

# **HOSE & HOSE PROTECION**



GAUGES

PIPE FITTINGS/ VALVES

HOSES

SHEET RUBBER

FIRE PROTECTION

COUPLINGS

**DISCLAIMERS** 

National: (800) 231-0734

# **TERMS OF SALE**

#### TERMS:

1/2% 10 Days, net 30 Days

#### FREIGHT:

All shipments are made FOB Seal Fast Inc. or Point of Manufacturer. (Applies to shipments from Houston Warehouse Only) Freight prepaid on 1000 net couplings and accessories, \$1500 Net Couplings, PVC Tubing, Braided Tubing and Fire Hose. Freight prepaid on \$3000 Net Couplings, Rubber Hose, PVC Hose and Sheet Rubber with the exclusion of all PVC Suction including 6" and 8" PVC Suction ONLY orders. If combined with other items freight is prepaid at \$3000 Net, otherwise these items will Not be applied toward prepaid freight. Effective immediately, regardless of invoice value, all uncoupled cut lengths of hoses are shipped FOB Seal Fast Inc. Seal Fast Inc. reserves the right to determine the most Economical shipping method on all prepaid shipments. In addition, Seal Fast Inc. reserves the right to refuse any prepaid shipments exceeding 6% freight cost of the order unless items are added or subtracted to keep said freight cost at or below 6%. Applies to Continental United States, excluding Alaska and Hawaii. Any evidence of shortage must be reported to Seal Fast Inc. within 10 days. Any Damage to hose/hoses, etc. customer is responsible for filing a claim with the delivery carrier within 10 days. Seal Fast Inc. will not issue credit.

ALL UPS prepay and add or collect shipments will endure a \$7.50 shipping and handling fee including All backorders. All drop shipments will endure a \$5.00 fee.

#### WARRANTY:

Products are warranted against defects in workmanship and defects in material. Products having such defects will be replaced or credited as Seal Fast elects. Liability is limited to the invoice value of the defective item. Our responsibility shall not exceed the original purchase price of the defective product. In any event, Seal Fast, Inc. shall not be held responsible for any special or consequential damages.

#### **RETURNED GOODS:**

If for any reason you wish to return goods, please contact Seal Fast Inc. for prior authorization number. Goods must be returned within 30 days and must be in new and resaleable condition. Minimum handling charge is 15%.

All discrepancies in shipment *l* invoice must be reported within 10 days of receipt of goods.

#### PROMPTPAYMENT:

Orders receive preferred treatment when the account is paid promptly. Orders may be held up if any unpaid invoice exceeds 30 days.

#### **MINIMUM INVOICE:**

All invoices are subject to a minimum billing charge of 50.00 net. Returned checks are subject to a \$25.00 service charge.

#### **GENERAL:**

Orders will be accepted subject to delays caused by accident, strike, fire or other causes beyond the control of the seller including failure of seller's suppliers to deliver. Prices, discounts and other specifications are subject to change without notice. All prices are subject to any applicable taxes imposed. The possessions of this price schedule is not to be construed as an offer to sell at the prices shown. Special price for volume quotes will be accepted in writing only.

#### PLEASE NOTE:

Extra care is taken in the preparation of this literature but Seal Fast, Inc. is not responsible for any inadvertent typographical errors or omissions.

## STOCKING WAREHOUSES

SEAL FAST, INC. 5603 Harvey Wilson Dr. Houston, TX 77020

(713) 675-6324 or 800-231-0734 | FAX (713) 675-0146 or 800-681-1515 | E-mail sales@sealfast.com

PORTER ASSOCIATES

1150 Boot Road Unit 1 Downingtown, PA 19335 (610) 518-2301 ASPEN MARKETING, INC 5160 Fox Street Denver, CO 80216

(303) 455-8175 (303) 477-6504 Fax THE WAGNER GROUP

125 State St. P O Box 1683 Elkhart, IN 46516

**(574) 294-2769 (574) 522-2083** Fax

# **DISCLAIMERS**

# **Product Images**

- Seal Fast makes every reasonable effort to show accurate product representation, however pictures are for reference only, and do not necessarily reflect the exact product you will receive.
- Seal Fast reserves the right to alter product appearance without notice. Some product features shown in pictures may no longer be available.

# **Product Specifications**

- Seal Fast is continuously working to provide the best quality for the best price.
- We reserve the right to alter product specifications without notice.

# **Product Usage**

- Our Sales Team will do their best to assist in choosing the best product for a particular application. However, it is ultimately the customer's responsibility to determine the correct product for the correct application.
- Seal Fast will not be held liable for the abuse or misuse of our products in a manner in which they are not designed.
- Seal Fast cannot guarantee the integrity of an assembly if other manufacturers parts are used.

## **Product Availability**

• Seal Fast reserves the right to discontinue products at any time without prior notice.

## **Product Pricing**

- Seal Fast is constantly doing our best to maintain pricing levels. However, circumstances change and while many prices go down, others will increase.
- Please contact your sales associate for current pricing.

