Polyethylene & Liquiflex—POE™

Linear Low Density Polyethylene – LLDPE

LLDPE's greatest advantage over low density polyethylene is its superior environmental stress crack resistance (ESCR). Environmental stresses that can shorten the service life of tubing include: chemical exposure, aging, connection to barb-type fittings, or high vibration connections with compression fittings. All colors comply with FDA regulation 21 CFR 177.1520(c) for food contact applications. Freelin-Wade has chosen to standardize on linear low density polyethylene and no longer offers low density polyethylene.

Specifications

Temperature Range
LLDPE & Liquiflex:
-40°F to +150°F

Vacuum Rating
All: To 28" Hg.

Diameter Tolerance
LLDPE: ±.004"
Liquiflex: ±.005"

Hardness
LLDPE: 50 Shore D
Liquiflex: 92A

Tube Markings
LLDPE & Liquiflex:
FW Specifications

Working Pressure
LLDPE & Liquiflex:
3:1 Safety Factor

Resin Compliance
LLDPE: FDA, NSF51
Liquiflex: FDA

Polypropylene has been discontinued as a standard item. Call Customer Service for special orders.

Features

- Greater tensile strength
- High burst pressure
- Superior stress and crack resistance
- Tasteless and odorless
- Puncture resistance
- Impermeable to gasses and moisture
- Superior dielectric properties
- Lightweight

Polyethylene Colors

Any of our polyethylene tubing products are available in the colors shown below. If not shown as a standard item, please allow three weeks to fulfill your order. Due to LLDPE manufacturing restrictions, these color variations may require a 5,000 foot minimum.

01 04 05 06 07 08 09 10 12

Polyethylene (Linear Low Density: LLDPE)

Part Number & Color Code	Packaging Unit Size	OD	ID	Wall	Standard Colors	Working Pressure 75°F/25°C	Working Pressure 150°F/65°C	lbs./ 100'	Bend Radius	Fitting
1J-109- ___	100' Bag									
1L-109- ___	250' Box									
1C-109- ___	500' Reel	1/8"	.062"	.031"	01 04 05 06 07 08 09 10	305 PSI	120 PSI	.40	1/2"	PI, C
1B-109- ___	1000' Reel									
1A-109- ___	2500' Reel									
1J-189- ___	100' Bag									
1L-189- ___	250' Box									
1C-189- ___	500' Reel	5/32"	.106"	.025"	01 05 06 07 08 10	175 PSI	70 PSI	.46	1"	PI, C
1B-189- ___	1000' Reel									
1A-189- ___	2500' Reel									
1J-048- ___	100' Bag									
1B-048- ___	500' Reel	1/4"	.170"	.040"	01 04 05 06 07 08 09 10 12	200 PSI	80 PSI	1.2	1-1/4"	PI, C
1A-048- ___	1000' Reel									
1J-077- ___	100' Bag	5/16"	.187"	.062"	01 05 06 07 08 10	230 PSI	90 PSI	2.5	1-1/2"	PI, C
1A-077- ___	500' Reel									
1J-074- ___	100' Bag	3/8"	.250"	.062"	01 04 05 06 07 08 09 10	190 PSI	75 PSI	2.76	2"	PI, C
1A-074- ___	500' Reel									
1J-076- ___	100' Bag									
1A-076- ___	250' Reel	1/2"	.375"	.062"	01 05 06 07 08 09 10	135 PSI	55 PSI	3.87	2-1/2"	PI, C
1AA-076-___	500' Reel									
1A-086- ___	100' Reel	5/8"	.500"	.062"	01 10	100 PSI	40 PSI	5	3"	PI, C
1AA-086-	300' Reel									

Polyethylene (Linear Low Density: LLDPE)

Metric Sizes

Part Number & Color Code	Packaging Unit Size	OD mm	ID mm	Wall mm	Standard Colors	Working Pressure 75°F/25°C	Working Pressure 150°F/65°C	lbs./ 100'	Bend Radius	Fitting
1J-189- ___	100' Bag									
1L-189- ___	250' Box									
1C-189- ___	500' Reel	4	2.7	.65	01 05 06 07 08 10	175 PSI	70 PSI	.46	25.2 mm	PI, C
1B-189- ___	1000' Reel									
1A-189- ___	2500' Reel									
1J-071- ___	100' Bag									
1B-071- ___	500' Reel	6	4	1	01 07 10	175 PSI	70 PSI	1.1	31.8 mm	PI, C
1A-071- ___	1000' Reel									
1J-072- ___	100' Bag	8	6	1	01 05 07 10	140 PSI	55 PSI	1.5	38 mm	PI, C
1A-072- ___	500' Reel									
1J-073- ___	100' Bag	10	8	1	01 07 10	115 PSI	45 PSI	2.1	51 mm	PI, C
1A-073- ___	500' Reel									
1J-075- ___	100' Bag									
1A-075- ___	250' Reel	12	9	1.5	01 07 10	135 PSI	55 PSI	3.44	63 mm	PI, C
1AA-075- ___	500' Reel									

