Surethane® NSF 51® Polyurethane (Shore A 98)

ATP

ATP Surethane® NSF 51® polyurethane (PUR) Shore A 98 tubing is made from the highest quality raw materials available. It is ether-based to provide excellent hydrolysis, oil and cold resistance. Surethane® NSF 51® is strong and flexible and offers superior kink resistance compared to other tubing. It is 5 to 10 times more wear resistant and lighter in weight than any rubber hose.

ATP Surethane® NSF 51® tubing has an outside diameter made to extremely tight tolerances. It is ideal for use with Technifit™ push-to-connect fittings, as well as barb-type and compression fittings for simple installation.

Package Lengths

A = 100'
B = 250'
C = 500'
D = 1000'
E = 25 Meters
F = 100 Meters

Part Numbering System

PU 18 A BK

- PU — Polyurethane
- 18 — Tubing O.D.
- A — Package Length
- BK — Tubing color
- Insert color designation into part number when ordering

Stock Color Chart: ● = Stock, x = Non Stock

PU	BK	C	CB	CG	CR	G	GY	LB	LG	NB	OR	R	W	Y
1/8	●	●	●	x	x	●	●	●	x	●	●	●	●	●
4mm/5/32	●	●	●	x	x	●	●	●	x	●	●	●	●	●
3/16	●	●	●	x	x	●	x	●	x	●	●	●	●	●
1/4	●	●	●	x	x	●	●	●	x	●	●	●	●	●
1/4 - 1/8	x	x	x	x	x	x	x	x	x	●	x	x	x	x
8mm/5/16	●	●	●	x	x	●	●	●	x	●	●	●	●	●
3/8	●	●	●	x	x	●	●	●	x	●	●	●	●	●
1/2	●	●	●	x	x	●	●	●	x	●	●	●	●	●
9/16	●	●	●	x	x	x	x	x	x	x	x	x	x	x
5/8	●	●	●	x	x	x	x	x	x	x	x	x	x	x
3/4	●	●	●	x	x	●	x	x	x	●	x	●	●	●
6mm	●	●	●	x	x	●	●	●	x	●	x	●	●	●
10mm	●	●	●	x	x	●	x	●	x	●	●	●	●	●
12mm	●	●	●	x	x	●	x	●	x	●	x	●	●	●
16mm	●	●	●	x	x	●	x	●	x	●	x	●	●	●

BK = Black, C = Clear, CB = Clear Blue, CG = Clear Green, CR = Clear Red,
G = Green, GY = Gray, LB = Light Blue, LG = Light Green, NB = Navy Blue
OR = Orange, R = Red, W = White, Y = Yellow

Custom sizes, colors, lengths are available with minimum quantity. See page 3 for details.

Features

Strong
Lightweight
Flexible
Abrasion Resistant
Heat & Cold Resistant
Chemical Resistant
Kink Resistant
NSF 51® Certified
Meets NSF 61® Requirements

Specifications

Temperature Range:
-40˚F To +160˚F
*color green, clear green, yellow, clear yellow Temperature Range: -40˚F To +150˚F

Hardness: Shore A 98

Vacuum Rating:
To 28" Hg

Tolerances:
1/8" - 1/2" O.D. +/- .005
9/16" - 3/4" O.D. +/- .006

RoHS Compliant

Applications

Pneumatic Tools
Pneumatic Piping
Vacuum
Laboratories
Robotics
Motion Control
Instrumentation
Agriculture
Lube Lines
Painting Systems
Food & Beverage

