ELECTROLAB

PERISTALTIC PUMP

TUBE SELECTION GUIDE

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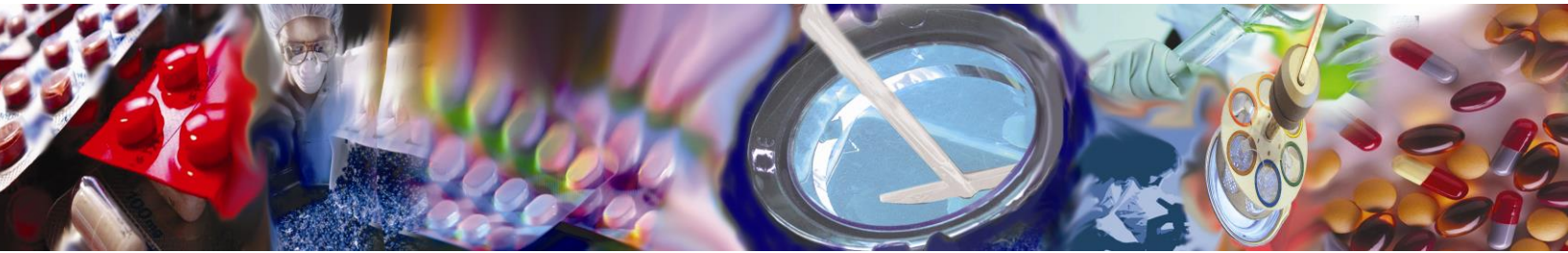


HOW IMPORTANT IS THE TUBING?

The tubing is as important as the pump because it is the restitution of the tube that draws in the fluid.

The tube's restitution creates suction lift, its strength resists pressure, its flex resistance determines pumping life, its bore decides the flow rate, and its wall thickness controls pumping efficiency.

Ordinary tubing is not designed for peristaltic pumping. ELECTROLAB Peristaltic pumps are designed around certain good quality tubing. The results of using any other tubing are unpredictable, and may jeopardise your warranty.

We always recommend Bioprene or Marprene tubing where they are chemically compatible. They will give the longest life at lowest overall cost, but you can also choose silicone, Neoprene, Butyl, Viton or Tygon Tubing.

TUBING SELECTION GUIDE

Choosing the right tubing material

BIOPRENE

Choose Bioprene for the longest tube life to meet USP and NFS Class VI requirements. Bioprene also complies with FDA 21 CFR 177.260 and meets USDA Standards for food handling. Beige. Autoclavable.

MARPRENE

Thermoplastic which has superseded Neoprene, Butyl and Silicone in many applications. Greatly enhanced tube life. Marprene meets USDA standards for food handling and complies with FDA 21 CFR 177.260. Recommended for all applications where chemically suitable. Beige. Autoclavable.

SILICONE

The standards laboratory tubing most used for bore sizes upto 9.6 mm (3/8"). Silicone tubing meets USP and NFS Class VI Standards. Food and medical quality. Listed by the UK Water fittings Byelaws Scheme. Translucent. Autoclavable.

NEOPRENE

The standard industrial tubing and generally best for abrasive slurries and for pumping against sustained pressure. Most used for bore sizes over 12.7 mm (1/2"). Black. Food quality.

BUTYL

Sometimes useful for its chemical resistance where Neoprene is unsuitable. Black. Not food quality.

TYGON

Polyvinylchloride thermoplastic. Good pressure performance. Glass clear. Food quality.

VITON

Viton has greatly extended life (five to twenty-five times longer than previously available) Viton is expensive, but sometimes the only chemically suitable material. Black. Not food quality.

CHOOSING THE RIGHT TUBE

The best way to select a tube is to first decide which materials are chemically suitable, and then choose the one which best meets the physical demands of the application.

Normally, use the longest tube life material, which will usually be Bioprene or Marprene if they are chemically and physically suitable. Otherwise, silicon tubing is most often chosen for sizes upto 9.6mm (3/8”), Neoprene tubing for bore sizes of 12.7mm (1/2”) or more.

FOR MAXIMUM TUBE LIFE:

Use a large bore tube at low speed

FOR MAXIMUM FLOW RATE:

Use the largest tube at maximum speed.

FOR MAXIMUM ACCURACY:

Use a small bore tube at maximum speed.

Suction lift depends on the tube restituting fully before the advance of the next roller. If it does not, the flow rate will be reduced. For maximum suction lift or pressure, use the smallest practicable bore size of tubing and run the pump at the slowest possible speed.

