OPTUBUS
Fluid Transfer Components

Versilon™ F-5500-A

Temperature and **C**hemical **R**esistant

Soft **T**ubing withstands the harshest **C**hemicals even under high **T**emperature

Pumpable Dry Cleaning Fluid Line & Solvent Recovery Tubing

Made of a proprietary fluoroelastomer, Versilon™ F-5500-A tubing has both the physical and chemical characteristics that make it ideal for severe environments, such as dry cleaning fluid lines and solvent recovery systems, where other flexible tubes fail. Versilon™ F-5500-A tubing can be used in continuous service with temperatures as high as 204°C (400°F). Versilon™ F-5500-A tubing's opaque black color helps protect light-sensitive materials being transferred and will not prematurely crack and age when exposed to ozone, sun and weather. A food grade tubing formulation is available upon request.

Reduced Outgassing

Through a high temperature, time controlled, post-cure process, virtually all processing residuals are driven from Versilon™ F-5500-A. This allows for use in applications where minimal outgassing is required. This condition can be desirable in numerous applications such as in the aerospace industry, where preventing contamination of highly sensitive instrumentation may be critical.

Excellent Chemical Resistance

Versilon™ F-5500-A tubing provides excellent resistance to corrosive chemicals, oils, fuels, solvents and most mineral acids. Versilon™ F-5500-A tubing is highly flexible and resilient, making it the ideal choice in peristaltic pumping of extremely corrosive materials. Refer to the "Effect of Chemical and Temperature Environments on Physical Properties" chart on the back for a listing of common chemicals and their relative effect on the physical properties of Versilon™ F-5500-A tubing.

Features and Benefits

- provides continuous service at temperatures up to 204°C (400°F)
- Excellent resistance to corrosive chemicals, oils, fuels and solvents
- resists ozone, sunlight and weathering
- Opaque black color helps protect light-sensitive fluids

Typical Applications

- Solvent recovery systems
- Process monitoring equipment
- Peristaltic pumping of concentrated acids
- Fuel lubrication lines in high temperature equipment
- O-rings, seals and gasketing
- caustic hot air exhaust and sampling
- dry cleaning fluid lines
- chemical processing

OPTUBUS GmbH – www.optubus.de – info@optubus.de

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Versilon™ F-5500-A Tubing Standard Sizes

Part Number	ID	OD	Wall	Min. Bend Radius	Max. Working Pressure* 22°C (73°F)	Max. Working Pressure* 135°C (275°F)	Vacuum Rating at 22°C (73°F)	Vacuum Rating at 135°C (275°F)
VS1,59FA3,18	1,59 mm (1/16")	3,18 mm (1/8")	0,79 mm (1/32")	6,4 mm	1,2 bar (18 psi)	0,8 bar (12 psi)	760 mmHg	760 mmHg
VS3,18FA6,35	3,18 mm (1/8")	6,35 mm (1/4")	1,59 mm (1/16")	12,7 mm	1,3 bar (19 psi)	0,9 bar (13 psi)	760 mmHg	760 mmHg
VS4.76FA7,94	4,76 mm (3/16")	7,94 mm (5/16")	1,59 mm (1/16")	19,1 mm	1,0 bar (15 psi)	0,6 bar (9 psi)	760 mmHg	760 mmHg
VS6,35FA9,53	6,35 mm (1/4")	9,53 mm (3/8")	1,59 mm (1/16")	25,4 mm	0,9 bar (13 psi)	0,5 bar (8 psi)	635 mmHg	508 mmHg
VS7,94FA11,11	7,94 mm (5/16")	11,11 mm (7/16")	1,59 mm (1/16")	31,8 mm	0,7 bar (11 psi)	0,4 bar (6 psi)	381 mmHg	254 mmHg
VS9,53FA12,7	9,53 mm (3/8")	12,7 mm (1/2")	1,59 mm (1/16")	50,8 mm	0,6 bar (10 psi)	0,3 bar (5 psi)	254 mmHg	127 mmHg

*Working pressures are calculated at a 1:5 ratio relative to burst pressure using ASTM D1599

The values listed for working and burst pressures are derived from tests conducted under controlled laboratory conditions. Many factors will reduce the tubing's ability to withstand pressures, including temperature, chemical attack, stress, pulsation and the attachment to fittings. It is imperative that the user conduct tests simulating the conditions of the application prior to specifying the tubing for use.

Typical Physical Properties of Versilon™ F-5500-A Tubing

Property	ASTM Method	Value of Rating
Durometer Hardness	D2240	60° Shore A, 15s
Color	-	Black
Specific Gravity	D792	1.90
Tensile Strenght	D412	1.400 psi (9.3 MPa)
Ultimate Elongation	D412	300,00%
Tear Resistance	D1004	17.5 kN/m (100 lb-f/in)
Compression Set Constant Deflection @ 70°C (158°F) for 22 hrs	D395	37,00%
Tensile Set	D412	13,00%
Tensile Stress @100% Elongation	D412	350 psi (2.4 MPa)
Maximum Recommended Operating Temperature	-	204° C (400°F)
Brittleness Temperature	D746	-51°C (-60°F)
Water Absorption, 24 hrs. @ 23°C	D570	0.23 %

Effect of Chemical and Temperature Environments on Physical Properties

Versilon™ Tubing at Room Temperature** and Percent of Original Properties Retained after 28-Day Exposure

Percentage Retained

Environment	Tensile	Ultimate % Elongation	100% Modulus (psi)	200% Modulus (psi)	300% Modulus (psi)	Weight Change	Volume Change
Original Properties	1400	300	350	800	1300	-	-
ASTM Oil #3 at 300°F	90	92	103	99	98	+2%	+5%
Ethyl Alcohol 99%	67	103	64	61	65	+2%	+5%
Hydrochloric Acid 37%	86	109	81	75	78	+3%	+5%
Hydrofluoric Acid 48%	85	109	85	78	79	+1%	+1%
Nitric Acid 10% (156°F)	76	99	74	65	72	+50%	+94%
Nitric Acid 60%	86	106	79	76	81	+3%	+4%
Perchloroehtylene	71	108	68	64	65	+4%	+6%
Sodium Hydroxide 40%	94	96	94	91	98	-1%	-1%
Sulfuric Acid 50%	94	94	96	96	98	-1%	-1%
Sulfuric Acid 98% (158°F)	84	94	93	87	90	+14%	+20%
Sulfuric Acid 98%	93	97	95	91	94	+6%	+9%
Tolulene	56	91	64	62	62	+6%	+15%
Water at 158°C	87	105	89	83	82	+1%	+1%
Methylene Chloride	41	67	61	59	-	+13%	+20%
Air at 400°F	111	95	107	112	117	+6%	+9%

**Room temperature is 73°F, 50% Relative Humidity, ASTM D471