Please call Goodyear Rubber Products to order any products shown in this catalog
1-727-822-4672 or 1-800-367-4673 toll free in the USA
Email inquiries to: Sales@GoodyearRubberProducts.com

WILLCOX HOSE

Willcox Composite Hose

From Acetaldehyde to Zinc Halides...
and thousands of liquids and compounds
in between, Willcox Hose composite hoses
are specifically engineered to meet your
most challenging transfer application.

USHOSE CORPORATION
PART OF THE AMNITEC GROUP

POLYPROPYLENE HOSE

Multi-Purpose Chemical Hose

Standard Duty Series:

3081PG

Temperature: -22° to +212°F (-20°C to +100°C)

** Depending on conveyant media*

Typical Applications:

- In plant suction and discharge transfer
- Blending and drumming
- Tank car and railcar transfer

Heavy Duty Series:

3091PG, 3094PS, 4091SG, and 4094SS

Benefits and Features

- Extremely flexible and user friendly
- Seamless tubes to prevent leak paths
- Electrically continuous capability
- Retains flexibility in cold environments

FLUOROPOLYMER HOSE

Aggressive Chemical Hose

Heavy Duty Series:

4121SG and 4124SS

Temperature: -22° to +212°F (-20°C to +100°C)

Heavy Duty High-Temp Series:

4131SG and 4134SS

Temperature: -22° to +320°F (-20°C to +160°C)

Special Fuming Acid Series:

4976SS

Temperature: -22° to +212°F (-20°C to +100°C)

** Depending on conveyant media*

Typical Applications:

- Aggressive chemicals
- Chemical purity, easy to clean
- Chemicals with elevated temperatures
- Alternative to convoluted Teflon® hose

UHMW Series: "Ultra Molecular-Weight Polyethylene"

1601G/G, 3601PG, 4601SG and 4604S

Temperature: -22° to +180°F (-20°C to +82°C)

** Depending on conveyant media*

Benefits and Features

- More rugged than standard Teflon® hose
- PFA, FEP, PTFE, UHMW and Hostaflon materials
- Color coding for chemical identification
- Full vacuum

Willcox Chemical Hose Dimensional Data Chart

NOMINAL ID IN. (MM)	NOMINAL OD IN. (MM)	MAX. MAWP PSI (BAR) STD. DUTY	MAX. MAWP PSI (BAR) HVY. DUTY	MIN. BEND RADIUS IN. (MM)	WEIGHT LB FT (KG/M)	MAX. LENGTH FEET
1" (25)	1-1/2"(38)	200 (14)	250 (17.5)	4 (100)	.6 (.9)	60-95
1-1/2" (38)	2"(50)	200 (14)	250 (17.5)	5 (125)	1.0 (1.5)	60-95
2" (50)	2-1/2"(65)	200 (14)	250 (17.5)	6 (150)	1.5 (2.2)	60-95
3" (75)	3-1/2"(88)	200 (14)	250 (17.5)	8 (200)	2.1 (3.1)	60-95
4" (100)	4-1/2"(115)	200 (14)	250 (17.5)	13 (325)	2.3 (3.2)	60-95

Nominal Dimensional Chart *MAWP at 4:1 safety factor*

Willcox Internal and External Wire Construction Identification

STYLE	INTERNAL WIRE	EXTERNAL WIRE
GG	Galvanized Steel	Galvanized Steel
PG	Black Polypropylene Coated	Galvanized Steel
PS	Black Polypropylene Coated	Stainless Steel
PP	Black Polypropylene Coated	Black Polypropylene Coated
SG	Stainless Steel	Galvanized Steel
SS	Stainless Steel	Stainless Steel

Notes:

- *Fitting pressure rating may limit working pressure of an assembly.*
- *Increased operating temperatures will reduce working pressure of the hose.*
- *Rated working pressures are @ 70° F or worldwide ambient temperatures.*

PETROMASTER® HOSE

Heavy Duty Series:

1091GG

Typical Applications:

- In-plant suction & discharge service
- Blending and drumming
- Tank car and railcar transfer
- Fuel transfer hose
- Lube oil blending

Benefits and Features

- Retains flexibility in extreme cold
- Superior fitting retention
- Seamless tubes to prevent leak paths
- Ozone/abrasion resistant cover
- 100% Aromatic resistance

Petromaster Dimensional Data Chart

NOMINAL ID IN. (MM)	NOMINAL OD IN. (MM)	MAX. WP PSI @ 70° (BAR)	MIN. BEND RADIUS IN. (MM)	TEMP. RATING (°F)	WEIGHT LB/FT (KG/M)	MAX. LENGTH FEET
1" (25)	1-1/2" (38)	250 (17.5)	4 (100)	-22°F to +212°F	.6 (.9)	60-95
1-1/2" (38)	2" (50)	250 (17.5)	5 (125)	-22°F to +212°F	1.0 (1.5)	60-95
2" (50)	2-1/2" (65)	250 (17.5)	6 (150)	-22°F to +212°F	1.5 (2.3)	60-95
3" (75)	3-1/2" (88)	250 (17.5)	8 (200)	-22°F to +212°F	2.3 (3.5)	60-95
4" (100)	4-1/2" (115)	250 (17.5)	13 (325)	-22°F to +212°F	2.3 (4.5)	60-95

Nominal Dimensional Chart ** Depending on conveyant media* *MAWP at 4:1 safety factor*

RACKMASTER® HOSE

Bottom Loading Hose

Heavy Duty Series:

1061GG (Standard Color is Black, API color coding available)

Typical Applications:

- Bottom loading arms
- Petroleum products
- Ethanol, Diesel and Bio-Diesel
- Aviation, JP Fuels
- Alternative Fuels

Benefits and Features

- Unique fire retardant barrier layer
- Seamless tubes to prevent leaks and permeation
- 100% aromatic resistant
- Suitable for all formulations of gasoline, diesel and jet fuel
- No outer braid to fray and cut the operators hands
- Ozone resistant cover

Rackmaster Dimensional Data Chart

NOMINAL ID IN. (MM)	NOMINAL OD IN. (MM)	MAX. WP PSI @ 70° (BAR)	MIN. BEND RADIUS IN. (MM)	WEIGHT LB/ FT (KG/M)	TEMP. RATING (°F)	MAX. LENGTH FEET
3" (75)	3-5/8"(89)	250 (17.5)	8 (200)	2.3 (3.5)	-22°F to +212°F	95
4" (100)	4-5/8"(120)	250 (17.5)	13 (325)	2.3 (4.5)	-22°F to +212°F	95

Nominal Dimensional Chart *MAWP at 4:1 safety factor*

Rackmaster Special Ordering Information:

Composite hose elongates under pressure and it is imperative to provide the factory or authorized fabricator with the specific overall length required under a pressurized length or non-pressurized length. Rackmaster overall length tolerance is +/- 2". Please consult factory to assure the proper measuring lengths.

Notes:

- *Fitting pressure rating may limit working pressure of an assembly.*
- *Increased operating temperatures will reduce working pressure of the hose.*
- *Rated working pressures are @ 70° F or worldwide ambient temperatures.*

CRYOGENIC HOSE

Cryogenic 50 Series:
4014SS, 4011SG

Typical Applications:
- Tank truck and Railcar LPG transfes
- In plant LPG or LNG transfes
- Marine LPG and LNG transfer
- Suitable for a wide variety of cryogenic fluids
- 20" LNG vessel-to-vessel transfer

Cryogenic 200 Series:
4004SS

Benefits and Features
- Flexible user friendly liquid gas hose
- Remains flexible during cold conditions
- Manufactured to IMO Gas Carrier Code
- 4004SS certified to EN00218061
- MAWP based on 5:1 safety factor

LB/FTMAX. #4004SS	MAX. MAWP NOMINAL ID (KG/M)	MIN. BEND PSI (BAR) LENGTHS	RADIUS IN. IN. (MM)	MAX. MAWP TEMP. RATING #4014SS	PSI (BAR) (MM)	TEMP. RATING #4014SS	WEIGHT #4004SS
1" (25)	362 (25)	6 (150)	-50c to +50c	150 (10.5)	-200c to +50c	.6 (.9)	50
1.5" (38)	362 (25)	7 (175)	-50c to +50c	150 (10.5)	-200c to +50c	1.1 (1.6)	50
2" (50)	362 (25)	8 (200)	-50c to +50c	150 (10.5)	-200c to +50c	1.6 (2.4)	50
3" (75)	362 (25)	10 (250)	-50c to +50c	150 (10.5)	-200c to +50c	3.0 (4.5)	50
4" (100)	300 (21)	20 (500)	-50c to +50c	150 (10.5)	-200c to +50c	5.0 (7.5)	50
6" (150)	300 (21)	25 (660)	-50c to +50c	150 (10.5)	-200c to +50c	9.3 (13.8)	45
8" (200)	215 (15)	36 (910)	-50c to +50c	150 (10.5)	-200c to +50c	12.5 (18.7)	40

Nominal Dimensional Chart *MAWP at 5:1 safety factor*

HOSE END ATTACHMENT FITTINGS

The end fittings in Willcox hose assemblies are engineered with end user safety as the primary objective. All fittings are subjected to a stringent quality control, inspection and traceability program. Fittings from sources other than Willcox are not approved as they may be a source of a catastrophic failure. Willcox assemblies exceed and/or conform to NAHAD 600:2005 "Hose Assembly Guidelines" and British Standards BS5842 (1980).

HOSE SIZE	FERRULES CS	FERRULES SS	MALE PIPE CS	MALE PIPE SS	MALE PIPE BR	MALE PIPE POLY	CAM & GROOVE ALUM	CAM & GROOVE SS	CAM & GROOVE BR	FIXED 150# OR 300# FLANGES CS	FIXED 150# OR 300# FLANGES SS	SWIVEL 150# OR 300# FLANGES CS	SWIVEL 150# OR 300# FLANGES SS	Polypro. 150# Flanges	PLAIN AND VICTAULIC ENDS CS	PLAIN AND VICTAULIC ENDS SS
1"	✓	✓	✓	✓		✓				✓	✓	✓	✓	✓	✓	✓
1.5"	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓
2"	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3"	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4"	✓	✓	✓	✓		✓	✓			✓	✓	✓	✓	✓	✓	✓
6"	✓	✓	✓	✓		✓				✓	✓	✓	✓	✓	✓	✓
8"	✓	✓	✓	✓						✓	✓	✓	✓		✓	✓
10"	✓	✓	✓	✓						✓	✓	✓	✓		✓	✓
12"	✓	✓	✓	✓						✓	✓	✓	✓		✓	✓

Notes:
- *SS ferrules are stocked as SS304. SS316 are available with minimum quantities per order required.*
- *All SS male pipe and cam & groove fittings are type SS316.*
- *2" and 3" SS316 female cam & groove fittings are Dixon Ez-Lock™ locking style camlocks.*
- *Sanitary style end fittings and other custom fittings are available upon request.*
- *SS fixed or swivel (floating) flange ends are available in either SS304 or SS316 material. Must specify when ordering.*
- *Willcox stub ends for swivel or lap joint flange ends are made from either sch 40 carbon steel or SS316 materials.*
- *Polypropylene style flange ends are threaded and back-welded.*
- *Plain end fittings are available, but require additional fittings for testing when ordered in a assembly.*
- *Additional alloys such as; Hastelloy®, Monel® and Kynar® upon request.*

MARINEMASTER® HOSE

Marine Ship-to-Shore Hose

Polypropylene Series:

1151GG , 3161PG, 3164PS, 4161SG, 4164SS and 1154GS

Typical Applications:

- Ship-to-shore transfer
- Ship-to-ship transfer
- Portable pump and temporary pipeline
- Hazardous chemical transfer
- Petroleum, chemical and acid transfer applications

Fluoropolymer Series:

4171SG, 4174SS , 1171GG and 3222SS

Benefits and Features

- Manufactured in accordance to BS5842:1980
- Exceeds USCG requirements 33CFR 154.500
- Manufactured in accordance to EN:13765
- Extremely flexible and operator friendly
- Custom color available

NOMINAL ID IN. (MM)	NOMINAL OD IN. (MM)	MAX. WP PSI (BAR) HVY DUTY	MIN. BEND RADIUS IN. (MM)	TEMP. RATING POLYPROPYLENE (°F)	TEMP. RATING FLUOROPOLYMER (°F)	WEIGHT LB/FT (KG/M)	MAX. LENGTH
4" (100)	5" (125)	250 (17.5)	16 (400)	-22° to +212°	-22° to +212°	5.3 (8.0)	95
6" (150)	7" (175)	250 (17.5)	20 (500)	-22° to +212°	-22° to +212°	7.3 (11.0)	95
8" (200)	9 1/2" (250)	250 (17.5)	30 (762)	-22° to +212°	-22° to +212°	11.0 (16.5)	85
10" (250)	11.5" (288)	200 (17.5)	36 (900)	-22° to +212°	-22° to +212°	14.0 (21)	40

Nominal Dimensional Chart ** Depending on conveyant media* *MAWP at 4:1 safety factor*

VAPOR RECOVERY HOSE

Marine ship-to-shore Vapor Recovery Hose

Polypropylene Vapor Recovery Series:

1321GG, 3351PG,1323G/P, 3354PS, 4321SG and 4324SS

Typical Applications:

- Marine vapor recovery
- Aggressive chemical vapor recovery
- Terminal vapor recovery
- Light duty general purpose transfer

Fluoropolymer Vapor Recovery Series:

1331G/G, 4331SG and 4334SS

Benefits and Features

- Exceeds U.S.C.G. 33 CFR 154.810, par. (d)
- Lightweight but durable for marine applications
- Long continuous lengths available 80-95 feet
- Ozone resistant bright yellow outer cover

NOMINAL ID IN. (MM)	NOMINAL OD IN. (MM)	MAX. WP PSI (BAR) HVY DUTY	MIN. BEND RADIUS IN. (MM)	TEMP. RATING POLYPROPYLENE (°F)	TEMP. RATING FLUOROPOLYMER (°F)	WEIGHT LB/FT (KG/M)	MAX. LENGTH
3" (75)	3-1/2" (88)	100 (7)	8 (200)	-22° to +180°	-22° to +212°	1.5 (2.3)	95
4" (100)	5" (125)	100 (7)	9 (225)	-22° to +180°	-22° to +212°	1.6 (2.4)	95
6" (150)	7" (175)	100 (7)	17 (425)	-22° to +180°	-22° to +212°	3.7 (5.0)	95
8" (200)	9 1/2" (250)	100 (7)	27 (675)	-22° to +180°	-22° to +212°	5.3 (8.0)	85
10" (250)	11.5" (288)	100 (7)	33 (825)	-22° to +180°	-22° to +212°	8.0 (12.0)	40
12" (300)	13.5" (338)	100 (7)	47.2 (1200)	-22° to +180°	-22° to +212°	17.0 (26.0)	33

Nominal Dimensional Chart *MAWP at 4:1 safety factor*

Note:

Willcox vapor recovery hoses are manufactured to meet or exceed US Coast Guard requirements in Federal Register volume 33 CFR chapter 1, sub-titled "Vapor Recovery Connections" para. 154-810 dated 7.1.98. All vapor recovery hose is manufactured with a bright yellow cover and 2" VAPOR logo. Each are marked red/yellow/red on each end and flanges have .625 pilot holes on each end.