CHECKING YOUR CHOICE WITH AN IMMERSION TEST:

Always make an immersion test before choosing a tube material for critical applications. Immerse a short length of the tubing in a closed container of the fluid for 48 hours, and then examine for signs of attack, swelling, embrittlement or other deterioration.

CHEMICAL COMPATIBILITY:

A	MA	SI	NE	BU	TY	VI
ACETALDEHYDE	S	S	N	S	N	N
ACETAMIDE	S	S	S	S		S
ACETIC ACID (COLD)	S	S	S	S	S	N
ACETIC ACID (HOT)	S		N	N		N
ACETIC ANHYDRIDE	N	N	S	S	N	N
ACETONE	N	S	S1	S	N	N
ACETOPHENONE			N	S		N
ACETYL BROMIDE			N			S
ACETYL CHLORIDE			N			S
ACETYLENE	S	S	S	S	N	S
ACETYLENE TETRACHLORIDE					S	
ACRYLONITRILE	N	N	N	N		N
AEROFLOAT AF 135		N	S	S	N	
AEROFLOAT Z 2 135		N	N	S	N	
“ALAMASK”		S2				S
ALDEHYDES	S		N	S		N
ALIPHATIC HYDROCARBON SOLVENTS			S		S	
ALUM		S	S	S		S
ALUMINIUM CHLORIDE	S	S	S	S	S	S
ALUMINIUM NITRATE			S	S	S	
ALUMINIUM SALTS	S	S	S	S	S	S
ALUMINIUM SULPHATES		S	S			S
AMMONIA GAS (COLD)	S	S	S	S	S	N
AMMONIA GAS (HOT)	S	S	S	S		N
AMMONIUM ACETATE					S	
AMMONIUM CARBONATE			S	S	S	
AMMONIUM CHLORIDE			S	S	S	S
AMMONIUM HYDROXIDE	S	S	S	S	S	S
AMMONIUM NITRATE		S	S	S	S	
AMMONIUM PHOSPHATE		S	S	S		
AMMONIUM SALTS	S	S	S	S	S	S
AMMONIUM SULPHATES		S	S	S	S	S
AMYL ACETATE	N	N	N	S	N	N
AMYL ALCOHOL	S	N	S	S	S	S
AMYL BORATE		N	S	N		
AMYL CHLORIDE		N			S	S
AMYL CHLORONAPHTHALENE		N	N	N		S
AMYL NAPHTHALENE		N	N	N		S

MA - MARPRENE / BIOPRENE **BU - BUTYL** **TY - TYGON**
NE - NEOPRENE **SI - SILICONE** **VI - VITON**

BLANK CELL - DATA UNAVAILABLE

S - SUITABLE
N - NOT SUITABLE
1 - SHORT PERIODS ONLY.
2 - SWELLS
3 - UP TO 20^0C ONLY.
4 - UP TO 30^0C ONLY.
5 - UP TO 100^0C ONLY.
6 - UP TO MEDIUM CONCENTRATION

A	**MA**	**SI**	**NE**	**BU**	**TY**	**VI**
ANILINE (COLD)	S	S	N	S	N	S
ANILINE (HOT)	S		N		N	N
ANILINE DYES			S	S		S
ANILINE HYDROCHLORIDE		N	N		N	S
ANILINE INKS		S	S			N
ANIMAL OILS	S	S	S3	N	N	S
AQUA REGIA	N		N	N	N	
“ARALDITE”			S			S
“ARKLONE P“						S
“ARKLONE W”						S
AROMATIC HYDROCARBONS		S	N		N	S
ARSENIC SALTS	S				S	S
ASPHALT		N	N	N		S
B						
“BARDOL B”		N	N			
BARIUM CHLORIDE	S	S	S	S	S	S
BARIUM HYDROXIDE	S	S	S	S	S	S
BARIUM NITRATE			S		S	
BARIUM SALTS	S	S	S	S	S	S
BATTERY ACID TO 1.300SG			N		S	
BEER	S	S	S	S	S	S
BEER WORT	S	S	S			
BEET SUGAR LIQUORS	S	S	S	S		S
BENZALDEHYDE	S	N	N	S	N	N
BENZENE	N	N	N	N	N	S
BENZENESULPHONIC AC			S		S	S
BENZOIC ACID	N	S			S	S
BENZOPHENONE						S
BENZOYL CHLORIDE			N			S
BENZYL ALCOHOL	S		S	S	S	S
BITUMEN			S	S		
BLACK SULPHATE LIQUO	N		S	S		
BLEACHING LIQUORS	S	S	S	N	S	S
BLOOD	S	S			S	
BORAX	S	S	S	S		S
BORIC ACID	S	S	S	S	S	S