Local: (713) 675-6324 II National: (800) 231-0734 Local: (713) 675-6324

• Temp Range: -22° F to +158° F • Tube: EPDM

• Reinforcement: White, Polyester Jacket

ASSEMBLIES p. 253

**FEATURES** 

					POLYESTER	-EPDM LINED	
ID	OD	Length			150	PSI	
			Working PSI	Burst PSI	lbs per roll	Part #	List ft.
1"	n/a	50'	150	450	8	80-132	
1-1/2"	n/a	50'	150	450	11	80-133	
1-1/2	n/a	100'	150	450	22	80-133 100	
2"	n/a	50'	150	450	17	80-134	
2"	n/a	100'	150	450	34	80-134 100	
2-1/2"	n/a	50'	150	450	20	80-135	
Z-1/Z	n/a	100'	150	450	40	80-135 100	
3"	n/a	50'	150	450	28	80-136	
3	n/a	100'	150	450	56	80-136 100	
4"	n/a	50'	150	450	50	80-137	
6"	n/a	50'	150	450	59	80-139	

MILL DOUBLE JACKET /

• Temp Range: -22° F to +158° F

• Tube: SBR • Reinforcement: White, Polyester Double Jacket

ASSEMBLIES p. 253

ECS

HOSES

ONESBR LIN

**FEATURES** 

						R-SBR LINED	
ID	OD	Length			250	0 PSI	
			Working PSI	Burst PSI	lbs per roll	Part #	List ft.
1"	n/a	50'	250	750	7.5	80-100DJ	
1-1/2"	n/a	50'	250	750	11	80-150DJ	
T-1/Z	n/a	100'	250	750	22	80-150DJ 100	
2"	n/a	50'	250	750	17	80-200DJ	
2	n/a	100'	250	750	34	80-200DJ 100	
2 1/2"	n/a	50'	250	750	20	80-250DJ	
2-1/2"	n/a	100'	250	750	40	80-250DJ 100	
3"	n/a	50'	250	750	28	80-300DJ	
3	n/a	100'	250	750	56	80-300DJ 100	
4"	n/a	50'	250	750	50	80-400DJ	
4"	n/a	100'	250	750	56	80-400DJ 100	

MILL DOUBLE JACKET

ID

ourpose hose designed for open end discharge and wash down

• Tube: PVC/NBR П

5% COTTING CHARGE FOR ANY LENGTH HOSE NOT LISTED

• Reinforcement: White, Polyester Double Jacket

ASSEMBLIES p. 253

 $\Box$ 

	OD	Length			250	PSI	
			Working PSI	Burst PSI	lbs per roll	Part #	List ft.
П	n/a	50'	250	660	11	80-150DJPN	
	n/a	100'	250	660	22	80-150DJPN 100	
П	n/a	50'	250	660	17	80-200DJPN	
	n/a	100'	250	660	34	80-200DJPN 100	
П	n/a	50'	250	660	20	80-250DJPN	
	n/a	100'	250	660	40	80-250DJPN 100	

VILL SUSBALIN **FEATURES** 

MILL SINGLE JACKET / SBR LINED

gned for open end discharge and wash down. This hose is totall une to the effects of mildew and requires no drying.

**POLYESTER-SBR LINED** ID OD Length 150 PSI **Working PSI Burst PSI** lbs per roll Part # List ft. 150 450 80-100 n/a 50' 8 150 450 11 80-150 n/a 50' 22 n/a 100' 150 450 80-150 100 50' 150 450 17 80-200 n/a n/a 100' 150 450 34 80-200 100 50' 150 450 20 80-250 n/a 2-1/2" n/a 100' 150 450 40 80-250 100 150 450 28 80-300 50' n/a 100' 150 450 56 80-300 100 n/a n/a 50' 150 450 50 80-400

450

150

**MILL SINGLE JACKET / PVC - NBR** 

LINED

56

• Temp Range: -22° F to +158° F • Tube: PVC/NBR • Reinforcement: White, Polyester Jacket

80-400 100

• Temp Range: -22° F to +158° F

• Reinforcement: White, Polyester Jacket

· Made over sized to accommodate shank couplings

• Tube: SBR

ASSEMBLIES p. 252

ASSEMBLIES p. 252

П

FEATURE.

HOSES

Made over sized to accommodate shank couplings

			The second second				
					POLYE	STER-PVC/NBR LINED	
ID	OD	Length				150 PSI	
			Working PSI	Burst PSI	lbs per roll	Part #	List ft.
1"	n/a	50'	150	450	8	80-100PN	
	n/a	100'	150	450	16	80-100PN 100	
1-1/2"	n/a	50'	150	450	11	80-150PN	
1-1/2	n/a	100'	150	450	22	80-150PN 100	
2"	n/a	50'	150	450	17	80-200PN	
	n/a	100'	150	450	34	80-200PN 100	
2-1/2"	n/a	50'	150	450	20	80-250PN	
2-1/2	n/a	100'	150	450	40	80-250PN 100	
3"	n/a	50'	150	450	28	80-300PN	
	n/a	100'	150	450	56	80-300PN 100	
4"	n/a	50'	150	450	50	80-400PN	
4	n/a	100'	150	450	-	80-400PN 100	

\* 5% CUTTING CHARGE FOR ANY LENGTH HOSE NOT LISTED

**FIRE** 

**FIRE HOSE** 

**SINGLE JACKET - 300# TEST** 

12"SJEPON SERVI

• Temp Range: -22° F to +158° F • Tube: EPDM П • Reinforcement: White Polyester Jacket M

ASSEMBLIES p.254

FEATURES

hose is totally immune to the effects of mildew. It is designed for emergency fire

Service Test Pressures are 1/2 of Acceptance Test Pressures per NFPA 1962 latest edition

