

Peristaltic Pump Tubing

Silicone Tubing

- Platinum-Cured Silicone Tubing
- Slightly clarity, smooth surface, low protein binding levels, fewer potential leachable .
- Ideal for pharmaceutical and biotechnology use, suitable temperature range $-51\sim 238\text{ }^{\circ}\text{C}$.

Micro Flow Rate Tubing										
Tubing Size	0.13×0.86	0.5×0.86	0.86×0.86	1.52×0.86	2.06×0.86	2.79×0.86	1×1	2×1	3×1	2.4×0.8
Tubing cross sections (1:1)										
Wall thickness (mm)	0.86						1.0			0.8
Inside diameter (mm)	0.13	0.5	0.86	1.52	2.06	2.79	1.0	2.0	3.0	2.4
Maximum pressure (Mpa)	Continuous						0.1			
	Intermittent						0.1			






Basic Flow Rate Tubing																	
Tubing Size	13°	14°	19°	16°	25°	17°	18°	15°	24°	35°	36°						
Tubing cross sections (1:1)																	
Wall thickness	mm						1.6			2.4							
	inch						1/16			3/32							
Inside diameter	mm						0.8	1.6	2.4	3.1	4.8	6.4	7.9	4.8	6.4	7.9	9.6
	inch						1/32	1/16	3/32	1/8	3/16	1/4	5/16	3/16	1/4	5/16	3/8
Maximum pressure (Mpa)	Continuous			0.17			0.14	0.1	0.07	0.17			0.14				
	Intermittent			0.27			0.24	0.14	0.1	0.27			0.24				

Industrial Tubing									
Tubing Size	26°	73°	82°	86°	90°	88°	92°		
Tubing cross sections (1:1)									
Wall thickness	mm		3.3			6.3		4.8	
	inch		1/8			1/4		3/16	
Inside diameter	mm		6.4	9.6	12.7	9.5	19	12.7	25.4
	inch		1/4	3/8	1/2	3/8	3/4	1/2	1
Maximum pressure (Mpa)	Continuous		0.2			0.25			
	Intermittent		0.27			0.3			






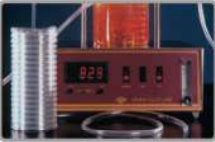

Peristaltic Pump Tubing

SAINT-GOBAIN Tubing: Tygon, PharMed BPT, Norprene etc

	A Tygon3350	B Tygon E-3603	C Norprene Chemical	D PharMed	E Norprene A-60-F
					
Formulation	Tygon3350	Tygon R-3603	Norprene Chemical	PharMed	Norprene A-60-F
Application	Pharmaceutical, cosmetic, medical and auto-analysis application.	General laboratory, food & beverage, biopharmaceutical, analytical instruments.	Excellent for chemical processing and general industrial applications. Food and beverage applications where extractables are a concern.	Cell and tissue culture work and pharmaceutical uses. Also good for light-sensitive samples.	Ideal for the food, dairy and beverage.
Advantages	Ultra-smooth; minimizes bacterial growth. Good for mild to medium concentration bases, salts and alcohols; odorless, tasteless, and non-toxic. Transparent.	Inexpensive tubing for general lab application. Nonaging, nonoxidizing. Clear for easy flow monitoring. Handles virtually all inorganic chemicals. Low gas permeability. Smooth bore; good for viscous fluids. High dielectric constant.	Norprene thermoplastic elastomer outer jacket with chemically inert Tygon® 2075 inner bore for excellent chemical resistance. Plasticizer-free to guard against extractables. Long flex life. Opaque beige.	Great for tissue and cell work-nontoxic and nonhemolytic; long service life minimizes risk of fluid exposure; reduces tubing costs and pump downtime. Opaque to UV and visible light to protect light-sensitive fluids. Heat sealable, bondable, and formable. Extremely low gas permeability.	Heat, ozone, and UV light resistant. Nonaging; nonoxidizing; superior acid and alkali resistance. Opaque beige.
Application Suitability	—————	ACIDS GOOD ALKALIES GOOD ORGANIC SOLVENTS NO PRESSURE GOOD VACUUM GOOD VISCIOUS FLUIDS EXCELLENT STERILE FLUIDS GOOD	—————	ACIDS GOOD ALKALIES GOOD ORGANIC SOLVENTS NO PRESSURE GOOD VACUUM EXCELLENT VISCIOUS FLUIDS GOOD STERILE FLUIDS EXCELLENT	—————
Physical characteristics	—————	Thermoplastic. PVC-based material with plasticizer. Firm (stiff) material. Transparent, clear.	—————	Thermoplastic elastomer. Polypropylene-based material with USP mineral oil. Excellent tensile strength. Firm (stiff) material. Opaque, beige.	—————
Temp. range	-75 to 450° F (-60-232° C)	-58 to 165° F (-50-74° C)	-76 to 165° F (-60-74° C)	-60 to 270° F (-59-135° C)	-60 to 275° F (-51-135° C)
Meets classifications	FDA 21 CFR 177.2600 USP Class VI EP 3.1.9. Exceeds 3A standards Manufactured according to GMP.	FDA 21 CFR 175.300	None.	None.	FDA 21 CFR 177.2600 NSF listed (Standard 51) Manufactured according to GMP.
Cleaning/Sterilization	Ethylene oxide gamma irradiation, or autoclave for 30 min, 15psi (1 bar).	Unaffected by commercial sanitizers (with recommended procedures) Sterilize with ethylene oxide (ETO) or autoclave. To autoclave: Coil loosely in nonlinting cloth or paper, autoclave at 121°C (250°F). 1KG/cm ³ (15psi) for 30 minutes (tubing will appear milky); air dry at max 66°C (150°F) for 2 to 2 ½ hours until clear.	Sterilize with ethylene oxide (ETO), autoclave or gamma irradiation up to 2.5Mrad. Repeated autoclaving will not affect overall life.	Autoclave, ethylene oxide, or gamma irradiation.	Autoclave.