B	MA	SI	NE	BU	TY	VI
BRAKE FLUID	S					
BRIGHTENERS FOR ELECTROPLATING	S	N	N	N	S	S
BROMINE	N	N	N	N	N	S
BROMOBENZENE	N	N	N	N		S
BUTANE	N	N	S	N	N	S
“BUTYL DIOXITOL”				S		
BUTYL ACETATE	N	N	N	S	N	N
BUTYL ACETYL RICINOLEATE			S	S		S
BUTYL ALCOHOL	S	S	S	S		S
BUTRALDEHYDE	S	N	N	S		N
BUTYRIC ACID	S		N		S	
C						
CALCIUM BISULPHATE		S	S	N		S
CALCIUM CHLORIDE		S	S	S	S	S
CALCIUM DISULPHATE			S	N	N	S
CALCIUM FLUOPHOSPHATE			S		S	
CALCIUM HYDROXIDE	S	S	S	S	S	S
CALCIUM HYPOCHLORITE	S	S	N	S	S	S
CALCIUM NITRATE		S	S	S	S	S
CALCIUM SALTS	S	S	S	S	S	S
CALICHE LIQUORS			S	S		
CANE SUGAR LIQUORS	S	S	S	S		S
CARBITOL		S	S	S		S
CARBOLIC ACID		N	N	S		S
CARBON BISULPHIDE			N	N	N	S
CARBON DIOXIDE	S	S	S	S	S	S
CARBON DISULPHIDE	N		N	N	N	S
CARBON MONOXIDE	S	S	S	S		S
CARBON TETRACHLORIDE	N	N	N	N	N	S
CARBONIC ACID	S	S	S	S		S
CASTOR OIL	S	S	S	S		S
CAUSTIC SODA UP TO 50%	S6	S	S	S	S	S
CELLOSOLVES	S			S		N
CHLORINATED LIME				S		S
CHLORINATED SOLVENTS	N	N	N	N	N	S
CHLORINE (DRY)	N	N	N	S	S	S
CHLORINE (WET)	N	N	N	N	S	S
CHLORACETIC ACID	N		S	S		N
CHLOROBENZENE	N	N	N	N	N	S
CHLOROBROMOMETHANE	N	N	N	S		S
CHLOROFORM	N	N	N	N	N	S
CHLORONAPTHALENE		N	N	N		S

C	MA	SI	NE	BU	TY	VI
CHLOROSULPHONIC ACID	N	N	N	N	N	N
CHOROTULUENE	N	N	N	N		S
CHROME PLATING SOLUTIONS	S	S	N	N	S	S
CHROMIC ACID	S	N	N	N	S	S
CHROMIUM SALTS	S				S	
CITRIC ACID	S	S	S	S	S	S
COAL TAR NAPTHA			N	N		
COCONUT OIL	S	S	S	S		S
COD LIVER OIL	S	S	S	S		S
COFFEE	S				S	
COPPER SALTS	S	S	S	S	S	S
CORILINE			S			
CORN OIL	S	S	S	S		S
CREOSOTE		N	N	N		S
CREOSOTE OIL		N	N	N		S
CRESOLS	N	N	N	N	N	S
CYCLOHEXANE	N	N	N	N		S
CYCLOHEXANOL			S	N		S
CYCLOHEXANONE	N		N	S		S
CYMENE			N	N		S
D						
DETERGENT SOLUTIONS	S	S	S	S		S
“DEXITRONE”		S				
DEXTROSE	S	S				
DIACETONE ALCOHOL		S	S	S		
DIATOMACEOUS SLURRY	S	S	S	S	S	S
DIBENZYL ETHER	S		S	S		
DIBUTYL CARBITOL		N	N	N	N	S
DIBUTYL PHTHALATE	N	S	N	S		S
DICHLOROBENZENE	N	N	N	N		S
DICYCLOHEXYLAMINE	N			S		
DIESEL FUEL						S
DIETHYL ETHER	N	N	N	N	N	N
DIETHYLAMINE		S	N	S		N
DIETHYLENE GLYCOL	S	S	S	S		S
DIISOPROPYL ETHER	N	N	N	N	N	N
DIISOPROPYL KETONE	N		N	S		N
DIMETHYL ANILINE			N	N		N
DIMETHYL FORMAMIDE	N	S	N	S	N	N
DIOCTYL PHTHALATE	N	N	N	S		S
DIOXANE		S		S		N
DIOXOLANE				N		
DIPENTENE				N		S