Notes:

- *Fitting pressure rating may limit working pressure of an assembly.*
- *Increased operating temperatures will reduce working pressure of the hose.*
- *Above working pressures are @ 70° F or worldwide ambient temperatures.*

Willcox Internal and External Wire Construction Identification

STYLE	INTERNAL WIRE	EXTERNAL WIRE
GG	Galvanized Steel	Galvanized Steel
PG	Black Polypropylene Coated	Galvanized Steel
PS	Black Polypropylene Coated	Stainless Steel
PP	Black Polypropylene Coated	Black Polypropylene Coated
SG	Stainless Steel	Galvanized Steel
SS	Stainless Steel	Stainless Steel

INSULATING FLANGE

A different principle of an insulating joint is to use an insulating spool type flange offering the following advantages over traditional insulating flange kits:

- Minimum resistive path is in the order of one inch. 1012 ohm/cm
- The offset bolt pattern design assures foolproof and failsafe insulation.
- Simple one piece Nylatron GSM construction.
- Conforms to U.S.C.G. 154.810 "Vapor Line Connections" Section G – facility vapor connection and I.S.G.O.T.T. chapter 6 – Electrical Insulations
- Prevents any possibility of an electrical arc upon disconnection of the hose.

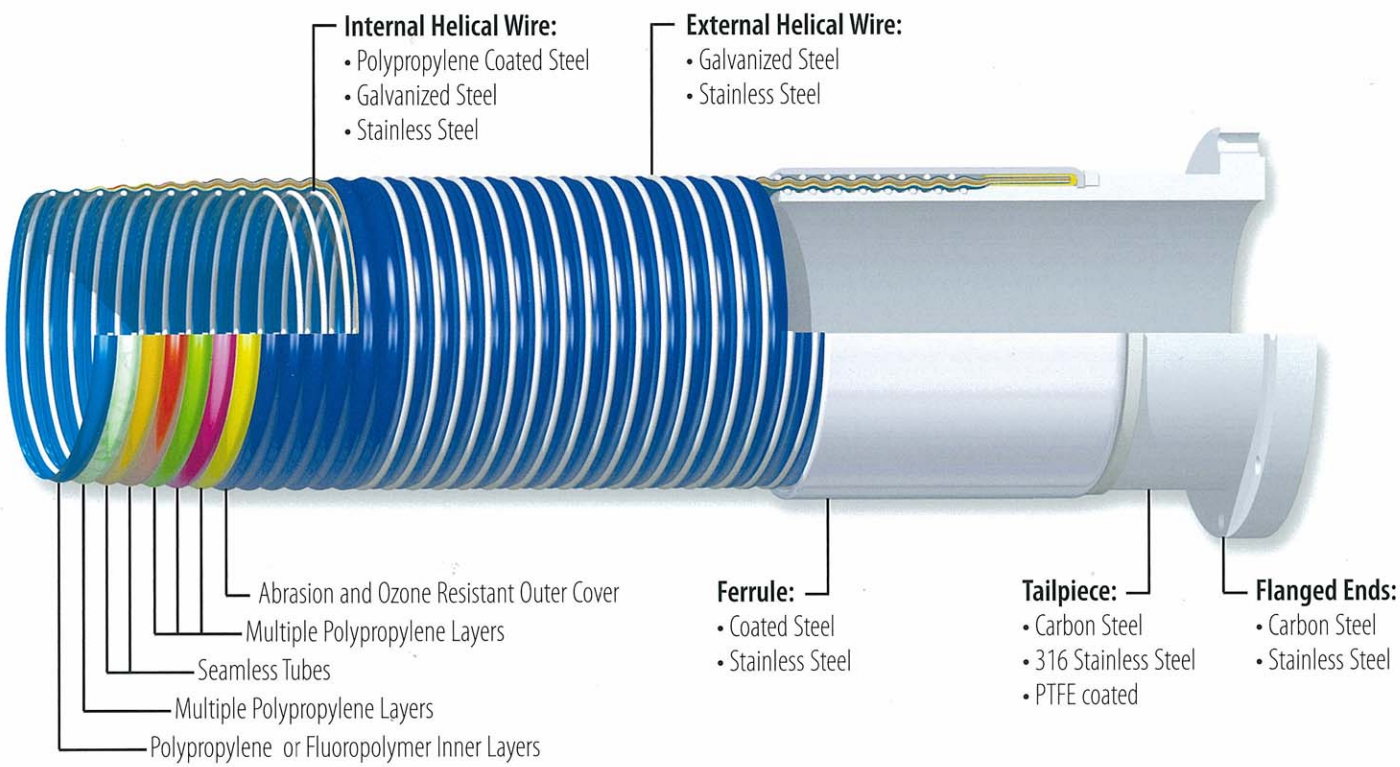
Contact Willcox Customer Service for pdf file brochure on Willcox's "Insulating Flange".

HOSE SLINGS

To enhance the ease of hose handling and prolong the life of your WillcoxHose, Willcox offers a complete line of Hose Slings including:

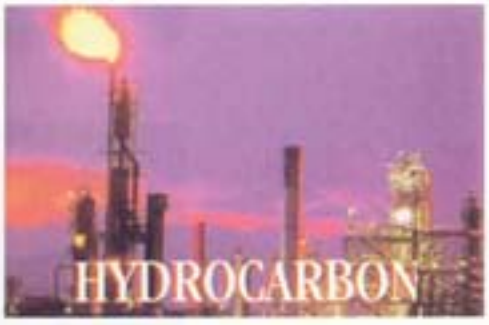
- Choker style slings 4" – 12"
- Steel reinforced cradle style slings 4" – 12"
- HoseBun™

WILLCOX HOSE CROSS SECTION



TIFT-Compoflex

Composite Hose Products



USHOSE CORPORATION
PART OF THE AMNITEC GROUP

U.S. Hose Corp. (Formerly Senior Flexonics Inc.)

Romeoville, Illinois

Houston, Texas

One source for all your flexible hose needs: Metal, Composite and Fluoropolymer hose and assemblies

For over 100 years, the US Hose Corporation has remained the preeminent manufacturer of metal, fluoropolymer and composite hose products. As part of The Amnitec Group, our factories in Romeoville, Illinois and Houston, Texas complement an impressive global network of specialty hose manufacturing facilities throughout North America and Europe.

Our diverse product line coupled with unparalleled engineering and customer service support enables our customers to provide a flexible hose solution for nearly any liquid and gaseous transfer application.

TIFT-Compoflex Composite Hose Products

Operations are computerized, from CAD through order fulfillment.

100% of TIFT-Compoflex hoses are tested to meet specification and type compliance.

State-of-the-art Quality Control disciplines assure hoses consistent in construction and performance.

Table Of Contents

Style designations (see product for specific availability):

GG Galvanized steel inner and outer wires
PG Polypropylene coated inner wire; galvanized steel outer wire
PS Polypropylene coated inner wire; 316 Stainless Steel outer wire
SG 316 Stainless Steel inner wire; galvanized steel outer wire
SS 316 Stainless Steel inner and outer wires
XX-F above wire combinations with PTFE barrier layer

TIFT-Compoflex Composite Hose Products

The point of transfer can be a vulnerable link in the chain of production, distribution and use of bulk chemicals.

For thousands of chemicals - for processing, transportation and bulk transfer applications — TIFT-Compoflex Composite Hoses are built to meet the critical requirements of chemicals and fluids handling.

Construction is the key

From bore liner to end fittings…
TIFT-Compoflex products are engineered to deliver the maximum in chemical compatibility and on-the-job performance.

- **The "Labyrinth Seal"…**

Multiple, tightly-wound component layers create a very long and complex course for fluids. Manufacturing techniques assure the proper gauge and pitch of the inner and outer wires. The "labyrinth seal" is self-energized by the internal pressure of liquids, and the action of all material components.

The result is flexible composite hose… that is seepage-free and leak-proof; that doesn't kink or collapse; that has great hoop strength, exceptional service life, and offers superior safety and performance.

- **The "Barrier Layer" …**

TIFT-Compoflex Composite Hoses are built with multiple wraps of both polar and non-polar thermoplastic films. The barrier layer prevents permeation by both polar fluids (like methanol) and non-polar liquids (like gasoline).

The result is composite hose… with structural and cover layers that do not deteriorate due to chemical attack; that maintains maximum strength, flexibility and durability; that is compatible with the widest range of chemicals.

- **Electrical Properties . . .**

Typically, most hose assemblies have full end-to-end electrical continuity (less than 10 ohms resistance) achieved by bonding both inner and outer wires to the end fittings. For actual values, please contact Senior Flexonics' Technical Department.

Assemblies are also available with specified electrical resistance, semi-conductive or electrically discontinuous properties.

The result is composite hose… that prevents sparking and arc-over hazards and meets the electrical properties requirements of your applications.

- **Externally swaged end fittings . . .**

Each TIFT-Compoflex end fitting is specifically designed and manufactured to produce a perfect union with the hose. The ferrule and the tailpiece are permanently engaged by the external swage process.

The result is . . . hose and fittings perform to rated burst pressure and assure 100% performance of the complete hose assembly.

Scrolled, "double start" (dual helix) threading of hose to fitting assures secure attachment and maximum performance of hose assembly.

Real advantages for your applications

Compared to rubber hoses and metal hoses…
TIFT-Compoflex Composite Hoses are light weight and flexible for easier handling. Their multi-layer construction prevents catastrophic failure. Flexibility is retained at low and even cryogenic temperatures. Hoses are protected from corrosion and attack by other liquids, UV and ozone by their tough, PVC-impregnated fabric cover.

Engineered and manufactured to high standards . . .
TIFT-Compoflex Composite Hoses comply with various US and international standards including BS 5842 and US Coast Guard. Heavy-duty dock and barge hoses are approved to IMO Codes, BCH and IBC requirements.

From Acetaldehyde to Zinc Halides . . .
and thousands of liquids and compounds in between, TIFT-Compoflex composite hoses are specifically engineered to meet your most challenging transfer applications.

Engineered from inner wire to color-coded cover for maximum service and compatibility ...

- **Inner wire...** provides structural support and crush resistance.

  Galvanized steel, Stainless Steel or special polypropylene-covered inner wire available to provide optimum chemical compatibility and maximum hose service life.

- **Polypropylene inner fabric...** provides resistance to chemical attack and protects film layers and end fittings from abrasion. It provides axial strength and greater tensile strength.

  Reinforced fabrics provide pressure capabilities and protect barrier film layers.

- **Polyester and polypropylene layers...** handle virtually all solvents, and are compatible with the vast majority of commonly transported chemicals at normal transfer temperatures.

  They are unaffected by 100% aromatics and prevent permeation by polar and non-polar liquids.

  Teflon®-FEP (Fluorinated Ethylene/Polypropylene) and PTFE liners – are available to handle more corrosive chemicals that would attack standard materials.

- **PVC-impregnated cover...** prevents hose abrasion, and provides UV and ozone resistance.

