

# EXTRUSION CAPABILITIES

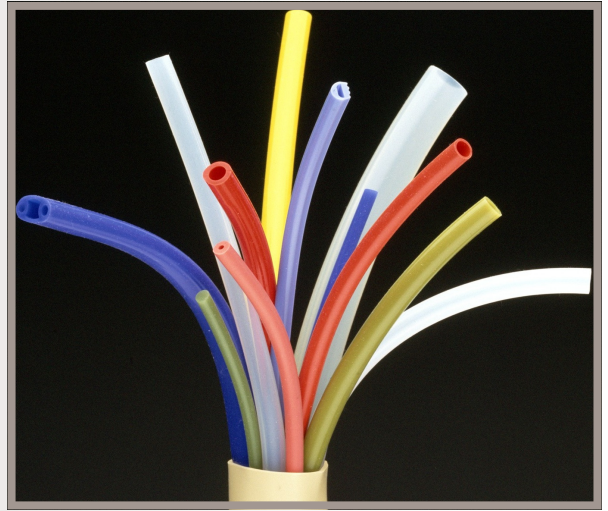
## Services

Custom and standard tubing profiles are available for high tolerance commercial, military, medical and food grade silicone applications.

## General Capabilities

Quality controlled extruding operations accommodate:

- Small to high volume production
- Extruded tubing profiles, solids and tubes
- X-ray opacity and stripes
- Co-extruded configurations
- In-process laser micrometer checks
- Unique process to ensure true non-deformed shapes with no external blemishes like belt marks
- Inline printing
- Over-molded cuffs, Y-sites, holes drilled & custom assembly



Silicones also offer a wide range of advantages to the commercial and military device engineer. Silicones can be formulated to have excellent flame and smoke resistance properties, conductivity and self-lubricating properties. They are also capable of maintaining physical properties under extreme temperature conditions, -80F to 450F.

Silicones exceed all comparable materials in their insulating properties as well as flexibility in electrical applications. Silicones are non-conductive and maintain dielectric strength in temperature extremes far higher than those in which conventional insulating materials can perform.

## Silicone Tubing Mechanical Properties

There are several ASTM standards for measuring mechanical properties of silicone. We base our incoming material qualification on durometer, tear, elongation, and tensile standards. Suitable for continuous operation at temperatures from -80F (-60C) to 450F (230C) and short term exposure up to 570F (300C). No harmful toxic or physiological effects. Chemically stable and suitable for use with many acids and alkalis. Resistant to ozone, UV and corona discharge. Low flammability and low smoke.

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## PRODUCTS LIST

ID/OD:	.008" to 1.47" / .012" to 1.63"
Length:	Standard length 50 feet roll, Special lengths available
Profiles:	Single lumen, multi-lumen or custom
Durometer Shore A:	10 to 90
Color:	Clear and a variety of other choices
X-ray Opacity:	Complete product to marker line or segments

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## Biocompatibilities

Silicones are formulated to comply with FDA Biocompatibility Guidelines for medical products. Our silicone tubing has met the requirements of USP Class VI testing and compliance with ISO-10993-A of biocompatibility. FDA regulation 21 CFR 177.2600 relates to rubber articles intended for repeated food contact. Our 50, 60 and 70 duro silicone material and tubing comply with this regulation. Our silicone tubing is odorless, tasteless, and does not support bacteria growth. Silicones do not stain or corrode other materials.

## Silicone Tubing Material

Tubing is available in a wide variety of grades of material, from USP Class VI grade, US food grade, A-A-59588A CL 3B to commercial silicone rubber. Our specially formulated materials produce an ultra smooth surface, minimizing surface tension and maximizing flow performance. Silicones resist water and many chemicals, including some acids, oxidizing chemicals, ammonia and isopropyl alcohol. Silicone rubber will swell when exposed to non-polar solvents including benzene, and toluene, but will return to its original shape when these solvents evaporate. Concentrated acids, alkalines, and solvents should not be used with silicones.

Silicone offers a wide range of advantages to the medical device engineer. Compatible with human tissue and body fluids, silicone has no additives which can leach out. Silicone material can be formulated and tested for full biocompatibility. Silicones are odorless, tasteless, do not support bacteria growth and are widely regarded in the industry as the superior implant material. They offer excellent thermostability and can be steam, ethylene oxide, or radiation sterilized.

## USP CLASS 6 SILICONE TUBING FOR MEDICAL AND PHARMACEUTICAL APPLICATIONS

(dimensions in inches)

CATALOG	I.D.	WALL	O.D.
501	.030	.018	.065
502	.062	.017	.095
503	.078	.023	.125
504	1/8	1/16	1/4
505	3/16	1/16	5/16
506	3/16	3/32	3/8
507	1/4	1/16	3/8
508	1/4	3/32	7/16
509	1/4	1/8	1/2
510	5/16	1/16	7/16
511	5/16	3/32	1/2
512	3/8	1/16	1/2
513	3/8	3/32	9/16
514	3/8	1/16	5/8
515	1/2	3/32	11/16
516	1/2	1/8	3/4

All tubing is packaged in 50 foot coils.

Additional sizes are available upon request.

### Quality Certifications:

- ISO 13485
- ISO/TS 16949
- ISO 9001
- ISO 14001
- Cage Codes: 5JVB3, 64F07
- ITAR #M17768
- QPL 11891 Military Tank Track
- Qualified Supplier Status for  
QSL-01, 02, 03, 04