				POLYESTER-EPDM LINED										
ID	OD	Length				135	PSI							
			Working PSI	Service Test Pressure	Brust PSI	lbs per roll	Bowl Size	Part #	List ft.					
	n/a	50'	135	150	450	11	1-3/4"	80-075						
1-1/2"	n/a	75'	135	150	450	17	1-3/4"	80-075 75						
	n/a	100'	135	150	450	22	1-3/4"	80-075 100						
	n/a	50'	135	150	450	17	2-5/16"	80-076						
2"	n/a	100'	135	150	450	26	2-5/16"	80-076 100						
	n/a	50'	135	150	450	25	2-13/16"	80-077						
	n/a	75'	135	150	450	38	2-13/16"	80-077 75						
2-1/2"	n/a	100'	135	150	450	50	2-13/16"	80-077 100						
	n/a	75'	135	150	450	38	2-13/16"	80-077 75						

SINGLE JACKET - 300 # TEST - (UL Label)

2"SJ/EPDM (UL) LISTEL

• Temp Range: -22° F to +158° F • Tube: EPDM • Reinforcement: White, Polyester Jacket

ASSEMBLIES p.254

**FEATURES** 

mmune to the effects of mildew. It is designed for emergency fire protection water pressure not exceeding 135 psi working pressure. 100% Polyester Cover

• Service Test Pressures are 1/2 of Acceptance Test Pressures per NFPA 1962 latest edi

POLYESTER-EPDM LINED 135 PSI ID OD Length Working Service Test Brust lbs per roll **Bowl Size** Part # List ft. Pressure PSI n/a 50' 135 150 450 1-3/4" 80-075UL n/a 75' 135 450 16.5 1-3/4" 80-075UL 75 n/a 100' 135 150 450 22 1-3/4" 80-075UL 100 2-13/16" 80-077UL n/a 50' 135 150 450 25 n/a 75' 135 150 450 37.5 2-13/16 80-077UL 75 100' 135 150 450 50 2-13/16" 80-077UL 100 n/a

SINGLE JACKET - 500# TEST

OPSI PE

• Temp Range: -22° F to +158° F • Tube: EPDM

• Reinforcement: White, Polyester Jacket

ASSEMBLIES p.25

**FEATURES** 

HOSES

Single Jacket with a high-grade single ply extruded EPDM liner. This hose is totally immune to the effects of mildew. It is designed for emergency fire protection with water pressure not exceeding 225 psi working pressure. 100% Polyester Cover

• Service Test Pressures-are 1/2 of Acceptance Test Pressures per NFPA 1962 latest edition

				POLYESTER-EPDM LINED									
ID	OD	Length				225	PSI						
			Working PSI	Service Test Pressure	Brust PSI	lbs per roll	Bowl Size	Part #	List ft.				
	n/a	50'	225	250	750	11	1-3/4"	80-083					
1-1/2"	n/a	75'	225	250	750	17	1-3/4"	80-083 75					
	n/a	100'	225	250	750	22	1-3/4"	80-083 100					
2"	n/a	50'	225	250	750	17	2-5/16"	80-084					
2	n/a	100'	225	250	750	26	2-5/16"	80-084 100					
	n/a	50'	225	250	750	25	2-13/16"	80-085					
2-1/2"	n/a	75'	225	250	750	38	2-13/16"	80-085 75					
	n/a	100'	225	250	750	50	2-13/16"	80-085 100					

\* 5% CUTTING CHARGE FOR ANY LENGTH HOSE NOT LISTED

SINGLE JACKET - 500 # TEST - (UL Label)



• Temp Range: -22° F to +158° F • Tube: EPDM

П • Reinforcement: White, Polyester Jacket

ASSEMBLIES p.254

HOSES

#### **FEATURES**

Single Jacket with a high-grade single ply extruded EPDM liner.
This hose is totally immune to the effects of mildew. It is designed for emergency fire protection with water pressure not exceeding 225 psi working pressur

		Length	POLYESTER-EPDM LINED									
ID	OD			225 PSI								
			Working PSI	Service Test Pressure	Brust PSI	lbs per roll	Bowl Size	Part #	List ft.			
1-1/2"	n/a	50'	225	250	750	13	1-3/4"	80-083UL				
1-1/2	n/a	100'	225	250	750	26	1-3/4"	80-083UL 100				
2-1/2"	n/a	50'	225	250	750	25	2-13/16"	80-085UL				
2-1/2	n/a	100'	225	250	750	52	2-13/16"	80-085UL 100				

\* 5% CUTTING CHARGE FOR ANY LENGTH HOSE NOT LISTED

Service Test Pressures are 1/2 of Acceptance Test Pressures per NFPA 1962

WEPOMSERVICE

• Temp Range: -22° F to +158° F • Tube: EPDM • Reinforcement: White, Polyester Double Jacket 

ASSEMBLIES p.254

#### **FEATURES**

not require drying after use & is completely immune to mildew & rot.

• Service Test Pressures are 1/2 of Acceptance Test Pressures per NFPA 1962 latest edition

					POL	YESTE	R-EPDM LI	NED	
ID	OD	Length				27	0 PSI		
			Working PSI	Service Test Pressure	Brust Pressure	lbs per ft	Bowl Size	Part #	List ft.
1-1/2"	n/a	50'	270	300	900	16.5	1-15/16"	80-002	
1-1/2	n/a	100'	270	300	900	33	1-15/16"	80-002 100	
2"	n/a	50'	270	300	900	19	2-5/16"	80-003	
2-1/2"	n/a	50'	270	300	900	28.5	3"	80-130	
2-1/2"	n/a	100'	270	300	900	57	3"	80-130 100	

**DOUBLE JACKET - 800# TEST** "DJEPDNSERVIC

• Temp Range: -22° F to +158° F • Tube: EPDM П • Reinforcement: White, Polyester Double Jacket ASSEMBLIES p. 255

#### FEATURES

HOSES

Service Test Pressures are 1/2 of Acceptance Test Pressures per NFPA 1962 latest edition