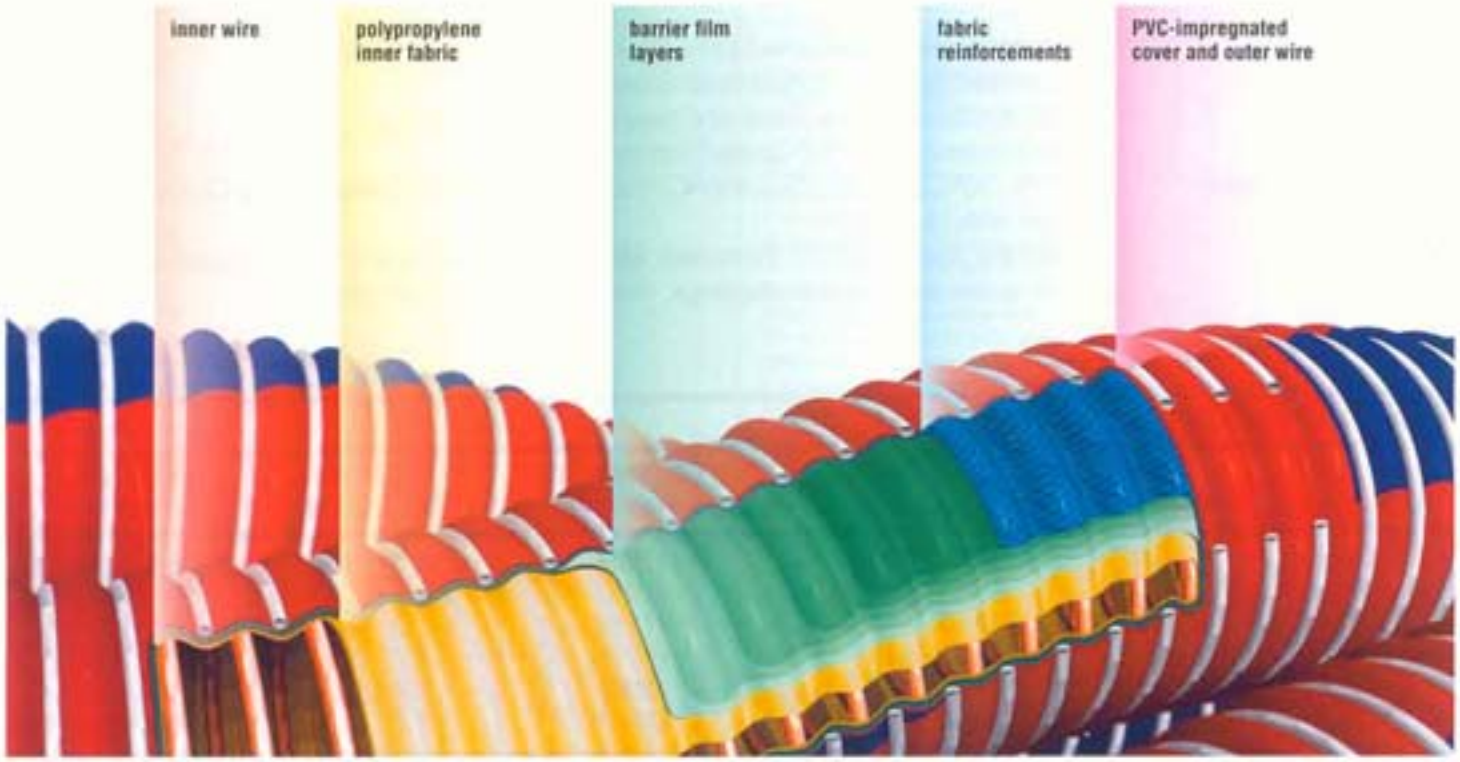
- **Stripe color-coded...** for corporate identification.

- **Outer wire...** provides over-all hoop strength, structural integrity and double electrical continuity.

  Galvanized steel or Stainless Steel is available

- **Externally swaged hose fittings...** Achieve perfect union and assure performance up to rated burst pressure.

Teflon is a registered trademark of DuPont.



TIFT-Compoflex Composite Hose Products

CHEMICAL HOSES

Code 949: CHEMIFLEX PGL, PSL, SGL, SSL

For low-pressure transfer applications in over-the-road vehicles, storage tank and rail car loading and unloading. Designed for use where light weight and flexibility are essential.

Typical applications: Tank-to-process chemicals handling, storage tank transfer and batching, drumming, manifolding, blending, etc., rail car and tank truck loading and delivery

Conveyants handled: Suited for a wide range inorganic and organic liquids and petroleum products at rated discharge pressure or full suction. Refer to the Chemical Compatibility Chart for specific recommendations.

Features:
- Light weight – easy to handle
- Flexible – even at low temperatures
- Tough PVC outer cover – resists dragging wear and abrasion
- Polypropylene liner with a polypropylene and polyester carcass – for maximum chemical resistance
- Safe and dependable – offers maximum flexibility
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing
- Special polypropylene coated inner wire – fast dissipation of static electrical charges

Inner Wire	• Polypropylene-coated steel (316 Stainless Steel available)
Outer Wire	• Galvanized Steel (316 Stainless Steel available)
Carcass	• Polypropylene fabrics, films and polyester barrier layers
Cover	• Abrasion-resistant PVC-coated fabric
Temperature Range	• –22°F(–30°C) to +212°F(+100°C) (refer to Chemical Compatibility Chart)
Color	• Yellow with blue stripe
Couplings	• Externally swaged: NPT threaded; fixed, floating, reducing flanges; cam-and-grove quick-disconnect couplings, female lugs supplied per order.

Code 949 – CHEMIFLEX PGL, PSL, SGL, SSL:

ID in(mm)	OD in(mm)	MAX WP * psi (bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	MAX LEN ft(m)
1 (25)	1½ (38)	200 (14)	4 (100)	0.6 (0.9)	60 (18)
1½ (38)	2 (50)	200 (14)	5 (125)	0.8 (1.2)	60 (18)
2 (50)	2½ (65)	200 (14)	7 (175)	1.2 (1.8)	60 (18)
2½ (65)	3 (75)	200 (14)	7 (175)	1.7 (2.6)	60 (18)
3 (75)	3½ (88)	200 (14)	8 (200)	1.9 (2.9)	60 (18)
4 (100)	4½ (115)	150 (10.5)	12 (300)	2.7 (4.1)	60 (18)

* 4:1 safety factor

TIFT-Compoflex Composite Hose Products

CHEMICAL HOSES

Code 951: CHEMIFLEX PG, PS, SG, SS

A chemical utility hose for chemical plants, refineries, paint producers, paper mills and many other in-plant, liquid transfer operations as well as rail car loading and tank truck delivery.

Typical applications: Chemical plants, refineries, paint producers, paper mills, in-plant, rail car loading and tank truck delivery

Conveyants handled: Highly corrosive acids and alkalis, aldehydes, amines, alephatics, aromatic fuels, chlorinated hydrocarbons, alcohols, esters, ketones, lacquers and petroleum products at rated discharge pressure or at full suction. Not recommended for service for many bromide, chloride or fluoride compounds. Refer to the Chemical Compatibility Chart for specific recommendations.

Features:
- Light weight – easy to handle
- Flexible – even at low temperatures
- Polypropylene liner with a polypropylene and polyester carcass – for maximum chemical resistance
- Abrasion-resistant PVC-coated fabric outer cover – maximum durability and safety
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing
- Choice of galvanized or Stainless Steel outer wire – for maximum durability depending on external environment

Inner Wire	• Polypropylene-coated steel (316 Stainless Steel available) (see Chemical Compatibility Chart for specific recommendations)
Outer Wire	• Galvanized Steel (316 Stainless Steel available)
Carcass	• All polypropylene fabrics, films and polyester barrier layers
Cover	• Abrasion-resistant PVC-coated fabric
Temperature Range	• –22°F(–30°C) to +212°F(+100°C) (refer to Chemical Compatibility Chart)
Color	• Gray with blue stripe
Couplings	• Externally swaged: NPT threaded; fixed, floating, reducing flanges; cam-and-grove quick-disconnect couplings, female lugs supplied per order.

Code 951 – CHEMIFLEX PG, PS, SG, SS:

ID in(mm)	OD in(mm)	MAX WP * psi (bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	MAX LEN ft(m)
1 (25)	1½ (38)	250 (17.5)	4 (100)	0.6 (0.9)	60 (18)
1¼ (32)	1¾ (42)	250 (17.5)	5 (125)	0.75 (1.1)	60 (18)
1½ (38)	2 (50)	250 (17.5)	5 (125)	1.0 (1.5)	60 (18)
2 (50)	2½ (65)	250 (17.5)	6 (150)	1.5 (2.2)	60 (18)
2½ (65)	3 (75)	250 (17.5)	7 (175)	2.1 (3.1)	60 (18)
3 (75)	3½ (88)	250 (17.5)	8 (200)	2.3 (3.2)	60 (18)
4 (100)	4½ (115)	200 (14.0)	13 (325)	3.0 (4.5)	60 (18)

* 4:1 safety factor

TIFT-Compoflex Composite Hose Products

CHEMICAL HOSES

Code 947: TEF-FLEX SG, SS

TEF-FLEX SG hose is specially designed for in-plant transfer, rail and tank truck loading of many aggressive chemicals, solvents and acids including chloride and fluoride compounds. PTFE bore liner and special barrier layers assure maximum product life in applications where solvents and aromatics are transferred and electrical continuity and clean transfers are critical.

Typical applications: Chemical plants and refineries, chemical haulers, pharmaceutical manufacturers

Conveyants handled: Very aggressive or corrosive chemicals where a PTFE liner is mandatory at rated discharge pressure or at full suction. For extremely aggressive chemicals (butyl chloride, chlorolslulphonic acid, oleum, >60% nitric acid, pentachlorethane) see Special Chemiflex (page 9). Refer to the Chemical Compatibility Chart for specific recommendations.

Features:

- Light weight – easy to handle
- Flexible – even at low temperatures
- PTFE liner with a polypropylene and polyester carcass – for maximum chemical resistance
- Abrasion-resistant PVC-coated fabric outer cover – greater durability and safety
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing
- Choice of galvanized or Stainless Steel outer wire – for maximum durability depending on external environment

Bore Liner	• PTFE-Teflon
Inner Wire	• 316 Stainless Steel (see Chemical Compatibility Chart for specific recommendations)
Outer Wire	• Galvanized Steel (316 Stainless Steel available)
Carcass	• All polypropylene fabrics, films with polyester barrier layers
Cover	• Abrasion and ozone-resistant PVC-impregnated fabric
Temperature Range	• –22°F(–30°C) to +212°F(+100°C) (refer to Chemical Compatibility Chart)
Color	• Green with yellow stripe (SG), Green with green stripe (SS)
Couplings	• Externally swaged: NPT threaded; fixed, floating, reducing flanges; cam-and-grove quick-disconnect couplings, female lugs supplied per order.

Code 947 – TEF-FLEX SG, SS:

ID in(mm)	OD in(mm)	MAX WP * psi(bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	MAX LEN ft(m)
1 (25)	1½ (38)	200 (14.0)	3.5 (89)	0.6 (0.9)	60 (18)
1½ (38)	2 (50)	200 (14.0)	4.5 (114)	1.0 (1.5)	60 (18)
2 (50)	2½ (65)	200 (14.0)	5.5 (140)	1.3 (2.0)	60 (18)
3 (75)	3½ (88)	200 (14.0)	8.5 (216)	2.1 (3.2)	60 (18)
4 (75)	4½ (115)	150 (10.5)	12.5 (318)	2.3 (3.5)	60 (18)

* 4:1 safety factor

TIFT-Compoflex Composite Hose Products

CHEMICAL HOSES

Code 976/000: SPECIAL CHEMIFLEX SG
Code 976/001: SPECIAL CHEMIFLEX SS

SPECIAL CHEMIFLEX hose is recommended in chemical production and transportation applications for chemicals that are not compatible with polypropylene materials.

Typical applications: Chemical plants and refineries, chemical haulers

Conveyants handled: Very aggressive or corrosive chemicals where a Teflon-FEP liner is mandatory. Chemicals include: butyl chloride, chlorosulphonic acid, oleum and pentachlorethane at rated discharge pressure or at full suction. Refer to the Chemical Compatibility Chart for specific recommendations.

Features:
- Light weight – easy to handle
- Flexible – even at low temperatures
- FEP and PTFE fabric and film – maximum resistance to aggressive chemicals
- Abrasion-resistant PVC-impregnated fabric outer cover – greater durability and safety
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing
- Choice of galvanized or Stainless Steel outer wire – for maximum durability depending on external environment

Bore Liner	• FEP fabric, PTFE and FEP films
Inner Wire	• 316 Stainless Steel (see Chemical Compatibility Chart for specific recommendations)
Outer Wire	• Galvanized Steel (316 Stainless Steel available)
Carcass	• All polypropylene fabrics and films
Cover	• Abrasion-resistant PVC-impregnated fabric
Temperature Range	• –22°F(–30°C) to +212°F(+100°C) (refer to Chemical Compatibility Chart)
Color	• Red with blue stripe
Couplings	• Externally swaged: NPT threaded; fixed, floating, reducing flanges; cam-and-grove quick-disconnect couplings, female lugs supplied per order.

Code 976 – SPECIAL CHEMIFLEX SG, SS:

ID in(mm)	OD in(mm)	MAX WP * psi(bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	MAX LEN ft(m)
1 (25)	1½ (38)	250 (17.5)	4 (100)	0.6 (0.9)	60 (18)
1½ (38)	2 (50)	250 (17.5)	6 (150)	1.0 (1.5)	60 (18)
2 (25)	2½ (65)	250 (17.5)	7 (175)	1.4 (2.1)	60 (18)
2½ (65)	3 (75)	250 (17.5)	8 (200)	2.0 (3.0)	60 (18)
3 (75)	3½ (88)	250 (17.5)	11 (275)	2.4 (3.6)	60 (18)
4 (100)	4½ (115)	200 (14)	14 (350)	3.0 (4.5)	60 (18)

4:1 safety factor

TIFT-Compoflex Composite Hose Products

HYDROCARBON HOSES
Code 954: FUELMASTER GG

FUELMASTER GG hoses are designed for a wide range of fuel, oil and lubricant applications where lightweight and flexibility are essential.