D	MA	SI	NE	BU	TY	VI
DIPHENYL				N		S
DIPHENYL ETHER	N	N		N		S
“DOWTHERM“FLUIDS		S	N	N		S
E	**MA**	**SI**	**NE**	**BU**	**TY**	**VI**
ESSENTIAL OILS	S				S	
ESTERS	S	S	N		N	N
ETHANOLAMINE		S	S	S	S	N
ETHERS	N	N	N	N	N	
ETHYL ACETATE	N	N	S		N	N
ETHYL ACETOACETATE	N	S	N	S		N
ETHYL ALCOHOL	S	S	S	S	N	S
ETHYL BENZENE			N	N		S
ETHYL BROMIDE					N	S
ETHYL CELLULOSE		N	S	S		N
ETHYL CHLORIDE	N	N	S	S	N	S
ETHYL MERCAPTAN				N		S
ETHYL OXALATE			N	S		S
ETHYL PENTACHLOROBENZENE	N		N	N		S
ETHYL SILICATE			S	S		S
ETHYLAMINE					N	N
ETHYLENE		S				S
ETHYLENE CHLOROHYDRIN	N	N	S	S	N	S
ETHYLENE DIAMINE		S	S	S		N
ETHYLENE DICHLORIDE	N	N	N	N	N	S
ETHYLENE GLYCOL	S	S	S	S	S	S
ETHYLENE OXIDE	S	N	N	N		N
ETHYLENE TRICHLORIDE		N	N	N		S
F						
FATTY ACIDS		N	N	N	S	S
FERRIC CHLORIODE	S	S	S	S	S	S
FERRIC SALTS	S	S	S	S	S	S
FERRIC SULPHATE	S	S	S	S	S	S
FERROUS CHLORIDE	S				S	S
FERROUS SALTS	S				S	S
FERROUS SULPHATE	S				S	S
FLUOBORATES	S				S	
FLUOBORIC ACID	S		S	S	S	
FLUOROBENZENEN		N	N	N		S
FLUOSILICIC ACID	S		S		S	
FORMALDEHYDE	S	S	S	S	S	S
FORMAMIDE	S					
FORMIC ACID	S	S	S	S	S	N
FREON 11	N	N	N	N		S

F	MA	SI	NE	BU	TY	VI
FREON 12	N	N	S	S		S
FREON 13	N		S	S		S
FREON 21	N	N	N	N		N
FREON 22	N	N	S	S		N
FREON 31	N		S	S		N
FREON 32	N		S	S		N
FREON 112	N		N	N		S
FREON 113	N	N	S	N		
FREON 114	N	N	S	N		S
FREON 115	N		S	S		S
FREON 218	N		S	S		S
FREON C 316	N		S	S		
FREON C 318	N		S	S		S
FREON TF 113	N		S	N		S
FUEL OILS	S	N	S	N		S
FUMARIC ACID		S	S	N		S
FURAN			N	N		
FURFURAL	S		S	S		N
G	**MA**	**SI**	**NE**	**BU**	**TY**	**VI**
GALLIC ACID			S	S		S
GASOLINE	N	N	S	N	N	S
GELATINE	S	S	S	S	S	S
GLUCOSE	S	S	S	S	S	S
GLYCERINE	S	S	S	S	S	S
GLYCOLS	S	S	S	S		S
GOLD PLATING SOLUTION	S		S			S
GREEN SULPHATE LIQUOR		S	S	S		S
GUM ARABIC					S	
H						
HALOWAX OIL		N	N	N		S
HEXALDEHYDE		S	S	S		
HEXAMETHANE DIAMINE				S		
HEXANE	N	N	S	N		S
HEXYL ACETATE						N
HYDRAULIC OIL	S	N	S	N		S
HYDRAZINE		N	S	S		N
HYDRIOTIC ACID					S	S
HYDROBROMIC ACID	S	N	S	S	S	S
HYDROCHLORIC ACID (COLD)	S	S	S	S	S	S
HYDROCHLORIC ACID (HOT)	S	N	N	N		S
HYDROCYANIC ACID	S	S	S	S	S	S
HYDROFLUORIC ACID (COLD)	S	N	S	S	N	S

