Specific Gravity	D792	1.45	1.45	1.45
Flexural Modulus (psi)	D790	3,550	6,000	9,000
Ultimate Tensile (psi)	D412	3,300	4,000	4,200
Tensile Modulus at 100% Elongation (psi)	D412	910	1,200	1,400
Tensile Modulus at 300% Elongation (psi)	D412	1,600	3,000	3,400
Ultimate Elongation (%)	D412	500	380	350
Mold Shrinkage (mm/mm)	D955	0.010-0.011	0.010-0.011	0.009-0.010

Note : These test results are based on small samples of Durathane™ ALC-B30 TPU and do not represent the results from larger test samples. The manufacturing parameters should be adjusted according to users' actual conditions. The mold shrinkage test (D955) was performed on a Type A bar specimen molded by injection process.

Processing Information

Durathane™ ALC-B30 TPU pellets are hygroscopic and are **necessarily dried before processing**. Depending on the climate, the pellets absorb moisture rapidly when exposed to the atmosphere. The moisture might cause severe polymer degradation during processing and form bubbles or streaks in the molded and extruded parts. To ensure the efficient and successful processing, the moisture content in TPU pellets is recommended to be **less than 0.05%**. A dehumidifying dryer is recommended for drying Durathane™ ALC-B30 TPU. For the best drying results, the dew point of the inlet air should not be higher than -40°F /-40°C. The recommended drying conditions are listed below **for a minimum of 5 hours**.

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Processing Information :

Durathane™ ALC-B30	ALC-90A-B30	ALC-93A-B30	ALC-95A-B30
Recommended Drying Temperature (°F)	175	175	175
Recommended Drying Temperature (°C)	80	80	80

Note : Dry for a minimum of 5 hours at -40°F/ -40°C dew point

Recommended Extrusion Temperature Profile :

Durathane™ ALC-B30	ALC-90A-B30 (°F / °C)	ALC-93A-B30 (°F / °C)	ALC-95A-B30 (°F / °C)
Zone 1	365/185	365/185	365/185
Zone 2	375/190	375/190	375/190
Zone 3	375/190	375/190	375/190
Zone 4	385/195	385/195	385/195
Adapter 5	385/195	385/195	385/195
Die	375-390/190-200	375-390/190-200	375-390/190-200

Screen Pack Recommendation : 50/200/100

Recommended Injection Molding Temperature Profile :

Durathane™ ALC-B30	ALC-90A-B30 (°F / °C)	ALC-93A-B30 (°F / °C)	ALC-95A-B30 (°F / °C)
Rear	350/175	350/175	350/175
Front	355/180	355/180	355/180
Nozzle	365/185	365/185	365/185
Melt	400-420/205-215	400-420/205-215	400-420/205-215
Mold	70-95/20-35	70-95/20-35	70-95/20-35

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