					POL	YESTE	R-EPDM L	INED	
ID	OD	Length				36	0 PSI		
			Working PSI	Service Test Pressure	Brust Pressure	lbs per ft	<b>Bowl Size</b>	Part #	List ft.
1-1/2"	n/a	50'	360	400	1200	17	1-15/16"	80-004	
1-1/2	n/a	100'	360	400	1200	33	1-15/16"	80-004 100	
2.1/2"	n/a	50'	360	400	1200	29	3"	80-131	
2-1/2"	n/a	100'	360	400	1200	57	2"	80 <sub>-</sub> 131 100	

\* 5% CUTTING CHARGE FOR ANY LENGTH HOSE NOT LISTED

RED COATED SINGLE JACKET 250PSI PER NFP

500 # TEST

• Temp Range: -22° F to +158° F • Tube: EPDM

> • Reinforcement: White, Polyester Jacket

> ASSEMBLIES p. 255

#### **FEATURES**

gh ozone and abrasion resistance. Wide range of application including power ants, steel plants, mines and all other types of industry needing high visibility and intenance free hose. Recommended 135 psi working pressure.

• Service Test Pressures are 1/2 of Acceptance Test Pressures per NFPA 1962

ID	ID OD	Length		RED POL	YMERIC (		IG / POLYE 25 PSI	STER-EPDM LINED	
			Working PSI	Service Test Pressure	Brust Pressure	lbs per roll	Bowl Size	Part #	List ft.
1-1/2"	n/a	50'	225	250	750	17	1-3/4"	NOVADURA150	
1-1/2	n/a	100'	225	250	750	33	1-3/4"	NOVADURA150 100	
2-1/2"	n/a	50'	225	250	750	29	2-13/16"	NOVADURA250	
2-1/2	n/a	100'	225	250	750	57	2-13/16"	NOVADURA250 100	

YELLOW COATED SINGLE JACKET

# 250PSI PER NEPA

500 # TEST

• Temp Range: -22° F to +158° F • Tube: EPDM П • Reinforcement: White, Polyester Jacket

ASSEMBLIES p. 255

pating having high ozone and abrasion resistance. A wide range applications including power plants, steel plants, mines and all other pes of industry needing high visibility and maintenance free hose.

• Service Test Pressures are 1/2 of Acceptance Test Pressures per NFPA 1962 latest edition

				YELLOW POLYMERIC COATING / POLYESTER-EPDM LINED									
ID	OD	Length		135 PSI									
		J	Working PSI	Service Test Pressure	Brust Pressure	lbs per roll	Bowl Size	Part #	List ft.				
1-1/2"	n/a	50'	135	250	750	17	1-3/4"	NOVADURA150Y					
1-1/2	n/a	100'	135	250	750	33	1-3/4"	NOVADURA150Y 100					
2-1/2"	n/a	50'	135	250	750	29	2-13/16"	NOVADURA250Y	1				
	n/a	100'	135	250	750	57	2-13/16"	NOVADURA250Y 100					

**FORESTRY HOSE - 500 # TEST** 



• Temp Range: -22° F to +158° F • Tube: Proprietary Blend

• Reinforcement: White, Polyester Oxford Weave Jacket

#### **FEATURES**

Service Test Pressures are 1/2 of Acceptance Test Pressures per NEPA 1962 latest edition

123 psi working pressure.				Control restricted at 212 of Acceptance restricts and per Min A 2002 latest edition										
				POLYESTER - PROPRIETARY BLEND										
ID	OD	Length		225 PSI										
ib			Working PSI	Service Test Pressure	Brust Pressure	lbs per roll	Bowl Size	Part #	List ft.					
1 1/2"	n/a	50'	225	250	750	11	1-3/4"	FORESTRY150						
1-1/2"	n/a	100'	225	250	750	22	1-3/4"	FORESTRY150 100						
						" 5% Ct	<del>ט טמודדכ</del>	HARGE FOR AINY LEINGTH HO	JSE NOT LIS					

249

248

# **ASSEMBLIES**

# **FIRE HOSE**

#### **RED NITRILE COVERED PERMALINE - 500# TEST**



• Temp Range: -4° F to +174° F • Cover: Red, Nitrile Ш • Tube: EPDM • Reinforcement: White Polyester Jacke ASSEMBLIES p. 255

• Service Test Pressures are 1/2 of Acceptance Test Pressures per NFPA 1962 latest edition

**FIRE** 

						NITRIL	E - RED		
ID	OD	Length				225	PSI		
			Working PSI	Service Test Pressure	Burst PSI	lbs per roll	<b>Bowl Size</b>	Part #	List ft.
1-1/2"	n/a	50'	225	250	750	10.5	1-3/4"	PERMALINE150	
1-1/2	n/a	100'	225	250	750	21	1-3/4"	PERMALINE150 100	
2-1/2"	n/a	50'	225	250	750	19.5	2-13/16"	PERMALINE250	
2-1/2	n/a	100'	225	250	750	39	2-13/16"	PERMALINE250 100	

#### **YELLOW NITRILE COVERED PERMALINE - 500# TEST**



• Temp Range: -4° F to +174° F • Cover: Yellow, Nitrile П • Tube: EPDM • **Reinforcement:** White, Polyester Jacket ASSEMBLIES p. 255

HOSES

• Service Test Pressures are 1/2 of Acceptance Test Pressures per NFPA 1962 latest edition

					NITRILE - YELLOW								
ID	OD	Length				225	PSI						
			Working PSI	Service Test Pressure	Burst PSI	lbs per roll	Bowl Size	Part #	List ft.				
1-1/2"	n/a	50'	225	250	750	10.5	1-3/4"	PERMALINE150Y					
1-1/2	n/a	100'	225	250	750	21	1-3/4"	PERMALINE150Y 100					
2-1/2"	n/a	50'	225	250	750	19.5	2-13/16"	PERMALINE250Y					

#### \* 5% CUTTING CHARGE FOR ANY LENGTH HOSE NOT LISTED

#### **STANDARD COUPLING METHODS**





Seal Fast internally expanded fire couplings are the industry standard, designed to meet and exceed the needs for long service life.