H	**MA**	**SI**	**NE**	**BU**	**TY**	**VI**
HYDROFLUORIC ACID (HOT)	N	N	N	N	N	S
HYDROFLUOROSILICIC ACID		N	S	S		S
HYDROGEN GAS	S	N	S	S		S
HYDROGEN PEROXIDE	N	S		N	N	S
HYDROGEN SULPHIDE (DRY)	S	N	S	S	S	N
HYDROGEN SULPHIDE (WET)	S	N	S	S	S	N
HYDROQUINONE	N					N
HYPOCHLOROUS ACID	S			S	S	S
I	**MA**	**SI**	**NE**	**BU**	**TY**	**VI**
INKS (PRINTING)				S		
INSULIN						
IODINE	S					S
ISOBUTYL ALCOHOL	S	S	S	S		S
ISOOCTANE	N	N	S	N		S
ISOPHORONE				S		N
ISOPROPHL ACETATE			N	S		N
ISOPROPYL ALCOHOL	S	S	S	S		S
ISOPROPYL CHLORIDE	S			N		S
ISOPROPYL NITRATE		N				
K						
KAOLIN	S				S	
KEROSENE	N	N	N	N	N	S
KETONES		N			N	N
“KYMEME”		S				
L						
LACQUER		N	N	N		N
LACQUER SOLVENTS	N	N	N	N	N	N
LACTIC ACID (COLD)	S	S	S	S	S	S
LACTIC ACID (HOT)	N	S	S			
LARD	S	S	N	N	S	S
LAURYL ALCOHOL					S	
LEAD ACETATE	S	N	S	S		N
LEAD NITRATE	S	S	S	S		
LINSEED OIL	S	S	S	S	S	S
LITHIUM GREASE	S					
LITHIUM HYDROXIDE 5%		N				S
LUBRICATING OILS	S	N	S	N		S
LYE SOLUTION (KOH & NaOH)	S	S	S	S	S	S
M						
‘MAGNAFLOC”			S			
MAGNESIUM AMMONIUM SULPHATE			S		S	
MAGNESIUM CHLORIDE	S	S	S	S	S	S
MAGNESIUM HYDROXIDE	S		S	S	S	S

M	MA	SI	NE	BU	TY	VI
MAGNESIUM NITRATE			S		S	
MAGNESIUM OXIDE			S		S	
MAGNESIUM SALTS	S	S	S	S	S	S
MAGNESIUM SULPHATE	S	S	S	S	S	S
MALIC ACID	S		S	N	S	S
MALEIC ANHYDRIDE				N		S
MANGANESE SALTS	S	S			S	S
MASCARA					S	
MELAMINE		S				
MERCURIC CHLORIDE	S		S	S	S	S
MERCURIC SULPHATE	S		S	S	S	
MERCURY	S	S	S	S	S	S
MESITYL OXIDE		N	N	S		N
METHANE GAS		N	S	N		S
METHYL ALCOHOL	S	S	S	S	S	N
METHYL BROMIDE		S	N		N	S
METHYL CHLORIDE	N	N	N	N	N	S
METHYL CHLOROBROMATE						
METHYL DIPHENYLDIISOCYANATE		N	N	S	N	
METHYL ETHYL KETONE	N	N	N	S	N	N
METHYL FORMATE		S	S	S		
METHYL ISOBUTYL KETONE	N	N	N	N		N
METHYL METHACRYLATE		S	S	N		N
METHYL SALICYLATE		N	S			
METHYLATED SPIRITS			S		S	
METHYLENE CHLORIDE	N	N	N	N	N	N
MILK	S	S	S	S	S	S
MINERAL OILS	S	S	S	N		S
MOLASSES	S		S		S	
MONOCHLOROBENZENE		N	N	N		S
MUSTARD		S	S		S	
N						
NAPTHA	N	N	N	N	N	S
NAPTHALENE		N	N	N	N	S
NATURAL GAS	S	S	S	N	S	S
NEOPRENE/NAPTHA MIXTURE						
NICKEL ACETATE			S	S	S	N
NICKEL AMMONIUM SULPHATE			S		S	
NICKEL CHLORIDE	S	S	S	S	S	S
NICKEL SALTS	S	S	S	S	S	S
NITRIC ACID	S4	N	N	N	N	S
NITROBENZENE	N	N	N	N	N	S