Peristaltic Pump Tubing

	F Norprene A-60-G 	G Tygon F-4040-A 	H Tygon LFL 	I TYGON 2475 	K Viton 																																										
Formulation	Norprene A-60-G	Tygon F-4040-A	Tygon LFL	TYGON 2475	Viton																																										
Application	For applications requiring excellent chemical, heat, ozone, and ultra-violet (UV) light resistance.	Fuels and industrial lubricants-gasoline, kerosene, heating oils, cutting compounds, and glycol-based coolants. Resists most hydrocarbons.	General laboratory use, provides longer life with peristaltic tubing pumps.	Sensitive fluid transfer applications requiring high purity.	Acid and solvent transfer, high-temperature.																																										
Advantages	Best choice for vacuum/pressure applications. Offers longest life with good flow consistency. Heat and ambient ozone resistant. Good resistance to acids/alkalies. Black color hides dirt and dust. Heat sealable, nonaging, and nonoxidizing. High dielectric constant.	Resists embrittlement and swelling, ozone-and UV-resistant, with low-extractability. Translucent yellow.	Longest life of all Tygon® peristaltic tubing (1000hrs). Nonaging, nonoxidizing. Clear for easy flow monitoring. Broad chemical resistance; low gas permeability. Smooth bore. Good for viscous fluids. High dielectric constant.	Plasticizer free, smooth inner surface (inhibits particulate buildup and bacterial growth), safely disposed of through incineration and nontoxic. Transparent.	The most chemical resistant tubing. Registant to corrosives, solvents, and oils at elevated temperatures. Low gas permeability.																																										
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Physical characteristics	Thermoplastic elastomer. Polypropylene-based material with USP mineral oil. Excellent tensile strength. Firm (stiff) material. Opaque, black. Manufactured according to GMP.	_____	Thermoplastic. PVC-based material with plasticizer. Firm (stiff) material. Transparent, clear.	_____	Thermal set rubber. Viton B (67% fluorine) Firm (stiff) material Opaque, black. Manufactured according to GMP.																																										
Temp. range	-60 to 270° F (-59-135° C)	-35 to 165° F (-37-74° C)	-58 to 165° F (-50-74° C)	-94 to 125° F (-70-52° C)	-25 to 400° F (-32-205° C)																																										
Meets classifications	None.	Meets NSF-51 and 3A sanitary standards.	USP Class VI, FDA 21 CFR 175.300	FDA 21 CFR 177.1520, USP 23 Class VI, Manufactured according to GMP.	None.																																										
Cleaning/ Sterilization	Sterilize by autoclave only.	Not recommended.	Sterilize by ETO/autoclave. Coil loosely in nonlinting cloth or paper; autoclave at 250°F(121°C), 15 psi (1kg/cm²), 30 minutes (tubing will appear milky); air dry at max 150°F (66°C) for 2 to 2 ½ hrs until clear.	Ethylene oxide or gamma irradiation.	Sterilization is not recommended.																																										