Variations Available: Colors • Cutting • Printing • Packaging • Sizes

Liquiflex–POE™

- Greater flexibility
- UV Resistant
- Makes an excellent coil
- Can be bonded

Freelin-Wade has developed a new polyolefin tube that is more flexible than the polyethylene that you've seen before. It has all of the chemical resistant properties of LLDPE and is an excellent choice for conveying liquids. Note that it has low pressure ratings, particularly in warm environments.

Liquiflex–POE™

Part Number & Color Code	Packaging Unit Size	OD	ID	Wall	Standard Colors	Working Pressure 75°F/25°C	Working Pressure 150°F/65°C	lbs./ 100'	Bend Radius	Fitting
1J-961- ___	100' Bag									
1B-961- ___	500' Reel	1/4"	1/8"	.062"	01	125 PSI	75 PSI	1.52	.75"	B, PI, C
1A-961- ___	1000' Reel									
1J-962- ___	100' Bag									
1C-962- ___	500' Reel	1/4"	.170"	.040"	01 05	80 PSI	20 PSI	1.08	1.375"	B, PI, C
1A-962- ___	1000' Reel									
1J-963- ___	100' Bag	3/8"	.245"	.062"	07 10	75 PSI	35 PSI	2.56	1.5"	B, PI, C
1A-963- ___	500' Reel									
1J-964- ___	50' Bag	1/2"	3/8"	.062"	01 05	60 PSI	25 PSI	3.52	2.75"	B, PI, C
1A-964- ___	250' Reel									

Coiling • Colors • Cutting • Bonding • Printing • Packaging • Sizes

Resource Guide—Chemical Resistance Chart

This information was provided to Freelin-Wade by our suppliers and other sources. It is to be used only as a general reference guide to aid in the selection of products in which chemical and material compatibility issues are a factor. This guide is not intended as a complete nor conclusive database. Freelin-Wade does not guarantee these ratings since the resistance of a material can be greatly affected by the temperature, consistency, and presence of other chemicals. Ultimately, the consumer must determine the chemical compatibility of an item based on the conditions in which the product is being used.