Typical Applications: Rail car and tank truck loading and delivery, storage tank transfer, refinery process, drumming, manifolding, batching and blending

Conveyants handled: Light distillates - gasoline, diesel fuel, paraffin, kerosene and 100% aromatics. Not recommended for corrosive and aggressive chemicals. Refer to the Chemical Compatibility Chart for specific recommendations.

Features:
- Complete product compatibility – for safe handling of all types of hydrocarbon conveyants
- Light weight – easy to handle in loading and delivery
- Flexible – even at low temperatures
- Tough PVC outer cover – resists dragging wear and abrasion
- Safe and dependable – tested to industry standard 1½ times rated working pressure
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing

Inner Wire	• Galvanized Steel
Outer Wire	• Galvanized Steel
Carcass	• Multiple layers of Polypropylene fabrics, films and polyester barrier layers
Cover	• Abrasion-resistant PVC-impregnated fabric
Temperature Range	• –22°F(–30°C) to +212°F(+100°C) (refer to Chemical Compatibility Chart)
Color	• Blue with blue stripe
Couplings	• Externally swaged: NPT threaded; fixed, floating, reducing flanges; cam-and-grove quick-disconnect couplings, female lugs supplied per order.

Code 954 – FUELMASTER GG:

ID in(mm)	OD in(mm)	MAX WP * psi(bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	MAX LEN ft(m)
1 (25)	1½ (38)	200 (14)	4 (100)	0.6 (0.9)	60 (18)
1½ (38)	2 (50)	200 (14)	5 (125)	0.8 (1.2)	60 (18)
2 (50)	2½ (65)	200 (14)	5 (125)	1.2 (1.8)	60 (18)
2½ (65)	3 (75)	200 (14)	6 (150)	1.6 (2.4)	60 (18)
3 (75)	3½ (88)	200 (14)	7 (175)	1.8 (2.7)	60 (18)
4 (100)	4½ (115)	150 (10.5)	10 (250)	2.5 (37)	60 (18)

* 4:1 safety factor

HYDROCARBON HOSES

Code 901: HEAVY DUTY FUELMASTER

HEAVY DUTY FUELMASTER hoses are appropriate for transfer of conveyants from storage tanks, process piping or loading arms to rail cars and tank trucks.

Typical applications: Ideal for transfer from storage tanks, process piping or loading arms to rail car or tank truck, tank-to-process handling and manifolding/batching

Conveyants handled: Light distillates – gasoline, diesel fuel, paraffin, kerosene and 100% aromatics as well as black oils and heavy lubricants. Not recommended for corrosive and aggressive chemicals. Refer to the Chemical Compatibility Chart for specific recommendations.

Features:

- Complete product compatibility – for safe handling of all types of hydrocarbon conveyants, 100% aromatics and other non-aggressive chemicals and solvents
- Durable – easy to handle
- Retains Flexibility – even at very low temperatures
- Tough PVC outer cover – resists dragging wear and abrasion
- Safe and dependable – tested to industry standard 1½ times rated working pressure
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing

Inner Wire	• Galvanized steel
Outer Wire	• Galvanized steel
Carcass	• Multiple layers of Polypropylene fabric, film and polyester barrier layer
Cover	• Abrasion-resistant PVC-impregnated fabric
Temperature Range	• –22°F(–30°C) to +212°F(+100°C) (refer to Chemical Compatibility Chart)
Color	• Black with blue stripe
Couplings	• Externally swaged: NPT threaded; fixed floating, reducing flanges; cam-and-grove quick-disconnect couplings, female lugs supplied per order.

Code 901 – HEAVY DUTY FUELMASTER:

ID in(mm)	OD in(mm)	MAX WP * psi(bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	MAX LEN ft(m)
1 (25)	1⅛ (38)	250 (17.5)	4 (100)	0.6 (0.9)	60 (18)
1½ (38)	2 (50)	250 (17.5)	5 (125)	1.0 (1.5)	60 (18)
2 (50)	2½ (65)	250 (17.5)	6 (150)	1.5 (2.3)	60 (18)
2½ (65)	3 (75)	250 (17.5)	7 (175)	2.1 (3.1)	60 (18)
3 (75)	3½ (88)	250 (17.5)	8 (200)	2.3 (3.5)	60 (18)
4 (100)	4½ (115)	200 (14)	13 (325)	3.0 (4.5)	60 (18)

* 4:1 safety factor

TIFT-Compoflex Composite Hose Products

HYDROCARBON HOSES

Code 901/017: MTBE-MASTER GG

MTBE-Master hoses are specifically designed with PTFE for the transfer of MTBE (methyl tert-butyl ether) and other additives used in today's gasoline formulas.

Typical applications: Ideal for suction and discharge operations at full rated pressure on rail car, tank truck and in-plant transfer operations.

Conveyants handled: 100% MTBE (methyl tert-butyl ether) and 100% aromatics. Refer to the Chemical Compatibility Chart for specific recommendations.

Features:

- Complete product compatibility
- Durable – easy to handle
- Retains flexibility – even at very low temperatures
- Tough, ozone-resistant PVC outer cover – resists dragging wear and abrasion
- Safe and dependable – tested to industry standard 1½ times rated working pressure
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing

Inner Wire	• Galvanized Steel
Outer Wire	• Galvanized Steel
Carcass	• Multiple layers of polypropylene fabric, PTFE, polypropylene and polyester film
Cover	• Abrasion and ozone-resistant PVC-impregnated fabric
Temperature Range	• –22°F(–30°C) to +212°F(+100°C) (refer to Chemical Compatibility Chart)
Color	• Orange with green stripe
Couplings	• Externally swaged, NPT threaded, fixed, floating or reducing flanges and cam-and-grove disconnect couplers supplied to order

Code 901/017 – MTBE-MASTER:

ID in(mm)	OD in(mm)	MAX WP * psi(bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	MAX LEN ft(m)
1 (25)	1½ (38)	250 (17.5)	4 (100)	.6 (.9)	60 (18)
1½ (38)	2 (50)	250 (17.5)	5 (125)	1.0 (2.2)	60 (18)
2 (50)	2½ (65)	250 (17.5)	6 (150)	1.5 (2.3)	60 (18)
2½ (65)	3 (75)	250 (17.5)	7 (175)	2.1 (3.1)	60 (18)
3 (75)	3½ (88)	250 (17.5)	8 (200)	2.3 (3.2)	60 (18)
4 (200)	4½ (115)	200 (14)	13 (325)	3.0 (4.5)	60 (18)

* 4:1 safety factor

HYDROCARBON HOSES

Code 901/401: BOTTOM LOADING HOSE

BOTTOM LOADING HOSES are designed for production refinery and bulk distribution facilities in bottom loading operations.

Typical applications: Bottom loading at production refineries and bulk distribution terminals. Suitable for all hose loading arms.

Conveyants handled: Light distillates – gasoline, diesel fuel, paraffin, kerosene and 100% aromatics, MTBE (methyl tert-butyl ether) and MEK (methyl ethyl ketone). Also suitable for heavier lubricants. Not recommended for corrosive and aggressive chemicals. Refer to the Chemical Compatibility Chart for specific recommendations.

Features:

- Complete product compatibility – for safe handling of all types refined hydrocarbons
- Light and easy to handle – even at low temperatures
- Stays flexible under charge
- Fatigue resistant – doesn't collapse in regular use
- Mobility for easy connect/disconnect
- Safe and dependable – tested to industry standard 1½ times rated working pressure
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing
- Flame retardant cover available on request

Inner Wire	• Galvanized Steel
Outer Wire	• Galvanized Steel
Carcass	• Aromatic resistant barrier layers with multiple layers of polypropylene fabric and film
Cover	• Abrasion-resistant PVC-impregnated fabric
Temperature Range	• –22°F(–30°C) to +212°F(+100°C) (refer to Chemical Compatibility Chart
Color	• Black, Red, Blue, Light Green – other API colors available – with blue stripe
Couplings	• Fixed or floating TTMA flanged ends. Straight or 90 degree elbows available, in carbon or Stainless Steel.

Code 901/401 – BOTTOM LOADING HOSE:

ID in(mm)	OD in(mm)	MAX WP * psi(bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	MAX LEN ft(m)
3 (75)	3½ (88)	200 (14)	8 (200)	2.3 (3.5)	Custom
4 (100)	4½ (115)	200 (14)	13 (325)	3.0 (4.5)	Custom

* 4:1 safety factor

TIFT-Compoflex Composite Hose Products

HYDROCARBON HOSES

Code 954/005: FUELMASTER VRH

FUELMASTER VRH hoses are used for the recovery of volatile hydrocarbon vapors in rail car and truck loading terminals, and unloading at service stations.

Typical applications: Designed for compliance with EPA Stage I requirements for recovering volatile hydrocarbon vapors in rail car or tank truck loading at bulk terminals, and unloading at service stations.

Vapors handled: Hydrocarbons and 100% aromatics

Features:
- Lightweight – easy to handle
- Excellent resistance to kinking or crushing
- Long-term durability
- Very flexible at low temperatures
- Abrasion resistant – stands up to dragging
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing

Inner Wire	• Galvanized Steel
Outer Wire	• Galvanized Steel
Carcass	• Polypropylene bore fabric with multiple aromatic resistant film layers and reinforced fabric
Cover	• Abrasion-resistant PVC-impregnated fabric
Temperature Range	• –22°F(–30°C) to +212°F(+100°C) (refer to Chemical Compatibility Chart)
Color	• Orange
Couplings	• Externally swaged nipples, flanges and threaded; quick couplers; supplied per order

Code 954/005 – FUELMASTER VRH:

ID in(mm)	OD in(mm)	MAX WP psi(bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	MAX LEN ft(m)
3 (75)	3½ (88)	200 (14)	7 (175)	1.8 (2.7)	60 (18)
4 (100)	4½ (115)	150 (10.5)	10 (250)	2.5 (3.8)	60 (18)

* 4:1 safety factor

TIFT-Compoflex Composite Hose Products

MARINE HOSES (HYDROCARBON HOSES)

Code 982: HEAVY DUTY OILMASTER

HEAVY DUTY OILMASTER hoses are designed for dockside and marine terminal transfer of fuels, lubricants and aromatics at rated discharge or at full suction. Meet IMO, BCH, IBC codes and current USCG regulations.

Typical applications: Ideal hose for loading and unloading barges, tankers, bunkering service and other dockside operations at marine terminals. Spiral-wound inner and outer wires provide strength and flexibility to maintain hose integrity under stress and strain of ship and barge movement.

Compliance: IMO type approval for working temperatures –4°F(–20°C) to +140°F(+60°C) and pressure to 150 psi (10.5 bar)

Conveyants handled: Gasoline, diesel fuel, paraffin, kerosene, lubricating oils and 100% aromatics as well as black oils and heavy lubricants and solvents. Rated "suitable" for MTBE (methyl tert-butyl ether) at ambient temperature (see Heavy Duty MTBE-Master, p.16). Not recommended for corrosive and aggressive chemicals. Refer to the Chemical Compatibility Chart for specific recommendations.

Features:

- Complete product compatibility – for safe handling of all types of oil-based, 100% aromatics and other non-aggressive chemicals
- Retains Flexibility – even at very low temperatures
- Tough PVC outer cover – resists dragging wear and abrasion
- Safe and dependable – tested to industry standard 1½ times rated working pressure required by USCG
- Designed, for type approval, to a burst pressure 5 times rated working pressure throughout working temperature range
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing

Inner Wire	• Galvanized Steel
Outer Wire	• Galvanized Steel
Carcass	• Multiple layers of Polypropylene fabric, film and polyester barrier layers
Cover	• Abrasion-resistant PVC-impregnated fabric
Temperature Range	• –22°F(–30°C) to +212°F(+100°C) (refer to Chemical Compatibility Chart)
Color	• Blue with blue stripe
Couplings	• Externally swaged nipples; fixed, floating or reducing flanges and cam-and-grove couplers

Code 982 – HEAVY DUTY OILMASTER:

ID in(mm)	OD in(mm)	MAX WP * psi(bar)	MAX WP ** psi(bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	MAX LEN ft(m)
4 (100)	5 (125)	250 (17.5)	200 (14)	16 (400)	5.3 (8.0)	60 (18)
6 (150)	7 (175)	250 (17.5)	200 (14)	20 (500)	7.3 (11.0)	60 (18)
8 (200)	9½ (238)	250 (17.5)	200 (14)	29 (725)	11.0 (16.5)	50 (15)
10 (250)	11½ (288)	200 (14)	150 (10.5)	36 (900)	14.0 (21)	40 (12)

* 4:1 safety factor
** 5:1 safety factor

TIFT-Compoflex Composite Hose Products

MARINE HOSES (HYDROCARBON HOSES)

Code 982/018: HEAVY DUTY MTBE-MASTER

HEAVY DUTY MTBE-MASTER hoses are engineered to offer the extra chemical resistance of PTFE for the transfer of 100% MTBE (methyl tert-butyl ether) at rated discharge. PTFE layer is protected by layers of special MTBE-resistant, high-strength mono-filament woven polypropylene to eliminate damage caused by inner-wire abrasion in normal flexing and bending. Meet IMO, BCH, IBC codes and current USCG regulations.

Typical applications: For all ship, barge and dockside transfer operations.