Fractional Sizes

Part Number	O.D. (IN)	I.D. (IN)	wall thickness (IN)	bend radius (IN)	W.P. @70° F (PSI)	W.P. @150° F (PSI)	3:1 burst pressure	package length	package weight (lbs)
PU18A_	.125	.062	.031	.200	240	100	720	100'	.50
PU18B_	.125	.062	.031	.200	240	100	720	250'	1.25
PU18C_	.125	.062	.031	.200	240	100	720	500'	2.50
PU18D_	.125	.062	.031	.200	240	100	720	1000'	5.00
PU04M/532A_	4mm,5/32	.093	.031	.250	200	85	600	100'	.70
PU04M/532B_	4mm,5/32	.093	.031	.250	200	85	600	250'	1.75
PU04M/532C_	4mm,5/32	.093	.031	.250	200	85	600	500'	3.50
PU04M/532D_	4mm,5/32	.093	.031	.250	200	85	600	1000'	7.00
PU04M/532E_	4mm,5/32	.093	.031	.250	200	85	600	25M	.57
PU04M/532F_	4mm,5/32	.093	.031	.250	200	85	600	100M	2.30
PU316A_	.187	.125	.031	.339	150	90	450	100'	1.01
PU316B_	.187	.125	.031	.339	150	90	450	250'	2.53
PU316C_	.187	.125	.031	.339	150	90	450	500'	5.05
PU316D_	.187	.125	.031	.339	150	90	450	1000'	10.10
PU14A_	.250	.156	.047	.476	180	70	540	100'	1.50
PU14B_	.250	.156	.047	.476	180	70	540	250'	3.75
PU14C_	.250	.156	.047	.476	180	70	540	500'	7.50
PU14D_	.250	.156	.047	.476	180	70	540	1000'	15.00
PU14A-18_	.250	.125	.063	.500	270	105	810	100'	1.83
PU14B-18_	.250	.125	.063	.500	270	105	810	250'	4.58
PU14C-18_	.250	.125	.063	.500	270	105	810	500'	9.15
PU14D-18_	.250	.125	.063	.500	270	105	810	1000'	18.30
PU08M/516A_	8mm,5/16	.187	.063	.594	175	75	525	100'	2.60
PU08M/516B_	8mm,5/16	.187	.063	.594	175	75	525	250'	6.50
PU08M/516C_	8mm,5/16	.187	.063	.594	175	75	525	500'	13.00
PU08M/516D_	8mm,5/16	.187	.063	.594	175	75	525	1000'	26.00
PU08M/516E_	8mm,5/16	.187	.063	.594	175	75	525	25M	2.13
PU08M/516F_	8mm,5/16	.187	063	.594	175	75	525	100M	8.53
PU38A_	.375	.250	.063	1.000	150	70	450	100'	3.40
PU38B_	.375	.250	.063	1.000	150	70	450	250'	8.50
PU38C_	.375	.250	.063	1.000	150	70	450	500'	17.00
PU38D_	.375	.250	.063	1.000	150	70	450	1000'	34.00
PU12A_	.500	.328	.086	1.102	150	70	450	100'	5.60
PU12B_	.500	.328	.086	1.102	150	70	450	250'	14.90
PU12C_	.500	.328	.086	1.102	150	70	450	500'	28.05
PU916A_	.562	.375	.093	1.142	140	60	420	100'	7.50
PU916B_	.562	.375	.093	1.142	140	60	420	250'	18.75
PU58A_	.625	.406	.109	1.375	140	70	450	100'	9.50
PU58B_	.625	.406	.109	1.375	140	70	450	250'	23.75
PU34A_	.750	.500	.125	1.500	140	70	420	100'	14.90
PU34B_	.750	.500	.125	1.500	140	70	420	250'	37.25

_Insert color designation into part number when ordering.

Surethane® NSF 51® Polyurethane metric sizes on page 6

Metric Sizes

Part Number	O.D. (mm)	I.D. (mm)	wall thickness (mm)	bend radius (mm)	W.P. @70° F (PSI)	W.P. @150° F (PSI)	3:1 burst pressure	package length	package weight (lbs)
PU04M/532A_	4.0	2.4	.78	6.35	200	85	600	100’	.70
PU04M/532B_	4.0	2.4	.78	6.35	200	85	600	250’	1.75
PU04M/532C_	4.0	2.4	.78	6.35	200	85	600	500’	3.50
PU04M/532D_	4.0	2.4	.78	6.35	200	85	600	1000’	7.00
PU04M/532E_	4.0	2.4	.78	6.35	200	85	600	25M	.57
PU04M/532F_	4.0	2.4	.78	6.35	200	85	600	100M	2.30
PU06MA_	6.0	4.0	1.000	12	180	65	540	100’	1.30
PU06MB_	6.0	4.0	1.000	12	180	65	540	250’	3.24
PU06MC_	6.0	4.0	1.000	12	180	65	540	500’	6.48
PU06MD_	6.0	4.0	1.000	12	180	65	540	1000’	13.00
PU06ME_	6.0	4.0	1.000	12	180	65	540	25M	1.07
PU06MF_	6.0	4.0	1.000	12	180	65	540	100M	4.28
PU08M/516A_	8.0	5.0	1.60	15	175	75	525	100’	2.60
PU08M/516B_	8.0	5.0	1.60	15	175	75	525	250’	6.50
PU08M/516C_	8.0	5.0	1.60	15	175	75	525	500’	13.00
PU08M/516D_	8.0	5.0	1.60	15	175	75	525	1000’	26.00
PU08M/516E_	8.0	5.0	1.60	15	175	75	525	25M	2.13
PU08M/516F_	8.0	5.0	1.60	15	175	75	525	100M	8.53
PU10MA_	10.0	6.5	1.750	25	150	70	450	100’	3.90
PU10MB_	10.0	6.5	1.750	25	150	70	450	250’	9.75
PU10MC_	10.0	6.5	1.750	25	150	70	450	500’	19.50
PU10ME_	10.0	6.5	1.750	25	150	70	450	25M	3.25
PU10MF_	10.0	6.5	1.750	25	150	70	450	100M	12.76
PU12MA_	12.0	8.0	2.000	28	150	60	450	100’	5.30
PU12MB_	12.0	8.0	2.000	28	150	60	450	250’	13.25
PU12MC_	12.0	8.0	2.000	28	150	60	450	500’	26.50
PU12ME_	12.0	8.0	2.000	28	150	60	450	25M	4.39
PU12MF_	12.0	8.0	2.000	28	150	60	450	100M	17.34
PU16MA_	16.0	11.0	2.500	30	150	70	450	100’	9.50
PU16MB_	16.0	11.0	2.500	30	150	70	450	250’	23.75
PU16ME_	16.0	11.0	2.500	30	150	70	450	25M	7.79
PU16MF_	16.0	11.0	2.500	30	150	70	450	100M	31.16