#### **STANDARD METHODS**









HOSES



#### THREAD TYPES



**American Standard Fire Hose Cou**pling Thread (National Hose Thread also known as National Standard Thread)

Male NH (NST) - Female NH(NST) Female NH (NST) - Male NH (NST)

# **Thread Compatibility Examples:**

Not compatible with other systems. Thread pitch and diameters of fire threads may vary according to local and municipal regulations.

American Standard Straight Pipe for Hose Couplings (National Pipe Straight Hose)

**Thread Compatibility Examples:** 

Male NPSH - Female NPSH, NPSM Female NPSH - Male NPSH, NPT,

NPTF, NPSM

#### DISCLAIMER!

Seal Fast does not stock or necessarily offer assemblies with all of the parts depicted here. The purpose of this page is to give the customer an idea of the various combinations that can be achieved when they shop at Seal Fast. Not all fittings are suitable for all hoses, and not all clamping methods are suitable for all hose/fitting combinations. Seal Fast offers a variety of material options for the fittings as well. Not all materials are suitable for all applications so please consult with your sales representative before ordering.

HOSES

48.1	MILL		
1/2	MILL	CAM LOCK C & E - Aluminum	
MILL	EF		
	∟ength	PART #	PRICE
	25'	80-0752035415AL	
1-1/2"	50'	80-0751002035415AL	
	100'	80-0772035451AL	
	25'	80-0772035451AL	
2"	50'	80-0771002035451AL	
	100'	80-0752035415AL	
2_1 <i> </i> 2"	50'	80-0751002035415AL	
2-1/2	100'	80-0752035415AL	
2"	50'	80-0751002035415AL	
	100'	80-0752035415AL	
4"	100'	80-0751002035415AL	
2-1/2" 3" 4"	100' 50' 100'	80-0752035415AL 80-0751002035415AL 80-0752035415AL	

		PIN LI	<b>UG -</b> Alu	minum Shank		PIN	LUG -	Brass Shank		PIN LUG - Brass Fire Coupling			
	Ī	NPSH		NST		NPSH		NST		NPSH		NST	
ID	Length	PART #	PRICE	PART #	PRICE	PART#	PRICE	PART #	PRICE	PART#	PRICE	PART #	PRICE
1-1/2"	50'	80-150AL150S		80-150AL150S-NST		80-150BSS150		80-150BSS150NHF		80-1502035315		80-1502035310	
1-1/2	100'	80-150100AL150S		80-150100AL150S-NST		80-150100BSS150		80-150100BSS150NHF		80-1501002035315		80-1501002035310	
2"	50'	80-200AL200S											
2	100'	80-100100AL200S						_					
2-1/2"	50'	80-250AL250S		80-250AL250S-NST		80-250BSS250		80-250BSS250NHF		80-2502035360		80-2502035355	
2-1/2	100'	80-250100AL250S		80-250100AL250S-NST		80-250100BSS250		80-250100BSS250NHF		80-2501002035360		80-2501002035355	
3"	50'	80-300AL300S											
3"	100'	80-300100AL300S											
4"	100'	80-400AL400S											

		ROCKER L	<b>UG -</b> Alu	minum Fire Coupling		ROCKER LUG - Brass Fire Coupling				
		NPSH		NST		NPSH		NST		
ID	Length	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE	
1 1/2"	50'	80-1502035415AL		80-1502035410AL		80-1502035415		80-1502035410		
1-1/2"	100'	80-1501002035415AL		80-1501002035410AL		80-1501002035415		80-1501002035410		
2"	50'									
	100'							-		
2 4/2"	50'	80-2502035451AL		80-2502035445AL		80-2502035450		80-2502035445		
2-1/2"	100'	80-2501002035451AL		80-2501002035445AL		80-2501002035450		80-2501002035445		

#### MILL HOSE - SINGLE JACKET - PVC/NBR

	TO CARRY	C-1 WHE											
MIL	Cam Lock C & E - Aluminum				ım	PIN I	L <b>UG -</b> Al	uminum Shank	(	PIN LUG - Brass Shank			
2000	1	STEELS OF THE				NPSF	1	NST		NPSH	1	NST	
ID	Length	PART #	PRICE	PART #	PRICE	PART#	PRICE	PART #	PRICE	PART#	PRICE	PART #	PRICE
1-1/2	50'												
1-1/2	100'							_					
2"	50'												
2"	100'							-					
2-1/2	50'												
2-1/2	100'												
011	50'												
3"	100'												
4"	100'												

		MILL HUSE - SINGLE J	ALKEI -	Ŀ
00 2-	1/2"	CAM LOCK C & E - Aluminum		
	تالله			
114		PART#	PRICE	•
1-1/2"	50'	80-133CEAL		2
1-1/2	100'	80-133100CEAL		2
2"	50'	80-134CEAL		H
	100'	80-134100CEAL		Ē
2-1/2"	50'	80-135CEAL		Ē
2-1/2	100'	80-135100CEAL		Ē
3"	50'	80-136CEAL		
3	100'	80-136100CEAL		
4"	50'	80-137CEAL		