Rating Scale

1= Little or no impact
2= Minor effect
3= Moderate effect
4= Severe effect

	PUR	PE	PVC	Nylon	Kynar
Acetic Acid, Glacial	4	2	4	-	1
Acetic Acid, 30%	4	1	4	2	1
Acetone	4	2	4	1	4
Acetylene	1	4	1	1	1
Alkazene	4	-	-	-	-
Aluminum Chloride (aq)	3	2	1	-	1
Aluminum Nitrate (aq)	3	-	2	-	1
Ammonia Anhydrous	4	2	1	-	4
Ammonia Gas (cold)	3	-	3	1	4
Ammonia Gas (hot)	4	-	-	1	4
Ammonium Chloride (aq) 40%	2	1	1	-	1
Ammonium Sulfate (aq)	1	1	1	1	1
Amyl Alcohol	4	2	1	-	1
Amyl Naphthalene	4	-	-	-	-
Animal Fats	1	-	-	-	-
Aqua Regia	4	2	3	-	-
Arsenic Acid	3	2	1	-	1
Asphalt	2	1	1	-	1
ASTM Fuel A	2	-	-	-	-
ASTM Fuel B	3	-	-	-	-
ASTM Fuel C	3	1	4	-	-
Barium Chloride (aq)	1	2	1	1	1
Beer	2	2	1	1	1
Beet Sugar Liquors	4	1	1	-	1
Benzene	3	4	3	1	1
Benzine	2	-	-	-	-
Blast Furnace Gas	4	-	-	-	-
Bleach Solutions	4	1	1	-	1
Borax	1	1	1	-	1
Boric Acid	1	1	1	-	1
Brake Fluid	4	-	-	-	1
Brine	2	-	3	-	1
Bromine Water	4	-	3	4	1
Bunker Oil	2	-	-	-	-
Butane	1	3	3	1	1
Butter	1	-	-	-	-
Butyl Alcohol (Butanol)	3	1	3	1	1
Butylene	4	1	1	-	1
Calcium Chloride (aq)	1	1	3	1	1
Calcium Hydroxide (aq)	2	1	2	-	1
Calcium Nitrate (aq)	1	-	1	1	1
Calcium Sulfide (aq)	1	-	-	-	-
Cane Sugar Liquors	4	-	1	-	1
Carbolic Acid	3	4	3	-	-
Carbon Dioxide	1	2	1	-	1
Carbonic Acid	4	2	1	-	1
Carbon Monoxide	1	2	1	-	1
Carbon Tetrachloride	4	4	4	3	1
Castor Oil	1	1	1	-	1
Chlorine (dry)	4	3	4	4	1
Chlorine (wet)	4	3	-	4	1
Chloroform	4	4	4	3	1
Chlorox	4	-	-	-	-
Chromic Acid 50%	4	1	4	4	1
Citric Acid	1	1	2	1	1
Coal Tar (Creosote)	3	-	-	-	-
Coconut Oil	2	1	1	-	1
Cod Liver Oil	1	1	1	-	-
Coke Oven Gas	4	-	-	-	-
Copper Chloride (aq)	1	2	1	-	1
Copper Cyanide (aq)	1	2	1	-	1
Corn Oil	1	1	2	-	1
Cotton Seed Oil	1	1	2	-	1
Creosol (Methyl Phenol)	4	4	4	4	1
Cychlohexane	1	4	4	1	1
Denatured Alcohol	4	-	-	-	-
Detergent Solution	3	1	1	-	-
Diesel Oil	2	3	1	-	-
Dioxane	4	3	-	-	4
Dowtherm Oil	3	-	-	-	-
Dry Cleaning Fluids	4	-	-	-	-
Ethane	1	-	1	-	-
Ethyl Acrylate	4	-	-	-	1
Ethyl Alcohol (Ethanol)	4	2	3	3	1
Ethyl Benzine	4	-	-	-	-
Ethyl Cellulose	2	-	-	-	-
Ethyl Chloride	4	4	4	-	1
Ethyl Ether	3	4	4	-	1
Ethylene Chloride	4	4	4	-	-
Ethylene Glycol[5] (Anti-Freeze)	2	1	1	1	1
Ethylene Oxide	4	3	3	1	1
Ethylene Trichloride	4	4	-	-	-
Ferric Chloride (aq)	1	2	1	-	1
Ferric Nitrate (aq)	1	2	1	-	1
Ferric Sulfate (aq)	2	1	1	-	1
Fluroine (Liquid)	4	3	4	4	1
Formaldehyde (RT)	4	2	1	1	1
Formic Acid	4	2	1	4	1
Freon 11	4	3	1	-	-
Freon 12	1	1	1	1	-
Freon 22	4	-	1	1	-
Fuel Oil (Bunker 'C')	2	3	1	-	1
Gasoline (100 Octane, High Test)	3	4	3	1	1
Glue	1	1	3	-	1
Glycerin (Glycerol)	1	1	1	1	1
Glycols	4	-	-	1	-
Green Sulfate Liquor	1	-	-	-	-
Hexane	2	4[1]	2[2]	-	1
Hydraulic Oil	1	1-3	1	-	-
Hydrochloric Acid (cold) 37%	4	2	2	4	1
Hydrochloric Acid (hot) 37%	4	-	-	4	1
Hydrofluroic Acid (Conc.) (cold)	4	2	-	-	1
Hydrofluroic Acid (Conc.) (hot)	4	-	-	-	1
Hydrogen Gas	1	1	1	1	1
Isobutyl Alcohol	3	1	-	-	1
Isooctane	2	3	1	-	1
Isopropyl Acetate	4	3	4	-	-
Isopropyl Alcohol (Isopropanol)	3	1	-	1	1
Isopropyl Ether	2	1	2	-	1
Kerosene	1	4	2	1	1