_Insert color designation into part number when ordering.

Custom sizes, colors, lengths are available with minimum quantity. See page 3 for details.

Decimal & Metric Equivalents

64ths	32nds	16ths	8ths	Decimal	MM
5/64				0.07812	1.864
	3/32			0.09375	2.381
7/64				0.10938	2.778
			1/8	0.12500	3.175
13/64				0.20312	5.195
	7/32			0.21875	5.556
15/64				0.23438	5.953
			1/4	0.25000	6.350
21/64				0.32812	8.334
	11/32			0.34375	8.731
23/64				0.35938	9.128
			3/8	0.37500	9.525
25/64				0.39062	9.922
	13/32			0.40625	10.309
27/64				0.42186	10.716
		7/16		0.43750	11.113
29/64				0.45312	11.509
	15/32			0.46875	11.908
31/64				0.48438	12.303
			1/2	0.50000	12.700

64ths	32nds	16ths	8ths	Decimal	MM
33/64				0.51582	13.097
	17/32			0.53125	13.494
35/64				0.54688	13.891
		9/16		0.56250	14.288
37/64				0.57812	14.684
	19/32			0.59375	15.081
39/64				0.60938	15.478
			5/8	0.62500	15.875
45/64				0.70312	17.859
	23/32			0.71875	18.256
47/64				0.73438	18.653
			3/4	0.75000	19.050
53/64				0.82812	21.034
	27/32			0.84375	21.431
55/64				0.85938	21.823
			7/8	0.87500	22.225
61/64				0.95312	24.209
	31/32			0.96875	24.605
63/64				0.98438	25.003
			1	1.00000	25.400

Measurement Conversion Table

To Convert	*Into*	*Multiply By*	*To Convert*	*Into*	*Multiply By*
Centimeters	Inches	.394	Inches	Centimeters	2.54
	Feet	.0382		Feet	.0833
	Meters	.01	Meters	Centimeters	100
	Millimeter	10		Feet	3.281
Feet	Centimeter	30.48		Inches	39.37
	Inches	12.00		Kilometers	.001
	Meters	.3048		Miles	.0006214
	Miles	.0001894		Millimeters	1000
	Yard	.6777		Yards	1.093
Grams	Ounces	.035			
	Pounds	.002			
	Kilogram	.001			

Temperature Conversions

To convert Fahrenheit degrees into Celsius, subtract 32, multiply by 5, and divide by 9.

To convert Celsius into Fahrenheit, multiply by 9, divide by 5, and add 32.