Compliance: IMO type approval for working temperatures –4°F(–20°C) to +140°F(+60°C) and pressure to 150 psi (10.5 bar)

Conveyants handled: 100% MTBE (methyl tert-butyl ether) and 100% aromatics. Refer to the Chemical Compatibility Chart for specific recommendations.

Features:

- Retains flexibility – even at very low temperatures
- Tough, ozone-resistant PVC outer cover – resists dragging wear and abrasion
- Safe and dependable – tested to industry standard 1½ times rated working pressure
- Designed, for type approval, to a burst pressure 5 times rated working pressure throughout working temperature range
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing

Inner Wire	• Galvanized Steel, 316 Stainless steel or polypropylene-coated steel available on request
Outer Wire	• Galvanized Steel
Carcass	• Multiple layers of polypropylene fabric, PTFE and polypropylene film, and polyester barrier layer
Cover	• Abrasion and ozone-resistant PVC-impregnated fabric
Temperature Range	• –22°F(–30°C) to +212°F(+100°C) (refer to Chemical Compatibility Chart)
Color	• Blue with high-visibility orange stripe
Couplings	• Externally swaged nipples; fixed, floating or reducing flanges and cam-and-grove couplers

Code 982/018 – HEAVY DUTY MTBE-MASTER:

ID in(mm)	OD in(mm)	MAX WP * psi(bar)	MAX WP ** psi(bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	MAX LEN ft(m)
4 (100)	5 (125)	250 (17.5)	200 (14)	16 (400)	5.3 (8.0)	60 (18)
6 (150)	7 (175)	250 (17.5)	200 (14)	20 (500)	7.3 (11.0)	60 (18)
8 (200)	9½ (238)	250 (17.5)	200 (14)	29 (725)	11.0 (16.5)	50 (15)
10 (250)	11½ (288)	200 (14)	160 (10.5)	36 (900)	14.0 (21.0)	40 (12)

* 4:1 safety factor
** 5:1 safety factor

TIFT-Compoflex Composite Hose Products

MARINE HOSES (HYDROCARBON HOSES)

Code 944: CHEMIFLEX 25 MARINE VRH GG, PG, SG, SS and XX-F

CHEMIFLEX 25 MARINE VRH is specifically designed to meet the demands for light weight, flexibility and strength imposed on these hoses in the marine environment in vapor recovery operations.

Typical applications: Designed to meet USCG requirements for recovering certain chemical and volatile hydrocarbon vapors during ship and barge loading at bulk storage terminals, plants, refineries and other transfer operations in a marine environment.

Compliance: Meet or exceed the requirements of U.S. Coast Guard 33CFR, 154.810, paragraph (d), Vapor Line Connections.

Conveyants handled: Chemical and hydrocarbon vapors

Features:
- Light weight construction – extra durability for dockside vapor recovery operations, easy to handle
- Excellent resistance to kinking or crushing. Very flexible at low temperatures
- Polyester barrier layer – for resistance to 100% aromatics
- Abrasion resistant – stands up to dragging
- Designed, for type approval, to a burst pressure 5 times rated working pressure throughout working temperature range
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing
- Specially marked – for ready identification

Inner Wire	• Galvanized Steel, 316 Stainless steel or polypropylene-coated steel available on request
Outer Wire	• Galvanized or 316 Stainless Steel
Carcass	• Polypropylene fabric and films with polyester barrier layer
Cover	• Abrasion-resistant PVC-impregnated fabric
Temperature Range	• -22°F(-30°C) to +140°F(+60°C) (refer to Chemical Compatibility Chart)
Color	• High-visibility yellow with required red, yellow, red bands – marked "VAPOR" at both ends of hose assembly to USCG regulations
Couplings	• Lightweight fixed or floating #150 drilled flanges with additional 5/8"(16mm) holes drilled in bolt circle to meet USCG regulations

Code 944 – CHEMIFLEX 25 VRH:

ID in(mm)	OD in(mm)	MAX WP * psi(bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	MAX LEN ft(m)
4 (100)	5 (125)	25 (1.8)	9 (225)	1.6 (2.4)	60 (18)
6 (150)	7 (175)	25 (1.8)	17 (425)	3.7 (5.0)	60 (18)
8 (200)	9½ (238)	25 (1.8)	27 (675)	5.3 (8.0)	50 (15)
10 (250)	11½(288)	25 (1.8)	33 (825)	8.0 (12.0)	40 (12)

*5:1 safety factor

TIFT-Compoflex Composite Hose Products

MARINE HOSES (CHEMICAL HOSES)

Code 998: HEAVY DUTY CHEMIFLEX PG, PS
Code 969: HEAVY DUTY CHEMIFLEX SG, SS

HEAVY DUTY CHEMIFLEX hoses are ideal for marine service handling a wide range of aggressive chemicals.

Typical applications: Ideal hose for loading and unloading barges, tankers, bunkering service and other dockside operations at marine terminals. Spiral-wound inner and outer wires provide strength and flexibility to maintain hose integrity under stress and strain of ship and barge movement.

Compliance: Factory fitted assemblies may be ordered with full third party certification of compliance with IMO Section 1.21. All assemblies are manufactured, tested and marked in compliance with US Coast Guard regulations. IMO type approval for working temperatures –4°F(–20°C) to +140°F(+60°C) and pressure to 150 psi (10.5 bar)

Conveyants handled: Highly corrosive acids and alkalis, aldehydes, amines, alephatics, aromatic fuels, chlorinated hydrocarbons, alcohols, esters, ketones, lacquers and petroleum products at rated discharge pressure or at full suction. Not recommended for service for many bromide, chloride or fluoride compounds. Refer to the Chemical Compatibility Chart for specific recommendations.

Features:
- Maximum chemical resistance – for safe handling of aggressive chemicals in dockside operations
- Retains Flexibility – even at very low temperatures
- Abrasion resistant – tough PVC-impregnated fabric cover resists dragging wear and abrasion
- Safe and dependable – tested to industry standard 1½ times rated working pressure
- Choice of galvanized or Stainless Steel outer wire – for maximum durability depending on external environment
- Designed, for type approval, to a burst pressure 5 times rated working pressure throughout working temperature range
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing

Inner Wire	• Polypropylene-coated steel or 316 Stainless Steel
Outer Wire	• Galvanized Steel or 316 Stainless Steel
Carcass	• Multiple layers of heavy duty polypropylene fabric, film and polyester barrier layer
Cover	• Abrasion-resistant PVC-impregnated fabric
Temperature Range	• –22°F(–30°C) to +212°F(+100°C) (refer to Chemical Compatibility Chart)
Color	• Gray (PG, PS) or Light Green (SG, SS)
Couplings	• Externally swaged nipples; fixed, floating or reducing flanges and cam-and-grove couplers

Code 998 – HEAVY DUTY CHEMIFLEX PG, PS:				Code 969 – HEAVY DUTY CHEMIFLEX SG, SS:		
ID in(mm)	OD in(mm)	MAX WP * psi(bar)	MAX WP ** psi(bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	MAX LEN ft(m)
3 (75)	4 (100)	200 (14)	150 (10.5)	11 (275)	3.0 (4.5)	60 (18)
4 (100)	5 (125)	250 (17.5)	200 (14)	16 (400)	5.3 (8.0)	60 (18)
6 (150)	7 (175)	250 (17.5)	200 (14)	20 (500)	7.3 (10.9)	60 (18)
8 (200)	9½ (238)	250 (17.5)	200 (14)	29 (725)	11.0 (16.5)	50 (15)
10 (250)	11½ (288)	200 (14)	150 (10.5)	36 (900)	14.0 (21)	40 (12)

* 4:1 safety factor
** 5:1 safety factor

TIFT-Compoflex Composite Hose Products

MARINE HOSES (CHEMICAL HOSES)
Code 977: HEAVY DUTY
SPECIAL CHEMIFLEX SG, SS

HEAVY DUTY SPECIAL CHEMIFLEX hoses meet the demands of transferring corrosives where the high chemical resistance of Teflon-FEP liners is required.

Typical applications: Ship-to-shore service at marine terminals.

Compliance: All assemblies are manufactured, tested and marked in compliance with US Coast Guard regulations.

Conveyants handled: Very aggressive or corrosive chemicals where a Teflon-FEP liner is mandatory. Chemicals include: butyl chloride, chlorosulphonic acid, oleum and pentachlorethane at rated discharge pressure or at full suction. Refer to the Chemical Compatibility Chart for specific recommendations.

Features:
- FEP lined – handles super-aggressive chemicals
- Flexible – even at low temperatures
- All polypropylene and polyester carcass – maximum chemical resistance
- Abrasion-resistant PVC-impregnated fabric outer cover – greater durability and safety
- Designed, for type approval, to a burst pressure 5 times rated working pressure throughout working temperature range
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing
- Galvanized or Stainless Steel outer wire – for maximum durability depending on external environment

Bore Liner	• Heavy duty Teflon-FEP films and Fluorocarbon bore fabric
Inner Wire	• 316 Stainless Steel (see Chemical Compatibility Chart for specific recommendations)
Outer Wire	• Galvanized Steel (316 Stainless Steel available)
Carcass	• All polypropylene fabrics, films and polyester barrier layers
Cover	• Abrasion-resistant PVC-impregnated fabric
Temperature Range	• –22°F(–30°C) to +212°F(+100°C) (refer to Chemical Compatibility Chart)
Color	• Brown
Couplings	• Externally swaged nipples; fixed, floating or reducing flanges and cam-and-grove couplers

CODE 977 – HEAVY DUTY SPECIAL CHEMIFLEX :

ID in(mm)	OD in(mm)	MAX WP * psi(bar)	MAX WP ** psi(bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	MAX LEN ft(m)
4 (100)	5 (125)	200 (14)	160 (11.2)	16 (400)	5.3 (8.0)	60 (18)
6 (150)	7 (175)	200 (14)	160 (11.2)	20 (500)	7.3 (11.0)	60 (18)

* 4:1 safety factor
** 5:1 safety factor

TIFT-Compoflex Composite Hose Products

CRYOGENIC HOSES

Code 940: CRYOFLEX 50 SS

CRYOFLEX 50 cryogenic hose is specially designed for the safe transfer of fully refrigerated liquefied petroleum gasses and related conveyants.

Typical applications: Liquefied petroleum gasses and related conveyants to –128°F(–88°C).

Certification: Bore sizes 4"(100mm), 6"(150mm) and 8"(200mm) are certified by UK Department of Transport Marine Directorate as complying with IMO Gas Carrier Code.

Conveyants handled: Compatible with a wide range of low temperature fluids including the following per IMO Gas Carrier Code, Chapter XIX: Acetaldehyde, Ammonia (anhydrous), Butadiene, Butane, Butane/Propane mixture, Butylene, Diethylamine, Ethylamine, Ethyl Chloride, Methyl Acetylene/Propadiene, Methyl Bromide, Propane, Polypropylene, Propadiene, Refrigerant Gasses, Vinyl Chloride.

Also suitable for Liquid Ethane to –128°F(–88°C), and liquid CO_2.

Features:

- Maximum compatibility – handles a wide range of low temperature and cryogenic conveyants
- Meet IMO Gas Carrier Code depending on construction (IMO type approval for working temperatures to –58°F(–50°C) and pressures to 150 psi (10.5 bar)
- Reliability – tested to industry standard 1½ times rated working pressures
- Durability – 316 Stainless Steel inner and outer wires for maximum chemical and wear resistance
- Fatigue resistant – developed in association with leading oil and gas companies for maximum durability, safety and performance
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing

Inner Wire	• 316 Stainless Steel
Outer Wire	• 316 Stainless Steel
Carcass	• Multiple layers of Polyamide fabrics and films
Cover	• Nylon cover. Rope lagging for extra protection and insulation available.
Temperature Range	• to –128°F(–88°C) (refer to Chemical Compatibility Chart)
Color	• White with Green stripe
Couplings	• Specifically engineered, factory-fitted end connections to customer specification

Code 940 – CRYOFLEX 50:

ID in(mm)	MAX WP* psi(bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	END FITTING lb(kg)	MAX LEN ft(m)
1 (25)	350 (25)	6 (150)	0.6 (0.9)	–	60 (18)
1½ (38)	350 (25)	7 (175)	1.1 (1.6)	–	60 (18)
2 (50)	350 (25)	8 (200)	1.6 (2.4)	–	60 (18)
3 (75)	350 (25)	10 (250)	3.0 (4.5)	–	60 (18)
4 (100)	300 (21)	20 (500)	5.0 (7.5)	26 (11.8)**	50 (15)
6 (150)	300 (21)	26 (650)	9.3 (14.0)	51 (23.1)**	45 (14)
8 (200)	215 (15)	36 (900)	12.5 (18.8)	71 (32.2)**	40 (12)

* 5:1 safety factor

** End Fitting weights quoted are for ASA 150 welded neck flanges.

TIFT-Compoflex Composite Hose Products

CRYOGENIC HOSES

Code 933: CRYOFLEX 200 SS

CRYOFLEX 200 is designed specifically for the transfer of fully refrigerated liquefied petroleum gasses and related conveyants to –328°F(–200°C).

Typical applications: Fully refrigerated liquefied petroleum gasses and related conveyants to –328°F(–200°C).

Certification: Bore sizes 4"(100mm), 6"(150mm) and 8"(200mm) are certified as complying with paragraphs 5.7 of IMO Gas Carrier Code and 5.3 and 5.7 of IMO Chemical Carrier Code for working temperatures to –155°F (–104°C).

