Technical Data Sheet

ChronoFlex AL™

| Aliphatic Polycarbonate-based Polyurethanes

Product Description

ChronoFlex AL is a family of medical-grade aliphatic polycarbonate-based thermoplastic polyurethanes designed to exhibit high resistance to in-vivo induced oxidative stress.

With a long history of reliable performance in both long- and short-term devices, this medical grade polymer has the versatility to be used across a broad range of applications ranging from oncology and neurology to cardiovascular disease management.

These ether-free polyurethane elastomers display a low modulus of elasticity, excellent solvent resistance and limited softening in-vivo and are adaptable to most standard manufacturing processes. ChronoFlex AL products are available in hardnesses ranging from 75 Shore A to 75 Shore D. Properties can be tailored to meet specific values based on customer requirements.

General	**Key Features**	• Excellent Chemical Resistance • Low Modulus of Elasticity • Inherent Material Strength	• Animal-Free Origin Certified • Tailored To Meet Mechanical Specifications • Reliable Performance in Long- And Short-Term Implantable Devices
	Forms	• Pellet • Solution	
	Processing Methods	• Extrusion • Injection and Blow molding • Dip coating • Solution casting • Film formation • Solvent coating methods	
	Common Applications	• Cardiology • Surgery • Endoscopic • Urology • Nephrology • Neurology	• Orthopedics • Drug Delivery • Diabetes Management • Gastroenterology • Ear/Nose/Throat

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FDA Master Files. It is the responsibility of the user to establish safety with the FDA for their specific medical device.

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Technical Properties

Mechanical Characteristics*	ChronoFlex AL™				ASTM Standard
	Durometer Range Available	75 Shore A – 75 Shore D			D2240
	Specific Gravity	1.10 – 1.40			D792
	Melt Flow (g/10 min)	2-26 g/10 min I 205° C/ 3.26 kg			D1238
	Example Product	75A/BaSO4 20%	55D	75D	
	Ultimate Tensile Strength (psi)	8000 - 10000	5000 - 10000	9000 - 12000	D638
	Tensile Strength (psi)				
	@ 50% elongation	450 – 650	1500 - 1800	5500 - 7500	
	@ 100% elongation	650 – 850	1800 - 2200	6000 - 8000	
	@ 200% elongation	1000 - 1450	2800 - 4200	-	
	@ 300% elongation	1800 - 2400	4200 - 10000	-	
	Ultimate Elongation (%)	400 - 600	200 - 400	100 - 300	

*Data provided herein is meant to show a general range for the ChronoFlex AL product lines; these properties can be tailored to meet specific values based on customer requirements.

Biocompatibility testing:

Tests: MEM elution, USP Class VI

The ChronoFlex AL product line was pre-assessed for biocompatibility by testing representative grades in the product line. These grades were tested using a MEM Elution test and were considered non-cytotoxic. Additionally, these grades were tested for USP Class VI, and the test articles were determined to meet the requirements of the USP guidelines for Class VI Plastics – 70 ° C. Please reach out for more specific information.

Pre-Processing Recommendations:

ChronoFlex AL processing can be optimized by drying to a moisture content equal to or less than 0.05% by weight prior to melt processing.

Typically, the pellets must be dried for 3-4 hours with a dryer inlet air temperature of 180ºF +/- 20ºF. We recommend a machine-mounted desiccant-type hopper dryer, capable of reaching and maintaining a dew point of -40ºF. If dry times are in excess of 8-10 hours, a hopper dryer temperature of 120-150ºF is usually sufficient to achieve an optimal moisture content.

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