THERMOPLASTIC SILICONE POLYCARBONATE ELASTOMERS

ChronoSil®

AVAILABLE IN HARDNESSES RANGING FROM 75 Shore A to 75 Shore D

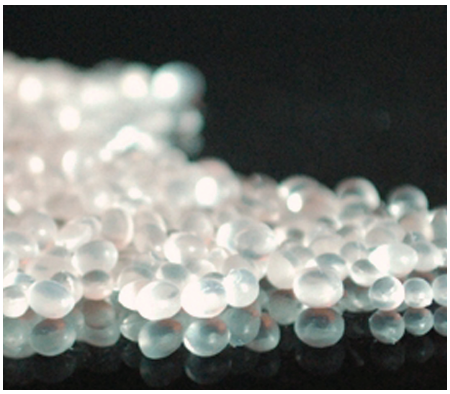
Strong yet Supple: The power of polycarbonate meets the softness of silicone.

Description

ChronoSil is a family of polycarbonate based silicone elastomers. These biocompatible materials maintain the inherent benefits of polycarbonate-based urethanes, including high pressure resistance, tensile-strength and superior chemical resistance combined with silicone's industry recognized advantages such as heightened elongation, superior elasticity and a low coefficient of friction.

Consistent with other polycarbonate-based materials, ChronoSil can be synthesized to provide targeted mechanical properties and is resistant to Environmental Stress Cracking (ESC).

These products are adaptable to most standard manufacturing processes and are available in hardnesses ranging from 75 Shore A to 75 Shore D.



CHRONOSIL IN PELLET FORM

The ASB Advantage

AdvanSource Biomaterials synthesizes and manufactures medical grade materials offering the ability to tailor physical and mechanical characteristics to support and enhance your end product design.

These mechanical characteristic's, critical to the design and development of medical devices, can incorporate a wide range of physical and chemical properties while maintaining core characteristics such as biodurability and biocompatibility. In most materials, specialized characteristics such as the addition of colorant agents or antimicrobial properties (where applicable) can be added to the polymer to provide a homogenous material and limit secondary processing steps.

In addition, radiopaque agents may also be incorporated into the formula to provide additional product enhancements and may contain up to 40%, by weight, of a radiopaque agent thus allowing varied-scale visibility options.

With an expanding range of secondary operations including custom solution development, prototype coating capabilities, and project management services, ASB's expert team of chemists, scientists, engineers and industry professionals assist in every stage of customers' projects, from concept initiation through full-scale manufacture.

An ASB product

BIODURABLE

AVAILABLE IN ANTIMICROBIAL FORM

TAILORED TO MEET MECHANICAL SPECIFICATIONS

RELIABLE PERFORMANCE IN LONG AND SHORT TERM IMPLANTABLE DEVICES

AVAILABLE IN RADIOPAQUE FORM

AVAILABLE IN SOLUTION FORM

HIGH PRESSURE RESISTANCE

ESC RESISTANT

HEIGHTENED ELONGATION

SUPERIOR ELASTICITY

SUPERIOR TENSILE STRENGTH

LOW COEFFICIENT OF FRICTION

INHERENT MATERIAL STRENGTH

USP CLASS VI

BIOCOMPATIBLE

ANIMAL-FREE ORIGIN CERTIFIED

AdvanSource biomaterials

Creating Technology. Enabling Success.

229 Andover Street, Wilmington, MA 01887 | Tel: 978-657-0075 | Fax: 978-657-0074 | www.advbiomaterials.com

TYPICAL MECHANICAL CHARACTERISTIC RANGES

ChronoSil

			ASTM Standard
Durometer Range Available	75 Shore A – 75 Shore D		D2240
Silicone Content Available	5% – 20%		
Water Absorption	0.59 – 0.62%		D570
Melt Flow	2 – 26 g/10 min | 205° C/3.26 kg		D1238
MECHANICAL PROPERTY RANGES (EXAMPLE RANGES SHOWN)*			
Durometer	80A	55D	
% Silicone	5%	5%	
Ultimate Tensile Strength (psi)	3300 – 7000	5000 – 10,000	D638
Tensile (psi)			
@ 50% elongation	350 – 600	2000 – 2500	D638
@ 100% elongation	500 – 800	2500 – 3000	D638
@ 200% elongation	900 – 1250	3500 – 4500	
@ 300% elongation	1500 – 2100	4600 – 5500	D638
Ultimate Elongation (%)	450 – 650	350 – 550	D638

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

BIOCOMPATIBILITY TESTING

	USP CLASS VI TESTED:	ISO TESTED:
MEM Elution		Meets ISO 10993-5 guidelines
AGAR Overlay		Meets ISO 10993-5 guidelines
Systemic Injection Test	Meets Class VI guidelines	
Intracutaneous Injection Test	Meets Class VI guidelines	
Intramuscular Implantation (macro)	Meets Class VI guidelines	
Phthalate Free		Does not contain or come in contact with DEHP
Animal-Free Origin Certified		BSE/TSE free

Pre-Processing Recommendations:

ChronoSil 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 optimal moisture content.

FDA Master Files

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