		PIN L	. <b>UG -</b> Alu	ıminum Shank		PIN	LUG - E	Brass Shank		PIN LUG - Brass Fire Coupling			
	ĺ	NPSH		NST		NPSH		NST		NPSH		NST	
ID	Length	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART#	PRICE	PART #	PRICE	PART #	PRICE
1-1/2"	50'	80-133AL150S		80-133AL150S-NST		80-133BSS150		80-133BSS150NHF		80-1332035315		80-1332035310	
1-1/2"	100'	80-133100AL150S		80-133100AL150S-NST		80-133100BSS150		80-133100BSS150NHF		80-1331002035315		80-1331002035310	
2"	50'												
	100'												
2-1/2"	50'	80-135AL250S		80-135AL250S-NST		80-135BSS250		80-135BSS250NHF		80-1352035360		80-1352035355	
2-1/2	100'	80-135100AL250S		80-135100AL250S-NST		80-135100BSS250		80-135100BSS250NHF		80-1351002035360		80-1351002035355	
3"	50'	80-136AL300S											
3	100'	80-136100AL300S											
4"	100'	80-137AL400S											

			ROCKER	LUG - Alu	minum Fire Coupling		ROCKER LUG - Brass Fire Coupling							
			NPSH		NST		NPSH		NST					
	ID	Length	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE				
	1 1/2"	50'	80-1332035415AL		80-1332035410AL		80-1332035415		80-1332035410					
	1-1/2"	100'	80-1331002035415AL		80-1331002035410AL		80-1331002035415		80-1331002035410					
	2"	50'			-									
		100'			-				-					
	2-1/2"	50'	80-1352035451AL		80-1352035445AL		80-1352035450		80-1352035445					
ı	2-1/2	100'	80-1351002035451AL		80-1351002035445AL		80-1351002035450		80-1351002035445					

# MILL HOSE - DOUBLE JACKET - SBR

	CAM LOCK C Aluminum		PIN I	L <b>UG -</b> Alu	ıminum Shank		PIN LUG - Brass Shank					
	)		NPSH		NST		NPSH	NST				
ID Length	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE		
1-1/2" 50'	80-150DJCEAL		80-150DJAL150S		80-150DJAL150-NST		80-150DJBSS150		80-150DJBSS150-NST			
2" 50'	80-200DJCEAL		80-200DJAL200S				80-200DJBSS200		80-200DJBSS200-NST			
2-1/2" 50'	80-250DJCEAL		80-250DJAL250S		80-250DJAL250S-NST		80-250DJBSS250		80-250DJBSS250-NST			

#### MILL HOSE - DOUBLE JACKET - PVC/NBR

		CAM LOCK O		PIN	LUG - Alı	uminum Shank	PIN LUG - Brass Shank					
	1000			NPSH	NST		NPSH NST					
ID	Length	PART #	PRICE	PART#	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE	
1-1/2	50'							80-150DJBSS150		80-150DJBSS150-NST		
2"	50'			_				80-200DJBSS200		80-200DJBSS200-NST		
2-1/2	50'							80-250DJBSS250		80-250DJBSS250-NST		

HOSES

HOSES

1/2"	12												
	2					EPDM	LINED	FIRE HOSE					
	30	ROCKER	LUG - ALI	UMINUM FIRE CC	UPLING	ROCKER L	. <b>UG -</b> BR/	ASS FIRE COU	PLING	PIN LU	G - BRAS	S FIRE COUPLI	NG
		NPSH	SH NST			NPSH		NST		NPSH	1	NST	
ID	Length	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE
1-1/2"	50'	80-0752035415AL		80-0752035410AL		80-0752035415		80-0752035410		80-0752035315		80-0752035310	
1-1/2	100'	80-0751002035415AL		80-0751002035410AL		80-0751002035415		80-0751002035410		80-0751002035315		80-0751002035310	
2-1/2"	50'	80-0772035451AL		80-0772035445AL		80-0772035450		80-0772035445		80-0772035345		80-0772035355	
2-1/2	100'	80-0771002035451AL		80-0771002035445AL		80-0771002035450		80-0771002035445		80-0771002035345		80-0771002035355	

		ADIL	SII	NGLE	<b>JACKET</b>	- 300	TEST#-U	L APF	OVED					
	a SER	MICE					EPDM	LINED	FIRE HOSE					
i	900	SI	ROCKER I	LUG - ALI	JMINUM FIRE CC	UPLING	ROCKER L	. <b>UG -</b> BR	ASS FIRE COUF	PLING	PIN LU	<b>G</b> - BRAS	S FIRE COUPLIN	NG
		-	NPSH		NST		NPSH		NST		NPSH	l	NST	
	ID	Length	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART#	PRICE	PART #	PRICE
	1-1/2"	50'	80-075UL2035415AL		80-075UL2035410AL		80-075UL2035415		80-075UL2035410		80-075UL2035315		80-075UL2035310	
	1-1/2	100'	80-075UL1002035415AL		80-0751002035410AL		80-075UL1002035415		80-075UL1002035410		80-075UL1002035315		80-075UL1002035310	
	2-1/2"	50'	80-077UL2035451AL		80-077UL2035445AL		80-077UL2035450		80-077UL2035445		80-077UL2035345		80-077UL2035355	
	2-112	100'	80-077UL1002035451AL		80-077UL1002035445AL		80-077UL1002035450		80-077UL1002035445		80-077UL1002035345		80-077UL1002035355	