Chemical Resistance

	Polyurethane	Nylon12	Polyethylene	PVC	PTFE	Weld Tubing Cover
Acids						
Acetic, 3n	B	E	A	A	A	A
Boric, 4%	B	A	A	A	A	A
Chromic, 3n	D	E	A	A	A	—
Citronic, 3n	B	—	A	A	A	—
Formic, 3n	D	A	A	A	A	A
HC1, 3n	A	E	A	A	A	—
Lactic, 3n	C	B	A	A	A	A
Nitric, 3n	D	E	A	A	A	B
Phosphoric, 3n	D	D	A	A	A	A
Sulfuric, <20%	A	B	A	A	A	A
Sulfuric, >20%	B	C	B	A	A	A
Alkalines						
Ammonia, 3n	A	A	—	A	A	A
Potassium Hydroxide, 3n	A	—	A	A	A	A
Sodium Hydroxide, <20%	A	A	A	A	A	A
Sodium Hydroxide, >20%	C	A	—	A	A	A
Aqueous Solution						
Aluminum Chloride, 10%	B	—	A	A	A	A
Ammonium Chloride, 10%	B	A	A	A	A	A
Bleaching Agent, 40%	A	E	—	—	A	A
Bleaching Agent, 100%	B	E	—	—	A	—
Calcium Chloride, 40%	B	A	A	—	A	—
Caustic Soda, 10%	A	A	—	—	A	—
Ferric Chloride, 10%	B	—	A	A	A	A
Hydrogen Peroxide, 3%	A	A	A	A	A	A
Magnesium Chloride, 30%	B	—	A	A	A	—
Potassium Chloride, 40%	B	A	A	—	A	—
Potassium Dichromate, 10%	B	C	A	—	A	—
Potassium Permanganate, 5%	D	D	A	—	A	—
Sea Water	A	A	A	A	A	—
Sodium Bisulfate, 10%	B	A	A	—	A	—
Sodium Chloride, 10%	B	B	A	—	A	—
Sodium Hypochlorite, PH 13	A	B	A	—	A	A
Fuels						
ASTM Fuel A	A	—	—	B	A	—
ASTM Fuel B	C	—	—	C	A	—
ASTM Fuel C	C	—	—	—	A	—
Diesel Fuel	B	A	—	B	A	D
Gasohol (10-15% Methanol)	D	—	—	—	A	—
High-test (Super) Gasoline	D	A	—	—	A	—
Kerosene	A	V	—	B	A	D
Oils						
ASTM Oil #1	A	—	—	B	A	—
ASTM Oil #2	A	—	—	—	A	—
ASTM Oil #3	A	—	—	B	A	—
Brake Fluid (ATE or ATS)	D	A	—	—	A	
Gear Box Oil (SAE 90)	A	—	—	—	A	—
Hydraulic Fluid	B	—	—	—	A	—
Hydraulic/Water Emulsion	B	—	—	—	A	—
Mineral Oil	A	A	C	A	A	—
Motor Oil	A	A	B	—	A	—
Paraffin Oil	A	A	—	A	A	
Power Steering Fluid	B	—	—	—	A	—
Skydrol® 500 Oil	D	—	—	—	A	B

	Polyurethane	Nylon12	Polyethylene	PVC	PTFE	Weld Tubing Cover
Greases						
Calcium Grease	A	—	—	—	A	—
Sodium Grease	A	—	—	—	A	—
Teflon® Grease	A	—	—	—	A	—
Miscellaneous						
Dioctyl Phthalate (DOP)	A	—	C	C	A	—
Ethylene Chloride	B	C	D	—	A	D
Ethylene Glycol/Water 50/50	B	—	—	A	A	A
Household Cleaner	B	—	—	—	A	—
Naptha	A	—	A	B	A	D
Silage (Silo) Juice	B	—	—	—	A	—
Natural Perspiration	A	—	—	—	A	—
Tincture of Iodine	D	—	—	—	A	—
Tricresyl Phosphate	D	—	—	C	A	—
Solvents						
Acetone	D	A	D	C	A	B
Aniline	D	B	B	B	A	—
Benzene	D	A	D	C	A	D
Benzyl Alcohol	E	—	—	—	A	B
Butane	B	A	—	—	A	B
Butyl Acetate	D	A	B	C	A	—
Butyl Alcohol	D	A	A	—	A	—
Carbon Tetrachloride	D	A	D	C	A	D
Chlorobenzene	D	C	D	C	A	D
Chloroform	D	C	D	C	A	D
Cyclohexane	C	A	—	A	A	D
Ethanol	C	—	B	—	A	B
Ether	C	A	—	—	A	B
Ethyl Acetate	D	A	C	C	A	A
Freon 11, 12, 22	C	—	—	—	A	D
Glycerine & Glycol	A	A	B	A	A	A
Heptane	B	A	D	B	A	—
Hexane	B	A	—	B	A	—
Isopropyl Alcohol	C	A	—	—	A	—
Methanol	C	—	B	—	A	A
Methyl Acetate	D	—	—	C	A	—
Methyl Ethyl Ketone	C	A	—	C	A	—
Methyl Glycol	D	—	—	—	A	—
Methylene Chloride	D	E	D	C	A	—
N-Methyl Pyrrolidone	E	—	—	—	A	—
Perchloroethylene	D	—	—	C	A	—
Petroleum	B	A	—	—	A	—
Pyridine	E	A	—	—	A	B
Tetrachloroethylene	D	—	—	C	A	—
Tetrahydrofuran	D	B	D	C	A	B
Toluene	D	A	D	C	A	D
Trichloroethylene	D	C	D	C	A	D
Turpentine (Pine Oil)	B	A	C	B	A	B
Xylene	D	A	—	C	A	D

Teflon® is a registered trademark of the Dupont Corporation.
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A . . . . . Excellent	(0-3%)
B . . . . . Good	(4-15%)
C . . . . . Fair	(16-30%)
D . . . . . Poor	(>30%)
E. . . . . Dissolves	

WARNING:
This table is a general guide based on our testing. Although every effort was made to ensure its accuracy, we cannot guarantee your results due to variables in temperature and application. Therefore, no warranty is expressed or implied, and the user assumes all risk and liability.