N	MA	SI	NE	BU	TY	VI
NITROETHANE	N	N	N	N		N
NITROGEN	S	S	S	S		S
NITROGEN OXIDES	S	N	N	N		N
NITROPROPANE				S		N
NITROETHANE				S		N
NITROUS ACID	N				S	
O						
OILS (ANIMAL)	S	S	S3	S	N	S
OILS (LUBRICATING)	S	N	S	N		S
OILS (MINERAL)	S	N	S	S	N	S
OILS (VEGETABLE)	S	S	S	S	N	S
OLEIC ACID	N	N	N	S	N	S
OLEUM SPIRITS			N	N	N	S
OXALIC ACID	S	S	S	S	S	S
OXYDIPHENOL PHOSPHATE				S		
OXYGEN (COLD)	S	S	S	S	S	S
OZONE	S	S	S	S		S
P						
PALMITIC ACID	S		S	S		S
PARAFFIN	N	N	N	N	N	S
“PARACLENE”			S			
PENICILLIN		S	S			
PERCHLORIC ACID	S	N	S	S	N	S
PERCHLOROETHYLENE	N	S	N	N	N	S
PETROL	N	N	S	N	N	S
PETROLEUM WHITE SPIRIT			N	N		
PHENOL	N	N	N	S	N	S
PHENYL ETHYL ETHER			N	N		
PHENYL HYDRAZINE			N	N		S
PHENYLBENZENE			N	N		S
PHORONE				S		
PHOSPHONATE			S	S		
PHOSPHORIC ACID	S	N	S	S	S	S
PHTHALIC ACID	S	S			S	S
PICKLING SOLUTION	S			N		S
PICRIC ACID	S	N	S	S		S
PINE OIL			N	N		S
PINENE		N	S	N		S
PIPERIDINE			N	N		N
PLATING SOLUTIONS (CHROME)	S	N	N	N		S
PLATING SOLUTIONS (OTHERS)	S	N	S			S
POLYETHYLENE GLYCOL	S		S			

P	MA	SI	NE	BU	TY	VI
POTASSIUM BICARBONATE			S		S	
POTASSIUM BISULPHATE			S		S	
POTASSIUM CARBONATE		S			S	S
POTASSIUM CHLORIDE		S			S	S
POTASSIUM CYANIDE	S	S	S	S	S	S
POTASSIUM DICHROMATE	S	S	S	S		S
POTASSIUM HYDROXIDE	S	N	S	S	S	S
POTASSIUM IODIDE		S			S	S
POTASSIUM NITRATE		S	S		S	S
POTASSIUM NITRITE			S		S	
POTASSIUM PHOSPHATE			S		S	
POTASSIUM SALTS	S	S	S	S	S	S
PRODUCER GAS		S	S	N		S
PROPANE		N	S	N		S
PROPIONIC ACID			N	S	N	
PROPYL ALCOHOL	S	S	S	S		S
“PYRENE BONDERITE”			S			
PYRIDINE	N	N	N	S	N	N
PYROLIGNEOUS ACID			S	S		
PYRROLE		S	N	N		
R						
RUBBER LATEX		S	S		S	
S						
SALICYLIC ACID	S			S		S
SEA WATER	S	S	S	S	S	S
SEWAGE	S	S	S	S	S	S
“SHELLSOL”				S		
SILICON TETRACHLORIDE						S
SILICONE OIL	S	N	S	S		S
SILVER NITRATE	S	S	S	S	S	S
“SKELLYSOVE B, C, E”				N		
SKYDROL 500-B4	S5					
SOAP SOLUTIONS	S	S	S	S	S	S
SODA ASH	S	S	S	S		S
SODIUM ALUMINATE	S		S			
SODIUM BICARBONATE	S	S	S	S	S	S
SODIUM BISULPHATE	S	S	S	S	S	S
SODIUM BISULPHITE	S	S	S	S		S
SODIUM BORATE	S	S	S	S		S
SODIUM CARBONATE	S		S			S
SODIUM CHLORATE	S					S
SODIUM CHLORIDE	S	S	S	S	S	S
SODIUM CYANIDE	S	S	S	S	S	S