_	-	Ma II		MULE	JALNEI	- 500 7	FIESI							
	2"	3					EPDM	LINED	FIRE HOSE					
	1	3	ROCKER	LUG - ALI	JMINUM FIRE CO	DUPLING	ROCKER I	_ <b>UG -</b> BRA	ASS FIRE COU	PLING	PIN LU	G - BRAS	S FIRE COUPLII	NG
	15		NPSH		NST		NPSI	1	NST		NPSF		NST	
	ID	Length	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART#	PRICE	PART #	PRICE
	1-1/2"	50'	80-0832035415AL		80-0832035410AL		80-0832035415		80-0832035410		80-0832035315		80-0832035310	
	1-1/2	100'	80-0831002035415AL		80-0831002035410AL		80-0831002035415		80-0831002035410		80-0831002035315		80-0831002035310	
	2-1/2"	50'	80-0852035451AL		80-0852035445AL		80-0852035450		80-0852035445		80-0852035345		80-0852035355	
	2-1/2	100'	80-0851002035451AL		80-0851002035445AL		80-0851002035450		80-0851002035445		80-0851002035345		80-0851002035355	

	INCE	<b>51</b>	NGLE	JACKET	- 500 :	# TEST - L	JL APF	POVED					
SER						EPDM	LINED	FIRE HOSE					
)== 5	Same and the same	ROCKER I	LUG - ALI	UMINUM FIRE CC	DUPLING	ROCKER L	.UG - BR/	ASS FIRE COUF	PLING	PIN LU	<b>G -</b> BRAS	S FIRE COUPLIN	NG
	-	NPSH		NST		NPSH		NST		NPSH		NST	
ID	Length	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART#	PRICE	PART#	PRICE	PART #	PRICE
1-1/2"	50'	80-075UL2035415AL		80-075UL2035410AL		80-075UL2035415		80-075UL2035410		80-075UL2035315		80-075UL2035310	
1-1/2	100'	80-075UL1002035415AL		80-0751002035410AL		80-075UL1002035415		80-075UL1002035410		80-075UL1002035315		80-075UL1002035310	
2-1/2"	50'	80-077UL2035451AL		80-077UL2035445AL		80-077UL2035450		80-077UL2035445		80-077UL2035345		80-077UL2035355	
2-1/2	100'	80-077UL1002035451AL		80-077UL1002035445AL		80-077UL1002035450		80-077UL1002035445		80-077UL1002035345		80-077UL1002035355	

		<b>DOUE</b>	BLE JAC	KET - 600 # TES	T				
12"	10			EPI	OM LINED	FIRE HOSE			
		PIN	LUG - BRASS	FIRE COUPLING		ROCKER	LUG - BRAS	SS FIRE COUPLING	
100	3	NPSH		NST		NPSH		NST	
ID	Length	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE
1-1/2"	50'			80-0022012110		80-0022015915		80-0022015910	
1-1/2	100'			80-0021002012110		80-0021002015915		80-0021002015910	
2-1/2"	50'			80-1302012165				80-1302015953	
Z-1/Z	100'			80-1301002012165				80-1301002015953	

-0	VICE	DOUBL	E JACK	ET - 800 # TEST					
SER		01		EPI	DM LINED	FIRE HOSE			
um S	di di	PIN L	UG - BRASS	FIRE COUPLING		ROCKER	LUG - BRA	SS FIRE COUPLING	
		NPSH		NST		NPSH		NST	
ID	Length	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE
1-1/2"	50'			80-0042012110		80-0042015915		80-0042015910	
1-1/2	100'			80-0041002012110		80-0041002015915		80-0041002015910	
2-1/2"	50'			80-1312012165				80-1312015953	
2-1/2	100'	-		80-1311002012165				80-1311002015953	

	-			part years years	The Court								
-0	0	NO NO	VADU	RA SINGL	E JAC	CKET - 50	00 # TE	ST - RED					
Mex						RED CC	ATED F	IRE HOSE					
WEP	0	ROCKER	LUG - ALI	JMINUM FIRE CC	UPLING	ROCKER L	.UG - BRA	SS FIRE COUF	PLING	PIN LUC	• BRASS	FIRE COUPLI	NG
		NPSH		NST		NPSH		NST		NPSF		NST	
ID	Length	PART #	PRICE	PART #	PRICE	PART#	PRICE	PART #	PRICE	PART#	PRICE	PART #	PRICE
1-1/2	50'	N1502035415AL		N1502035410AL		N1502035415		N1502035410		N1502035315		N1502035310	
1-1/2	100'	N1501002035415AL		N1501002035410AL		N1501002035415		N1501002035410		N1501002035315		N1501002035310	
2-1/2	50'	N2502035451AL		N2502035445AL		N2502035450		N2502035445		N2502035360		N2502035355	
2-1/2	100'	N2501002035451AL		N2501002035445AL		N2501002035450		N2501002035445		N2501002035360		N2501002035355	

-		May No	IVADL	JRA SINGL	E JAC	CKET - 50	O # TE:	ST - YELU	LOW				
UR	A					YELLOW C	OATED	FIRE HOSE					
	1	ROCKI LUG - A		M FIRE COUPLING	3	ROCKER LU	<b>JG -</b> BRAS	SS FIRE COUP	LING	PIN LUC	G - BRAS	S FIRE COUPLI	ING
JEST	`>	NPSH		NST		NPSH		NST		NPSF	1	NST	
ID	Length	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE
1-1/2"	50'	NY1502035415AL		NY1502035410AL		NY1502035415		NY1502035410		NY1502035315		NY1502035310	
1-1/2	100'	NY1501002035415AL		NY1501002035410AL		NY1501002035415		NY1501002035410		N1501002035315		N1501002035310	
2-1/2"	50'	NY2502035451AL		NY2502035445AL		NY2502035450		NY2502035445		NY2502035360		NY2502035355	
2-1/2	100'	NY2501002035451AL		NY2501002035445AL		NY2501002035450		NY2501002035445		NY2501002035360		NY2501002035355	