Conveyants handled: Compatible with a wide range of low temperature fluids including the following per IMO Gas Carrier Code, Chapter XIX: Butadiene, Butane, Butane/Propane mixture, Butylene, Diethylamine, Ethylamine, Ethyl Chloride, Methyl Acetylene/Propadiene, Methyl Bromide, Propane, Propadiene, Polypropylene, Refrigerant Gasses, Vinyl Chloride. Liquefied Natural Gas (LNG) and Liquid Nitrogen. Not suitable for conveying Ammonia. Suitable for Liquefied Natural Gas (LNG) at –325°F(–198°C) and Liquid Nitrogen at –380°F(–229°C) and Liquid Ethylene at –220°F(–105°C).

Features:

- Maximum compatibility – handles a wide range of low temperature and cryogenic conveyants
- Meet IMO Gas Carrier Code depending on construction (IMO type approval for working temperatures to –155°F (–104°C) and pressures to 150 psi (10.5 bar)
- Reliability – tested to industry standard 1½ times rated working pressures
- Durability – 316 Stainless Steel inner and outer wires for maximum chemical and wear resistance, inside and out
- Fatigue resistant – developed in association with leading oil and gas companies for maximum durability and safety
- Double end-to-end electrical continuity – prevents static electricity build-up and internal arcing

Inner Wire	• 316 Stainless Steel
Outer Wire	• 316 Stainless Steel
Carcass	• Multiple layers of Polyester fabrics and BOPP films
Cover	• Polyester fabric cover. Rope lagging for extra protection and insulation available.
Temperature Range	• to –328°F(–200°C) (refer to Chemical Compatibility Chart)
Color	• White
Couplings	• Specifically engineered, factory-fitted end connections to customer specification

Code 933 – CRYOFLEX 200:

ID in(mm)	MAX WP* psi(bar)	MIN Bend Radius in(mm)	WEIGHT lb/ft (kg/m)	END FITTING lb(kg)	MAX LEN ft(m)
1 (25)	150 (10.5)	6 (150)	.45 (.48)	–	60 (18)
1½ (38)	150 (10.5)	7 (175)	.8 (1.2)	–	60 (18)
2 (50)	150 (10.5)	8 (200)	1.3 (2.0)	–	60 (18)
3 (75)	150 (10.5)	10 (250)	2.2 (3.3)	–	60 (18)
4 (100)	150 (10.5)	20 (500)	5.0 (7.5)	26 (11.8)**	50 (15)
6 (150)	150 (10.5)	26 (650)	9.3 (13.9)	51 (23.1)**	45 (14)
8 (200)	150 (10.5)	36 (900)	12.5 (18.8)	71 (32.2)**	40 (12)
10 (250)	150 (10.5)	98 (2450)	15.1 (22.3)	121 (54.9)**	33 (10)

* 5:1 safety factor

** End Fitting weights quoted are for ASA 150 welded neck flanges.

TIFT-Compoflex Composite Hose Products

Inspection, testing and maintenance

Inspection, testing and cleaning TIFT-Compoflex Hoses

Visual inspection – check hoses before each operation and before conducting hydraulic tests…

Visual inspection should note:

- dents (collapsed or crushed places) or kinks in hose
- breaks in outer reinforcing wire
- displacement of inner and outer reinforcing wires from normal pitch
- displacement of end fittings and signs of fitting leakage
- wear or damage to end fittings
- chemical attack, deterioration and physical damage to outer cover and carcass

Moderate abrasion to the outer cover is acceptable if reinforcing fabrics below the cover are undamaged.

NOTE: More thorough inspection at least every 6 months.

CAUTION: Hoses with significant defects of the above types should be retired from service.

Hydrostatic testing – annually or more frequently…

Hoses should be tested as follows:

- Drain and thoroughly clean hose per recommended procedure.
- Test electrical continuity per recommended procedure.
- Inspect hoses visually per recommended procedure. Lay hose straight out on supports or on roller bed that allows free movement under pressure.
- Blank off ends. Fill hose completely with water. Make sure trapped air is released by tilting slightly at one end.
- Pressurize assembly to 1½ times the maximum working pressure.
- Hold at this pressure and examine for leaks.
- Test electrical continuity while under pressure. It should be same as for unpressurized hose.
- Release pressure – carefully! Drain hose.
- Test for electrical continuity upon completion of pressure test

NOTE: Thermoplastic composite hoses elongate under pressure compared to rubber hose. Elongation under pressure is not an indication of hose condition or failure of reinforcements.

CAUTION: Do not test hoses that fail visual inspection.

Inspection, testing and maintenance

Electrical continuity tests – every 6 months or more frequently…

To check electrical continuity:
- Lay hose flat on ground.
- Check electrical continuity with battery/bulb continuity indicator or with an ohm meter (resistance should be 10 ohms or less).

NOTE: Hoses that are not electrically continuous should be retired from service.

CAUTION: Hoses that are not electrically continuous present a significant sparking or internal arc over hazard.

Cleaning – after use or prolonged storage, before testing…

Most appropriate cleaning method depends on use and location.
- Thoroughly drain strong acid conveyants, or other reactive conveyants, before cleaning to avoid exothermic reactions.
- Electrically ground hose during cleaning to avoid static charge build-up – especially in the presence of flammable liquids or vapors.
- Flush with fluids like fresh or sea water, hot water, detergents, common solvents at ambient temperatures.
- Drain thoroughly after flushing, especially if sea water is used, to minimize inner wire and fittings corrosion.
- Fully drain of any cleaning fluids/solvents to avoid any chemical reactions when hose is put back in service.

Loose steam or compressed air may be used to clean hoses.
- Hoses must be open-ended (no restrictions).
- Lay hose out flat and straight.
- Do not exceed maximum working temperature to avoid damage to carcass materials.

CAUTION: High pressure steam or high pressure compressed air can be hazardous if hoses are restricted or clogged.

Hose repairs – consult TIFT-Compoflex or your distributor…

Depending on overall condition, it may be possible to repair hoses damaged in service. The repair of polypropylene hoses requires specialized knowledge and procedures.

NOTE: All repairs should be undertaken by trained and authorized personnel.

Hose couplings, adapters and accessories

Fittings...
All fittings are designed assure 100% performance by each hose. Attachment methods are specifically developed for a perfect union and ensure performance up to rated burst pressure.

Double start threads, scrolls or serrations....
engage the inner wire and ensure positive location of the outer wire after swaging. Precise machining assures maintenance of hose film pack and wire integrity.

Raised sealing face...
is vital to a leakproof connection. Our external swage process assures that the hose is permanently engaged and sealed to the fitting.

Comprehensive range of fittings available...
Threaded or flanged stock connections – designed to current US standards.Fixed (weld neck or slip on) and swivel flanges – to ASA 150 and ASA 300 standards. Proprietary quick release couplings, with adapters. Custom fittings to meet particular application and compatibility requirements available.

Materials...
Carbon steel, Stainless Steel, brass, aluminum and polypropylene available to specification.

Slings...
Recommended for support in heavy dock and barge service. Full range of slings are warehoused and readily available.

Scuff guard...
To protect hose from excessive abrasion in dockside and terminal operations. Available in 60-ft (18 meter) coils and can be cut, banded and clamped to hose.

Chemical Compatibility Chart

for TIFT-Compoflex Polypropylene Hoses

The following chart shows the suitability of TIFT-Compoflex polypropylene hoses and end fittings for use with various fluids. The information is based on the best data available. Recommendations are given only as a guide and apply only to the chemical compatability of the hose and end fitting material.

Please consult U.S. Hose Corp's engineering department for recommendations on applications in excess of 140°F (60°C), or for other extreme service conditions outside the scope of catalog ratings. Allowances must be made when selecting hoses for extreme service conditions. It is not advisable to select a hose which will be subjected simultaneously to pressure, temperatures and bending radii at the maximum ratings of the hose.

The description of a hose, or end fitting material, as "suitable" does not ensure that the hose complies with any regulations or operating requirements governing the handling of the chemical or the use of the hose.

A hose conveying a chemical having an oxidizing effect should be checked for internal discoloration particularly if the hose may be used on an application where color contamination is not permissible.

Inner Wire composition of TIFT-Compoflex Polypropylene Hoses

1. **Polypropylene Coated Carbon Steel** - (PG, PGL, PS)
   Such as: Standard Duty Chemiflex PG, Chemiflex PGL and Heavy Duty Chemiflex PG.
2. **T-316 Stainless Steel** - (SG, SS)
   Such as: Standard Duty Chemiflex SG and Heavy Duty Chemiflex SG.
3. **Galvanized Steel** - (GG)
   Such as: Standard Duty Fuelmaster, Heavy Duty Fuelmaster and Heavy Duty Oilmaster GG.

End Fitting Materials

CS **Carbon Steel**

SS **T-316 Stainless Steel**

CA **Copper Alloy**

Polypropylene and **aluminum** end fittings are also available.

Suitability

Hose

A - SUITABLE for use at 140°F (60°C).

B - SUITABLE for use at worldwide AMBIENT temperatures.

C - SUITABLE for INTERMITTENT use at worldwide AMBIENT temperatures.

D - UNSUITABLE or no data available.

End Fittings

• - SUITABLE for the operating conditions applicable to the hose.

X - UNSUITABLE or no data available.

For fluids that are not listed or service conditions outside the scope of these described, please consult U.S. Hose Corp's engineering department.

U.S. Hose Corp. reserves the right to change specifications and ratings without notice.

CHEMICAL	HOSE			FITTINGS		
	1	2	3	CS	SS	CA
Acetaldehyde	C	C	D	X	•	•
Acetic acid (<60%)	A	A	D	X	•	•
Acetic acid (glacial)	B	B	D	X	•	•
Acetic anhydride	B	B	D	X	•	•
Acetoacetic ester	C	C	D	•	•	•
Acetone	A	A	A	•	•	•
Acetone cyanohydrin	B	B	D	•	•	X
Acetonitrile	B	B	B	•	•	•
Acetophenone	B	B	B	•	•	•
Acetylacetone	B	B	B	•	•	•
Acetyl chloride	See Special Chemiflex			X	•	X
Acetylene	Use S/S Hose or PTFE			X	•	X
Acetylene dichloride	B	B	B	•	•	•
Acetylene tetrachloride	C	C	C	•	•	•

CHEMICAL	HOSE			FITTINGS		
	1	2	3	CS	SS	CA
Acrolein (acrylaldehyde)	B	B	B	•	•	•
Acrylamide (<50% in solution)	C	C	D	•	•	X
Acrylic acid	B	B	D	X	•	•
Acrylonitrile	A	A	D	•	•	•
Adipic acid (aqueous)	A	A	A	X	•	•
Adiponitrile	B	B	B	•	•	•
Alkyl acrylate vinyl pyridine copolymer in toluene	C	C	C	•	•	X
Alkyl benzene sulphonic acid	C	C	D	X	•	X
Allyl alcohol	A	A	A	•	•	•
Allyl bromide	C	C	C	•	•	X
Allyl chloride	C	C	C	•	•	X
Alums (aqueous - saturated)	A	A	A	•	•	•
Aluminum salts (excluding halides - saturated)	A	B	D	•	•	X
Aluminum chloride (saturated)	A	D	D	Polypropylene		

Chemical Compatibility Chart

CHEMICAL	HOSE 1	2	3	FITTINGS CS	SS	CA
2-(2-Aminoethoxy) ethanol	C	C	D	•	•	X
Aminoethyl ethanolamine	B	B	D	•	•	•
n-Aminoethylpiperazine	C	C	D	•	•	X
Ammonia (<28% in solution)	A	A	D	•	•	X
Ammonium chloride (saturated)	A	C	D	•	•	X
Ammonium nitrate (<93% in solution)	D	D	D	X	X	X
Ammonium salts (excluding halides - saturated)	A	B	D	•	•	X
Ammonium sulphide (<45% in solution)	C	C	D	X	•	X
Amyl acetate (commercial)	C	C	C	•	•	•
n-Amyl acetate	C	C	C	•	•	X
sec-Amyl acetate	C	C	C	•	•	X
Amyl alcohol	B	B	B	•	•	•
Amyl chloride	C	C	C	•	•	•
Aniline (dedicated hose)	C	B	D	•	•	X
Animal oils	A	A	A	•	•	•
Anisole	C	C	C	X	•	X
Antimony chloride	B	D	D	X	•	X
Aqua regia	C	D	D	Polypropylene		
Aviation fuel	C	C	C	•	•	•
Barium salts (saturated)	A	B	D	•	•	X
Beer	A	A	D	•	•	•
Benzaldehyde	C	C	D	X	•	X
Benzene	C	C	C	•	•	•
Benzene sulphonyl chloride	D	D	D	X	X	X
Benzene sulphonic acid	C	C	D	X	•	X
Benzoic acid	A	A	D	•	•	X
Benzoyl chloride	C	C	C	•	•	•
Benzyl alcohol	A	A	A	•	•	•
Benzyl butyl phthalate	B	B	B	•	•	•
Benzyl chloride	C	C	C	X	•	•
Black liquor	C	C	D	X	•	X
Bleach (<12.5%Cl)	C	C	D	•	•	X
Borax (aqueous)	A	A	A	•	•	X
Boric acid (aqueous)	A	A	D	X	•	•
Brine (saturated)	A	C	D	X	•	X
Bromine water (saturated)	Use S/S Hose or PTFE			X	•	X
Butadiene	B	B	B	•	•	•
Butane liquid	See Cryoflex 50				•	
Butanediol	B	B	B	•	•	•
Butyl alcohol	A	A	A	•	•	•
n-Butyl acetate	C	C	C	•	•	•
n-Butyl acrylate	B	B	B	•	•	•
n-Butylamine	B	B	D	•	•	•
Butyl benzene	B	B	B	•	•	•
Butyl benzyl phthalate	B	B	B	•	•	•
Butyl bromide	See Special Chemiflex			X	•	X
Butyl butyrate	B	B	B	•	•	•
Butyl carbitol	A	A	A	•	•	•
Butyl carbitol acetate	C	C	C	•	•	•
Butyl cellosolve	A	A	A	•	•	•
Butyl cellosolve acetate	C	C	C	•	•	•
Butyl chloride	See Special Chemiflex			X	•	X
Butyl/decyl/cetyl-eicosylmethacrylate mixture	C	C	C	•	•	X
Butylene glycol	A	A	A	•	•	•
n-Butyl ether	B	B	B	•	•	•
Butyl ethyl ether	B	B	B	•	•	•
Butyl methacrylate	C	C	C	•	•	•
Butyl methoxyethyl ether	C	C	C	•	•	•
Butyl phthalate	A	A	A	•	•	•
Butyl stearate	B	B	B	•	•	•
n-Butyraldehyde	C	C	D	•	•	•
Butyric acid (<20%)	B	B	B	•	•	•
Butyrolactone	C	C	C	•	•	•
Calcium salts (excluding halides & hypochlorite - saturated)	A	B	D	•	•	X
Calcium alkyl salicylate solution	A	A	D	•	•	•
Calcium chloride (saturated)	A	C	D	X	•	X