S	MA	SI	NE	BU	TY	VI
SODIUM DICHROMATE	S	S	S			S
SODIUM HYDROSULPHITE					S	S
SODIUM HYDROXIDE	S6	S	S	S	S	S
SODIUM HYPOCHLORITE	S	S	S	S	S	S
SODIUM METAPHOSPHATE	S		N	S		S
SODIUM NITRATE	S	N	S	S	S	
SODIUM NITRITE	S	S	S	S	S	
SODIUM PERBORATE	S	S	S	S		S
SODIUM PEROXIDE		N	S	S		S
SODIUM PHOSPHATES	S	N	S	S		S
SODIUM POLYACRYLATE			S			
SODIUM SILICATE	S	S	S	S	S	S
SODIUM SULPHATE	S	S	S	S	N	S
SODIUM SULPHIDE	S	S	S	S	S	S
SODIUM SULPHITE	S	S				S
SODIUM THIOSULPHATE	S	S	S	S	S	S
SOYABEAN OIL	S	S	N	S	S	N
STANNIC CHLORIDE	S	S	S	S		S
STANNOUS CHLORIDE	S	S	S	S		S
STEAM	S	N	N	N		N
STEARIC ACID	S	S	S	S	S	
STODDARDS SOLVENT	N	N	N	N		S
STYRENE	N	N	N	N		S
SUCROSE SOLUTIONS	S		S	S		
SULPHUR	N	S	S	S		S
SULPHUR CHLORIDE	N	N	N	N	N	S
SULPHUR DIOXIDE		S	N	S	S	S
SULPHUR HEXAFLUORIDE		S	S	S		S
SULPHUR DIOXIDE (DRY)	S	S	N	N	S	S
SULPHUR TRIOXIDE (DRY)	S	S	N	S	S	S
SULPHURIC ACID (10% COLD)	S	N	S	S	S	S
SULPHURIC ACID (10% HOT)	S	N	S	S	S	S
SULPHURIC ACID (10%-75% COLD)	S	N	N	S	N	S
SULPHURIC ACID (10%-75% HOT)	S	N	N	S	N	S
SULPHURIC ACID (75%-95% COLD)	N	N	N	N	N	S
SULPHURIC ACID (75%-95% HOT)	N	N	N	N	N	S
SULPHUROUS ACID	S	N	S	S	S	S

T	MA	SI	NE	BU	TY	VI
TANNIC ACID	S	S	S	S	S	S
TANNIN			S			
TANNING EXTRACTS	S					
TAR		S	N	N		S
TARTARIC ACID		S	S	S	S	S
TERPINEOL			N	N		S
TERTIARY BUTYL CATECHOL			S	S		S
TERTIARY BUTYL MERCAPTAN			N	N		S
TETRACHLOROETHANE	N					S
TETRAETHYL LEAD			N	N	N	S
TETRAHYDROFURAN	N		S	S		N
TETRALIN			N	N		S
THIONYL CHLORIDE		N	N	N	N	S
TIN CHLORIDES	S	S	S	S		S
TITANIUM DIOXIDE	S				S	
TOLUENE	N	N	N4	N	N	S
TOLUENE DIISOCYANATE			N	S		S
“TRISOTAN”			S			
TRIACETIN			S	S		N
TRIBUTOXY ETHYL PHOSPHATE			N	S		S
TRIBUTYL PHOSPHATE			N	S		N
TRICHLORETHANE	N	N	N	N		S
TRICHLOROACETIC ACID			S	S		N
TRICHLOROETHYLENE	N	N	N	N	N	S
TRICRESYL PHOSPHATE		N	N	S		S
TRIETHANOLAMINE			S	S		N
TRINITROTOLUENE			S	N		S
TUNG OIL	S		S	N		S
TURPENTINE	S	N	N	N	S	S
U						
UREA	S	S			S	S
URIC ACID	S				S	
V						
VEGETABLE OILS		S	S	S	N	S
VINEGAR	S	S	S	S	S	S
W						
WATER (FRESH)	S	S	S	S	S	S
WATER (SEA)	S	S	S	S	S	S
WATER (STEAM)	S	N	N	N		N
WHISKY	S	S	S	S	S	S
WHITE SPIRIT (PETROLEUM)	N		S	N		

W	MA	SI	NE	BU	TY	VI
WINE		S	S	S	S	S
WOOD ALCOHOL					N	
WORT		S	S			
X						
XYLENE	N	N	N	N	N	S
XYLOL	N	N	N	N	N	S
Y						
YEAST		S	S	S	S	
Z						
ZEOLITES			S	S	S	S
ZINC SALTS	S		S	S	S	S