	PUR	PE	PVC	Nylon	Kynar
Lacquers	4	1	4	-	-
Lacquer Solvents	4	1	3	-	-
Lard	1	1	1	-	1
Lavender Oil	4	-	-	-	-
Lead Acetate (aq)	4	1	1	-	1
Linseed Oil	2	3	1	1	1
Liquified Petroleum Gas	1	-	-	1	-
Lubricating Oils	1-2[3]	4	2	1	1
Lye	4	1-4[4]	1-2	-	-
Magnesium Chloride (aq)	1	2	1	1	1
Magnesium Hydroxide (aq)	4	2	1	-	1
Mercury	1	1	1	1	1
Methane	3	-	2	1	1
Methyl Acetate	4	2	4	1	1
Methyl Acrylate	4	-	-	-	1
Methyl Alcohol (Methanol)	4	1	1	1	1
Methyl Butyl Ketone	4	-	1	-	-
Methyl Chloride	4	4	4	1	1
Methylene Chloride	4	4	4	-	1
Methyl Ethyl Ketone	4	2	4	1	4
Methyl Isobutyl Ketone	4	3	4	1	4
Milk	4	1	1	1	1
Mineral Oil	1	3	1	1	1
Motor Oil 20W, 10W40	2	3	2	1	1
Naphtha (Lighter Fluid)	2	4	1	1	1
Naphthalene (Moth Repellent)	2	2	4	1	1
Natural Gas	2	-	1	-	1
Neatsfoot Oil	1	-	-	-	-
Nitric Acid 70%	4	2	-	4	1
Nitric Acid (Dilute) 10%	3	2	1	4	1
Nitroethane	4	-	-	-	1
N-Octane	4	1	-	-	1
Oleic Acid	2	1	3	1	1
Oleum Spirits	3	4	4	-	4
Olive Oil	1	1	-	-	1
Oxygen (cold)	1	-	-	1	1
Oxygen (200-400F)	4	-	-	-	-
Paint Thinner, Duco	4	-	-	-	-
Perchloric Acid	4	1	3	-	1
Perchloroethylene	4	4	3	3	1
Petroleum - Below 250F	2	3	-	-	1
Petroleum - Above 250F	4	-	-	4	-
Phenol (Carbolic Acid)	3	2	3-4	4	1
Phenyl Ethyl Ether	4	-	-	-	-
Phosphoric Acid - 45%	4	1	2	2	1
Pickling Solution	4	-	-	-	-
Picric Acid	2	1	4	3	1
Potassium Acetate (aq)	4	-	-	-	1
Potassium Chloride (aq)	1	2	1	-	1
Potassium Cyanide (aq)	1	2	1	-	1
Potassium Hydroxide (aq)	4	1	1	3	4
Producer Gas	1	1	1	-	-
Propane	1	4	1	1	1
Propyl Alcohol (Propanol)	4	1	1	-	1
Propylene	4	-	2	-	-
Propylene Glycol (Anti-Freeze)	3	1	3	2	1
Propylene Oxide	4	2	-	-	4
Pydraul, 10E, 29 ELT	4	-	-	-	-
Pydraul 30E, 50E, 65E	4	-	-	-	-
Pydraul, 115E	4	-	-	-	-
Pydraul 230E, 312C, 540C	4	-	-	-	-
Rapeseed Oil	2	4	-	-	-
RJ-1 (MIL-F-23338 B)	1	-	-	-	-
RP-1 (MIL-F-25576 C)	1	-	-	-	-
Salt Water	2	1	1	1	1
Sewage	1	-	-	-	1
Silicate Esters	1	-	-	-	-
Silicone Oils	1	1	1	-	1
Silver Nitrate	1	1	1	-	1
Skydrol 500	4	-	-	-	-
Skydrol 700	4	-	-	-	-
Soap Solutions	3	4	1	1	-
Sodium Chloride (aq)	1	1	1	1	-
Sodium Hydroxide (aq)	4	1	1	2	4
Sodium Peroxide (aq)	4	1	2	-	1
Sodium Phosphate (aq)	1	-	-	-	1
Sodium Sulfate (aq)	1	1	1	-	-
Soy Bean Oil	2	1	1	-	1
Stoddard Solvent	1	3	3	-	-
Styrene (Monomer)	4	-	4	1	1
Sucrose Solution	4	2	-	-	-
Sulfuric Acid (Dilute Battery Acid)	3	1	1	-	1
Sulfuric Acid (Conc)	4	2	4	-	1
Sulfuric Acid (20% Oleum)	4	-	4	-	4
Sulfurous Acid	4	2	1	-	-
Tannic Acid	4	1	1	-	1
Tetrochlorethylene	4	2	4	-	-
Toluene (Toluol)	4	3	4	1	1
Transformer Oil	2	-	2	-	-
Transmission Fluid Type A	2	-	-	-	-
Trichloroethane	4	4	3	3	1
Trichloroethylene	4	4	4	3	1
Turbine Oil	1	3	1	1	-
Turpentine	4	4	4	1	1
Varnish	3	3	4	-	1
Vinegar	2	1	1	1	1
Vinyl Chloride	4	4	4	-	1
Water	1	1	1	1	1
Whiskey, Wines	2	1	1	1	1
White Oil	1	-	-	-	-
Wood Oil	3	-	-	-	-
Xylene	4	4	4	1	1
Zinc Acetate (aq)	4	-	-	-	1
Zinc Chloride (aq)	2	1	1	1	1

1 Petroleum Base **2** Synthetic Base =1, Petroleum Base = 3
3 SAE 10, 20, 30, 40, 50 = 1, Petroeum = 2
4 Calcium Hydroxide & Potassium (Hydroxide=1, Sodium Hydroxide=4) **5** See Propylene Glycol **6** See Ethylene Glycol