CHEMICAL	HOSE 1	2	3	FITTINGS CS	SS	CA
Calcium hypochlorite (<12.5% CL)	C	C	D	X	•	•
Calcium naphthenate in mineral oil	C	C	C	•	•	X
Camphor oil	C	C	C	•	•	•
Caprylic acid	A	A	A	•	•	•
Carbinols	B	B	B	•	•	•
Carbitol acetate	C	C	C	•	•	•
Carbitols	B	B	B	•	•	•
Carbolic acid	A	A	D	X	•	X
Carbolic oil (middle oil)	C	C	C	•	•	•
Carbon dioxide (liquid)	See Cryoflex 50					
Carbon disulphide	C	C	C	•	•	•
Carbonic acid	A	A	D	X	•	X
Carbon tetrachloride	C	C	C	•	•	•
Cashew nut shell oil	B	B	B	•	•	•
Caustic potash (<50%)	A	B	D	•	•	X
Caustic soda (<50%)	A	B	C	•	•	X
Cellosolve	B	B	B	•	•	•
Cetyl-eicosyl methacrylate mixture	C	C	C	•	•	X
Chlorine	Use S/S Hose or PTFE			X	•	X
Chloroacetic acid (<80%)	B	D	D	Polypropylene		
Chlorobenzene	C	C	C	•	•	•
Chlorobutane	C	C	C	•	•	•
Chloroform	C	C	C	•	•	•
Chlorohydrins (crude)	C	C	C	•	•	X
o-Chloronitrobenzenes	C	C	C	•	•	X
Chloroprene	C	C	C	X	•	•
2- or 3-Chloropropionic acid	C	C	D	X	•	X
Chlorosulphonic acid	Use S/S Hose or PTFE			X	•	X
o- or m- or p-Chlorotoluene	C	C	C	•	•	•
Chlorotoluenes (mixed isomers)	C	C	C	•	•	•
Chrome alum (saturated)	A	A	D	•	•	•
Chromic acid (<50% - aqueous)	C	C	D	X	•	X
Citric acid	A	A	D	X	•	•
Coal tar naphtha	B	B	B	•	•	•
Copper salts (excluding halides - saturated)	A	A	D	•	•	X
Copper chloride (saturated)	A	D	D	Polypropylene		
Creosote (wood or coal tar)	B	B	B	•	•	•
Cresols (<90% - mixed isomers)	A	A	A	•	•	X
Crotonaldehyde	C	C	C	•	•	X
Cumene	B	B	B	•	•	•
Cyclohexane	B	B	B	•	•	•
Cyclohexanol	B	B	B	•	•	•
Cyclohexanone	C	C	C	•	•	•
Cyclohexylamine	B	B	D	•	•	X
Cyclopentane	B	B	B	•	•	•
p-Cymene	B	B	B	•	•	•
Decalin	See Special Chemiflex			X	•	X
Decene	C	C	C	•	•	X
Decyl acrylate	B	B	D	•	•	•
Decyl alcohol	B	B	B	•	•	•
Detergents	A	A	A	•	•	•
Dextrin	A	A	A	•	•	•
Diacetone alcohol	B	B	B	•	•	•
Diaminoethylamine	B	B	C	•	•	•
Diamylamine	B	B	C	•	•	•
Dibromoethane	B	B	D	•	•	•
Dibutylamine	B	B	C	•	•	X
Dibutyl ether	C	C	C	•	•	•
Dibutyl phthalate	B	B	B	•	•	•
Dibutyl sebacate	B	B	B	•	•	•
Dichloroacetic acid	C	D	D	Polypropylene		
o-Dichlorobenzene	C	C	C	•	•	X
Dichlorobutane	C	C	C	•	•	•
Dichlorodifluoromethane	See Cryoflex 50					
1,1-Dichloroethane	C	C	C	•	•	•
Dichloroethylene	C	C	C	•	•	•
Dichloroethyl ether	C	C	C	•	•	X

Chemical Compatibility Chart

CHEMICAL	HOSE 1	2	3	FITTINGS CS	SS	CA
Ethyl propyl ketone	C	C	C	•	•	•
Ethyl silicate	A	A	A	•	•	•
Ethyl sulphate	B	B	B	•	•	•
Ethyl vinyl ether	B	B	B	•	•	•
Fatty acids	A	A	D	X	•	•
Fatty alcohols	A	A	A	•	•	•
Ferrous, ferric salts (excluding halides)	A	B	D	•	•	•
Fluorinated refrigerants	See Cryoflex 50					
Fluorine	Use S/S Hose or PTFE			X	•	X
Fluosilicic acid	A	A	D	X	•	X
Formaldehyde solution (<45%)	A	A	A	•	•	•
Formamide	A	B	D	X	•	•
Formic acid	A	A	D	X	•	•
Freons	See Cryoflex 50					
Fructose	A	A	A	•	•	•
Fruit juices	A	A	D	•	•	•
Fuel oil	B	B	B	•	•	•
Fumaric adduct of rosin (water dispersion)	C	C	C	•	•	X
Furfural	B	B	B	•	•	•
Furfuryl alcohol	B	B	B	•	•	•
Gallic acid solution	A	A	C	•	•	•
Gasoline	B	B	B	•	•	•
Gelatine (aqueous)	A	A	A	•	•	•
Gluconic acid	A	A	C	•	•	•
Glucose (aqueous)	A	A	A	•	•	•
Gluteraldehyde solutions (50% or less)	C	C	C	•	•	X
Glycerine	A	A	A	•	•	•
Glycidyl ester of C^{10} trialkyacetic acid	C	C	C	•	•	X
Glycolic acid (<37% - aqueous)	A	A	D	•	•	•
Glycols (aqueous)	A	A	A	•	•	•
Green sulphate liquor	B	B	D	X	•	X
Heptane	B	B	B	•	•	•
Heptanoic acid	B	B	D	X	•	X
Heptanol (all isomers)	A	A	A	•	•	•
Heptanone	B	B	B	•	•	•
Heptene (mixed isomers)	A	A	A	•	•	•
Hexamethylene diamine	B	B	D	•	•	•
Hexamethyleneimine	C	C	D	•	•	X
Hexamethylene tetramine	B	B	D	•	•	•
1-Hexane	B	B	B	•	•	•
Hexanol	A	A	A	•	•	•
Hexene	A	A	A	•	•	•
Hexyl acetate	C	C	C	•	•	X
Hexylamine	B	B	D	•	•	•
Hexylene glycol	A	A	A	•	•	•
Hydrazine hydrate	B	B	D	X	•	X
Hydrobromic acid (<50%)	A	D	D	Polypropylene or PVDF Coated Steel		
Hydrochloric acid (<37%)	C	D	D	Polypropylene or PVDF Coated Steel		
Hydrofluoric acid (<50%)	C	D	D	Polypropylene or PVDF Coated Steel		
Hydrofluosilicic acid	A	A	D	X	•	•
Hydrogen peroxide (<50%)	B	B	D	X	•	X
Hydrogen sulphide (aqueous - saturated)	A	D	D	X	•	X
Hydroquinone	A	A	A	•	•	X
2-Hydroxyethyl acrylate	C	C	C	•	•	X
Iodine solution	B	D	D	•	•	X
Iron halides	A	D	D	Polypropylene		
Iron salts (excluding halides - saturated)	A	B	D	•	•	•
Isoamyl acetate	B	B	B	•	•	•
Isoamyl alcohol	B	B	B	•	•	•
Isoamyl bromide	B	D	D	X	•	X
Isoamyl butyrate	B	B	B	•	•	•

CHEMICAL	HOSE 1	2	3	FITTINGS CS	SS	CA
Isoamyl chloride	C	C	D	X	•	X
Isoamyl ether	B	B	B	•	•	•
Isobutyl acetate	B	B	B	•	•	•
Isobutyl acrylate	B	B	B	•	•	•
Isobutyl alcohol	A	A	A	•	•	•
Isobutylamine	B	B	D	•	•	•
Isobutyl bromide	B	D	D	X	•	X
Isobutyl chloride	B	D	D	X	•	X
Isobutyl ether	C	C	C	•	•	•
Isobutyl formate	C	C	C	•	•	•
Isobutyl methyl ketone	B	B	B	•	•	•
Isobutyraldehyde	B	B	D	•	•	•
Isodecyl alcohol	A	A	A	•	•	•
Isooctane	C	C	C	•	•	•
Isopentane	C	C	C	•	•	•
Isopentene	C	C	C	•	•	•
Isophorone	B	B	B	•	•	•
Isophorone diamine	C	C	D	•	•	X
Isophorone diisocyanate	C	C	C	•	•	X
Isoprene	B	B	B	•	•	X
Isopropanolamine	B	B	D	•	•	•
Isopropyl acetate	C	C	C	•	•	•
Isopropyl alcohol	A	A	A	•	•	•
Isopropylamine	B	B	D	•	•	•
Isopropyl benzene	B	B	B	•	•	•
Isopropyl chloride	B	D	D	X	•	X
Isopropyl ether	C	C	C	•	•	•
Isopropyl toluene	B	B	B	•	•	•
Isovaleraldehyde	C	C	C	•	•	X
Jams	A	A	B	•	•	•
Jet fuel	C	C	C	•	•	•
Kerosene	B	B	B	•	•	•
Ketones	B	B	B	•	•	•
Lactic acid (<20%)	A	B	D	•	•	•
Lanolin	A	A	A	•	•	•
Lard	A	A	A	•	•	•
Latex (low viscosity)	A	A	A	•	•	•
Lauryl alcohol	B	B	B	•	•	•
Lead salts (saturated)	A	B	D	X	•	X
Ligroin	C	C	C	•	•	•
Limonene	B	B	B	•	•	•
Linseed oil	A	A	A	•	•	•
Lubricating oil	B	B	B	•	•	•
Magnesium salts (saturated)	A	B	D	X	•	X
Maleic acid solution	A	B	D	X	•	•
Maleic anhydride solution	B	B	D	X	•	•
Malic acid solution	B	B	D	X	•	X
Manganese salts (saturated)	A	B	D	X	•	X
MBK (See Methyl butyl ketone)						
MEK (See Methyl ethyl ketone)						
Mercaptobenzothiazol, sodium salt solution	C	C	C	•	•	X
Mercuric chloride (saturated)	A	D	D	Polypropylene		
Mesityl oxide	A	A	B	•	•	•
Methacrylic acid	B	B	D	•	•	•
Methacrylonitrile	C	C	C	•	•	X
Methanol	C	C	C	•	•	X
Methyl acetate	C	C	C	•	•	•
Methyl aceto acetate	C	C	D	X	•	•
Methyl acetone	B	B	B	•	•	•
Methyl acrylate	B	B	B	•	•	•
Methyl alcohol	A	A	A	•	•	•
Methylamine	B	B	C	•	•	•
Methyl amyl acetate	C	C	C	•	•	•
Methyl amyl alcohol	B	B	B	•	•	•
Methyl amyl ketone	B	B	B	•	•	•
Methyl butyl ketone (MBK)	B	B	B	•	•	•
Methyl butyraldehyde	See Special Chemiflex			X	•	X