MA - MARPRENE / BIOPRENE **BU - BUTYL** **TY - TYGON**
NE - NEOPRENE **SI - SILICONE** **VI - VITON**

BLANK CELL - DATA UNAVAILABLE

S - SUITABLE	N - NOT SUITABLE
1 - SHORT PERIODS ONLY.	4 - UP TO 30^0C ONLY.
2 - SWELLS	5 - UP TO 100^0C ONLY.
3 - UP TO 20^0C ONLY.	6 - UP TO MEDIUM CONCENTRATION

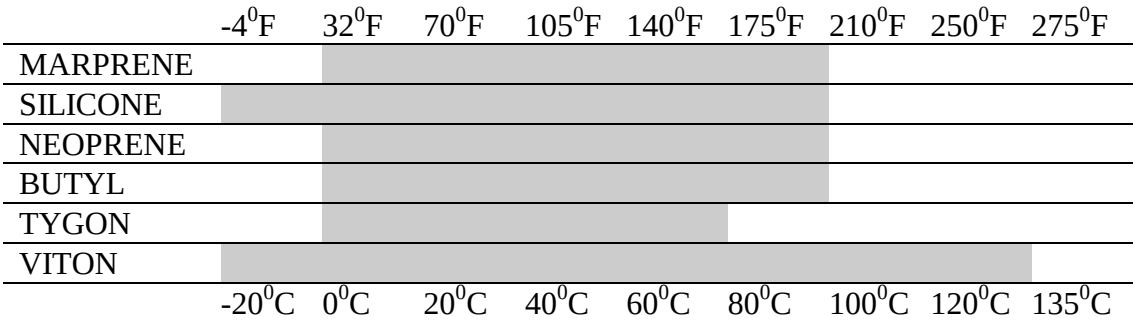
PHYSICAL COMPATIBILITY

VISCOSITY:

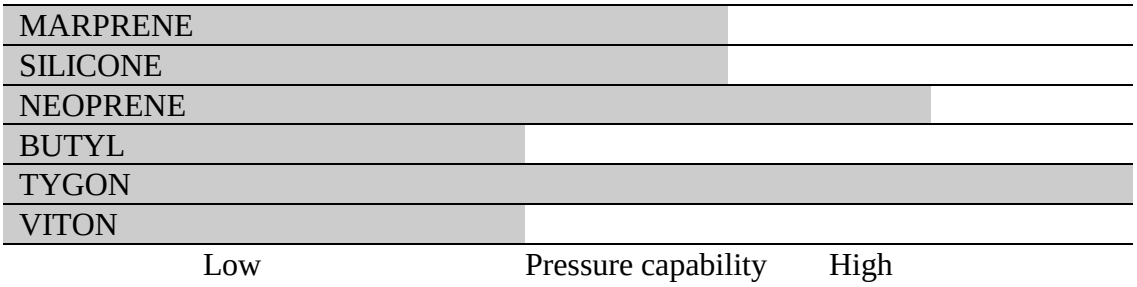
Increased viscosity will result in decreased flow rate. Choose a tubing with a large a wall thickness as possible, which could for instance, mean using a 400 series pump which use greater wall thickness tubing, rather than a 200 series pump. Following this guidance will allow fluids with viscosities up to 2500 centipoise to be satisfactorily handled. Contact ELECTROLAB for advice on specific applications.

Contd.....

TEMPERATURE:
The chart shows the temperature range of each tubing type when suction and delivery pressure are negligible Operating temperatures of Bioprene, Marprene and Silicone are limited to 80^0C, but all three may be autoclaved up to 135^0C.



PRESSURE:
Choose the smallest bore size of tubing which will give the required flow rate.



SUCTION:
As with pressure, choose the smallest bore of tube which will produce the required flow rate.
Equally important, however, is the restitutional power of the tubing material:

PERMEABILITY:

MARPRENE	
NEOPRENE	
BUTYL	
SILICONE	
TYGON	
VITON	

High Permeability Low

FOOD AND BEVERAGE APPLICATIONS:

Marprene, Bioprene, Tygon, Neoprene and silicone tubing are suitable for use in food and beverage applications.

All tubing takes a short time to settle down and provide a stable flow rate.
For precise flow rate requirements, it is recommended that the flow rat re-calibrated after a one hour running-in period