Chemical Compatibility Chart

CHEMICAL	HOSE			FITTINGS		
	1	2	3	CS	SS	CA
Methyl cellosolve	B	B	B	•	•	•
Methyl cellosolve acetate	C	C	C	•	•	•
Methyl chloride	See Special Chemiflex			X	•	X
Methyl cyanide	B	B	B	•	•	•
Methyl cyclohexane	B	B	B	•	•	•
Methylene bromide	C	C	D	•	•	•
Methylene chloride	C	C	C	•	•	•
Methyl ethyl ketone (MEK)	C	C	C	•	•	•
Methyl ethylpyridine	C	C	C	•	•	X
2-Methyl-5-ethylpyridine	C	C	C	•	•	X
Methyl formate	C	C	C	•	•	•
2-Methyl-2-hydroxy-3-butyne	C	C	C	•	•	X
Methyl isobutyl ketone	C	C	C	•	•	•
Methyl methacrylate	C	C	C	•	•	•
Methyl nitrobenzene	B	B	B	•	•	•
Methyl pentene	B	B	B	•	•	•
2-Methyl-1-pentene	C	C	C	•	•	•
2-Methyl pyridine	B	B	B	•	•	•
4-Methyl pyridine	C	C	C	•	•	X
n-Methyl-2-pyrrolidone	C	C	C	•	•	X
Methyl salicylate	C	C	C	•	•	X
α-Methylstyrene	B	B	B	•	•	•
Methyl tert-butyl ether (MTBE) See also MTBE-Master	C	C	C	•	•	•
Mineral jelly	A	A	A	•	•	•
Mineral oil	B	B	B	•	•	•
Mineral spirits	B	B	B	•	•	•
Molasses	A	A	A	•	•	•
Monoethanolamine	A	A	B	•	•	•
Monoethylamine	B	B	C	•	•	•
Monoisopropanolamine	B	B	D	•	•	•
Mononitrobenzene	B	B	B	•	•	•
Morpholine	B	B	C	•	•	•
Motor fuel anti-knock compounds (unleaded)	B	B	B	•	•	X
MTBE (See Methyl tert-butyl ether)						
Naphtha	B	B	B	•	•	•
Naphtha solvent	C	C	C	•	•	•
Naphthalene solution	A	A	A	•	•	•
Naphthalene (molten)	D	D	D	X	X	X
Neodecanoic acid	C	C	D	•	•	X
Neohexane	B	B	B	•	•	•
Nickel chloride (saturated)	A	D	D	X	•	X
Nickel salts (excluding chlorides - saturated)	A	B	D	X	•	X
Nitrating acid (mixture of sulphuric & nitric acids)	D	D	D	X	X	X
Nitric acid (<10%)	A	A	D	X	•	X
Nitric acid (10%-60%)	C	C	D	X	•	X
Nitric acid (>60%)	See Special Chemiflex			X	•	X
Nitrobenzene	B	B	B	•	•	X
o-Nitrophenol solution	A	A	D	•	•	•
o-Nitrophenal (molten)	D	D	D	X	X	X
1- or 2-Nitropropane	B	B	B	•	•	•
Nitropropane/nitroethane (60/40 mixture)	C	C	C	•	•	X
o-Nitrotoluene	B	B	B	•	•	•
p-Nitrotoluene	D	D	D	X	X	X
Nonane	B	B	B	•	•	•
Nonyl alcohol	B	B	B	•	•	•
Nonylphenol	B	B	C	•	•	•
Octane	B	B	B	•	•	•
Octanol (all isomers)	B	B	B	•	•	•
Octene (all isomers)	C	C	C	•	•	X
Octyl acetate	C	C	C	•	•	•
Octyl acrylate	B	B	B	•	•	•
Olefins (straight chain mixtures)	C	C	C	•	•	X
α-Olefin mixtures	C	C	C	•	•	X
Oils (most commercial)	B	B	B	•	•	•
Oleic acid	B	B	D	X	•	X
Oleum (Sulphuric acid - fuming)	See Special Chemiflex			X	•	X

CHEMICAL	HOSE			FITTINGS		
	1	2	3	CS	SS	CA
Oils (most commercial)	B	B	B	•	•	•
Oxalic acid (<50%)	B	B	D	X	•	X
Palm oil	B	B	B	•	•	•
Paraffin wax	A	A	A	•	•	•
Paraldehyde	C	C	C	•	•	•
Pentachloroethane	C	C	C	•	•	X
1,3-Pentadiene	C	C	C	•	•	•
n-Pentane	B	B	B	•	•	•
Pentanol	A	A	A	•	•	•
Pentanone	B	B	B	•	•	•
Pentene (all isomers)	B	B	B	•	•	•
Perchloric acid (<50%)	B	D	D	X	•	X
Perchloroethylene	C	C	C	X	•	•
Petrolatum	A	A	A	•	•	•
Petroleum	A	A	A	•	•	•
Petroleum ether	C	C	C	•	•	•
Petroleum naphtha	C	C	C	•	•	•
Phenol	A	A	B	X	•	•
Phenoxyethanol	C	C	C	•	•	•
Phenylhydrazine	C	C	D	X	•	X
1-Phenyl-1-xylyl ethane	C	C	C	•	•	X
Phosphoric acid (<95%)	A	A	D	X	•	X
Phosphorus (yellow or white)	D	D	D	X	X	X
Phosphorus oxychloride	C	D	D	Polypropylene		
Phosphorus pentoxide	A	B	D	X	•	X
Phosphorus trichloride	B	D	D	X	•	X
Phthalic acid (<50%)	B	B	D	X	•	X
Phthalic anhydride	D	D	D	X	X	X
Picric acid (1%)	B	B	D	X	•	X
Pinene	B	B	B	•	•	•
Pine oil	B	B	B	•	•	•
Plasticisers (most commercial)	B	B	B	•	•	•
Polyethylene glycol	B	B	B	•	•	•
Polyethylene polyamines	C	C	D	X	•	X
Polymethylene polyphenyl isocyanate	B	B	B	•	•	•
Polypropylene glycol	B	B	B	•	•	•
Potassium halides	A	D	D	X	•	X
Potassium hydroxide solution	C	C	D	X	•	X
Potassium salts (excluding halides - saturated)	A	B	D	X	•	X
n-Propanolamine	C	C	D	X	•	X
Propenoic acid	B	B	D	X	•	•
β-Propiolactone	C	C	C	•	•	•
Propionaldehyde	C	C	C	•	•	•
Propionic acid	B	B	D	X	•	•
Propionic anhydride	C	C	D	X	•	•
Proprionitrile	C	C	C	•	•	X
Propyl acetate	C	C	C	•	•	•
Propyl alcohol	A	A	A	•	•	•
Propylamine	B	B	D	•	•	•
Propylene (tetramer & trimer)	C	C	C	X	•	•
Propylene dimer	C	C	C	•	•	X
Propylene glycol	A	A	A	•	•	•
Propylene glycol monoethyl ether	B	B	B	•	•	•
Propylene glycol monomethyl ether	B	B	B	•	•	•
Propylene oxide (dedicated hose)	B	B	D	•	•	•
Prussic acid	A	A	D	X	•	X
Pyridine	B	B	D	•	•	•
Pyrosulphuric acid	See Special Chemiflex			X	•	X
Rosin	C	C	C	•	•	X
Rosin soap solution (disproportionated)	C	C	C	•	•	X
Salt solutions (excluding halides)	A	B	D	•	•	•
Sea water	A	D	D	X	•	•
Sewage	B	B	D	•	•	•
Silicon oil	A	A	A	•	•	•
Silver halides (saturated)	A	D	D	Polypropylene		
Silver salts (excluding halides - saturated)	A	B	D	•	•	•
Soap solutions	A	A	B	•	•	•

Chemical Compatibility Chart

CHEMICAL	HOSE 1	HOSE 2	HOSE 3	FITTINGS CS	FITTINGS SS	FITTINGS CA
Sodium borohydride/sodium hydroxide solution (15% or less sodium hydroxide)	C	C	D	•	•	X
Sodium chlorate solution (50% or less)	A	A	D	X	•	•
Sodium chloride (saturated)	A	B	D	X	•	•
Sodium chromate	B	B	B	•	•	•
Sodium dichromate solution (70% or less)	C	C	D	X	•	X
Sodium hydrosulphide solution (45% or less)	A	B	D	•	•	•
Sodium hydrosulphide/ammonium sulphide solution	C	C	D	X	•	X
Sodium hypochlorite (<15%)	C	C	D	X	•	X
Sodium hydroxide solution	A	A	C	•	•	•
Sodium salts (excluding halides - saturated)	A	B	D	•	•	•
Stannous, stannic salts (excluding halides)	A	B	D	•	•	•
Starch (aqueous)	A	A	B	•	•	•
Styrene monomer	B	B	B	•	•	•
Sugar syrup	A	A	A	•	•	•
Sulphamic acid	A	A	D	X	•	X
Sulpholane	D	D	D	X	X	X
Sulphonyl chloride	Use S/S Hose or PTFE			X	•	X
Sulphur (molten)	D	D	D	X	X	X
Sulphur chloride	Use S/S Hose or PTFE			X	•	X
Sulphur dioxide	C	C	D	X	•	X
Sulphuric acid (<20%)	B	B	D	•	•	X
Sulphuric acid (20%-85%)	B	D	D	Polypropylene		
Sulphuric acid (>85%)	C	C	D	•	•	X
Sulphuric acid (fuming - see Oleum)						
Sulphuric acid (spent)	C	C	D	X	•	X
Sulphurous acid	B	B	D	•	•	X
Sulphuryl chloride	D	D	D	X	X	X
TAEE (See Tertiary amyl ethyl ether)						
Tall oil (crude and distilled)	A	A	A	•	•	•
Tall oil fatty acid (<20% resin acids)	C	C	C	X	•	X
Tallow	A	A	A	•	•	•
TAME (See Tertiary amyl methyl ether)						
Tannic acid (<10%)	A	A	D	X	•	•
Tartaric acid	A	B	D	X	•	•
Tertiary amyl ethyl ether (TAEE)	C	C	C	•	•	X
Tertiary amyl methyl ether (TAME)	C	C	C	•	•	X
Tetrachloroethane	C	C	C	•	•	•
Tetrachloroethylene	C	C	C	•	•	•
Tetraethylene glycol	B	B	B	•	•	•
Tetraethylene pentamine	C	C	D	•	•	X
Tetrahydrofuran	C	C	C	•	•	•
Tetrahydronaphthalene	C	C	C	•	•	X
Thionyl chloride	Use S/S Hose or PTFE			X	•	X
Tin halides	A	D	D	Polypropylene		
Tin salts (excluding halides - saturated)	A	B	D	•	•	•
Titanium tetrachloride	C	D	D	Polypropylene		
Toluene	C	C	C	•	•	•
Toluene diamine	D	D	D	X	X	X
Toluene diisocyanate	B	B	B	•	•	•
o-Toluidine	B	B	C	•	•	X
Transformer oil	B	B	B	•	•	•
Transmission oil	B	B	B	•	•	•
Tributylamine	B	B	B	•	•	•
Tributyl phosphate	B	B	B	•	•	•

CHEMICAL	HOSE 1	HOSE 2	HOSE 3	FITTINGS CS	FITTINGS SS	FITTINGS CA
Trichloroacetic acid (10% or less)	A	B	D	Polypropylene		
1, 2, 4-Trichlorobenzene	C	C	C	•	•	•
1, 1, 2-Trichloroethane	C	C	C	•	•	•
1, 1, 1-Trichloroethane	C	C	C	•	•	•
Trichloroethylene	C	C	C	•	•	•
Trichloropropane	C	C	C	•	•	•
1, 1, 2-Trichloro-1, 2, 2-trifluoroethane	D	D	D	X	X	X
Tricresyl phosphate (<1% ortho isomer)	B	B	B	•	•	•
Tridecanol	B	B	B	•	•	•
Triethanolamine	B	B	D	•	•	•
Triethylamine	B	B	D	•	•	•
Triethylbenzene	B	B	B	•	•	•
Triethylene glycol	A	A	A	•	•	•
Triethylene tetramine	B	B	D	•	•	•
Triethyl phosphite	C	C	D	X	•	X
Triisopropanolamine	B	B	D	•	•	•
Trimethyl acetic acid	A	A	D	•	•	•
1, 2, 4-Trimethylbenzene	B	B	B	•	•	•
Trimethylhexamethylene diamine (2, 2, 4- & 2, 4, 4-isomers)	C	C	D	•	•	X
Trimethylhexamethylene diisocyanate (2, 2, 4- & 2, 4, 4-isomers)	C	C	C	•	•	X
2, 2, 4-Trimethyl-1, 3-pentanediol-1-isobutyrate	C	C	C	•	•	X
Trimethyl phosphite	C	C	C	•	•	X
Trioctyl phosphate	B	B	B	•	•	•
Tripropylene glycol	A	A	A	•	•	•
Tripropylene glycol monomethyl ether	C	C	C	•	•	•
Tritolyl phosphate	B	B	B	•	•	•
Trixylenyl phosphate	B	B	B	•	•	•
Turpentine	C	C	C	•	•	•
1-Undecene	C	C	C	•	•	X
Undecyl acid	C	C	C	•	•	X
Urea (aqueous)	A	B	B	•	•	X
Urea/ammonia salt solutions	A	B	B	•	•	X
Urea/ammonia solutions	A	B	B	•	•	X
n-Valeraldehyde	C	C	C	•	•	•
Varsol	A	A	A	•	•	•
Vaseline	A	A	A	•	•	•
Vegetable oils	A	A	A	•	•	•
Vinegar	A	A	D	X	•	•
Vinyl acetate	B	B	C	•	•	•
Vinyl chloride monomer (VCM)	See Cryoflex 50					
Vinyl ethyl ether	C	C	C	•	•	•
Vinylidene chloride	C	C	C	•	•	•
Vinyl neodecanoate	C	C	C	•	•	X
Vinyl toluene	B	B	C	•	•	•
Water	A	A	A	•	•	•
White spirit (low aromatic 15% - 20%)	B	B	B	•	•	•
Wine	B	B	D	X	•	X
Xylene	C	C	C	•	•	•
Xylenols	B	B	B	•	•	•
Yeast (aqueous)	A	A	D	X	•	•
Zinc halides	A	D	D	Polypropylene		
Zinc salts (excluding halides - aqueous)	A	B	D	•	•	•