		PERMA	LINE - 5	00 # TEST - RED											
E-ME	200		NITRILE COVERED FIRE HOSE												
40	216	PIN	LUG - BRASS	FIRE COUPLING		ROCKER LUG - BRASS FIRE COUPLING									
6 7	-	NPSH		NST		NPSH		NST							
ID	Length	PART #	PRICE	PART#	PRICE	PART#	PRICE	PART #	PRICE						
1-1/2"	50'	P1502035315		P1502035310		P1502035415		P1502035410							
1-1/2	100'	P1501002035315		P1501002035310		P1501002035415		P1501002035410							
2-1/2"	50'	P2502035360		P2502035355		P2502035450		P2502035445							
2-1/2	100'	P2501002035360		P2501002035355		P2501002035450		P2501002035445							

	n o	PERMA	LINE - 5	00	.ow				
2-1/2	231	<b>A</b>		NITRILI	COVERE	D FIRE HOSE			Ì
m 5	M	PIN	LUG - BRASS	FIRE COUPLING		ROCKER	R LUG - BRA	SS FIRE COUPLING	
114	Jan San	NPSH		NST		NPSH		NST	
ID	Length	PART #	PRICE	PART #	PRICE	PART #	PRICE	PART #	PRICE
1-1/2"	50'	PY1502035315		PY1502035310		PY1502035415		PY1502035410	
1-1/2	100'	PY1501002035315		PY1501002035310		PY1501002035415		PY1501002035410	
2-1/2"	50'	PY2502035360		PY2502035355		PY2502035450		PY2502035445	
2-1/2	100'	PY2501002035360		PY2501002035355		PY2501002035450		PY2501002035445	

13

## **CORROSION RESISTANCE OF COUPLING MATERIALS**

**CAUTION:** The following data has been compiled from generally available sources end should not be relied upon without consulting and following the specific recommendations of the manufacturer regarding particular coupling materials.

RATINGS: 1. 2.	. Excellent . Good	<ol><li>Fair Conditional</li><li>x. Not Satisfactory</li></ol>		NOTES:	No rationg in	dicates no	data availab	ole			
	AGENT		Mall. From Steel	Brass	Bronze	Aluminum	Glass	Stainless 410, 416, 430	Stainless 302, 202, 304, 308	Stainless 316	Monel
Aceta	ate, Solvent	ts, Crude		3				2	1	1	2
Acet	tate, Solven	nts, Pure		1	1	1		1	1	1	1
	Acetic Ac	cid	Χ	X	X	2	1	X	2	2	2
Ac	cetic Acid	Vapor	Χ	X		3		Χ	2	2	3
A	cetic Anhy	dride	Χ	Х		2		Х	2	2	2
	Acetone	9	1	1	1	1	1	1	1	1	1
	Acetylen	e	1	2		1		1	1	1	2
	Alcohols	S	1	2		1		1	1	1	1
Al	luminum Sı	ulfate	Χ	3	3	3	1	Χ	3	2	2
	Alums		Χ	3	2	3	1	X	3	2	2
	Ammonia (	Gas	1	X	3	1	3	1	1	1	X
Am	ımonium Cl	hloride	1	3		1*		3	3	1	1
Amr	monium Hy	droxide	2	Χ		2		1	1	1	3
An	mmonium N	litrate	1	X		2		1	1	1	3
Ammonium	Phosphate	e (Ammoniacal)		Χ				1	1	1	2
Ammoniı	um Phosph	ate (Neutral)		3				1	1	1	2
Ammon	nium Phosp	hate (Acid)		3				3	2	1	2
An	nmonium S	Sulfate	1	3				2	1	1	2
	Asphalt		1	2				2	1	1	1
	Beer		2	2	1	1		Χ	1	1	1
Ве	eet SugarLi	quors	1	2		1		2	1	1	1
В	Benzene, Be	enzol	1	1	1	1	1	1	1	1	1
Benzine	e (petroleur	m-naphtha)	1	1		1		1	1	1	1
	Borax		2	2				1	1	1	1
	Boric Aci	id	Χ	3		1		3	2	1	1
В	utane, Buty	ylene	1	1	1	1		1	1	1	1
	Butadien	ie		1				1	1	1	1
C	alcium Bisu	ulfate		Χ				Χ	2	1	X
Calo	cium Hypod	chlorite	3	3	3	Χ	3	Χ	3	2	3
Ca	ne Sugar L	iquors	1	2		1		2	1	1	1
Car	rbon Dioxid	le (Dry)	1	1		1		1	1	1	1
Carbon Dio	xide (Wet &	& Aqueous Sol)	2	3		2		2	1	1	2
С	Carbon Disu	ılfide	2	3		2		2	1	1	3
Car	rbon Tetrac	hloride	3	1	2	3	1	1	1	1	1
	Chlorine (D	Dry)	2	2	2	1	2	2	2	2	1
	Chlorine (V	Vet)	Χ	X	3	X	2	X	X	3	3
	Chromic A	cid		Χ	Χ	Χ	1	3	2	2	3
	Citric Aci	id	Χ	3		1		3	X	1	2
(	Coke Oven	Gas	1	3		2		1	1	1	2
	Copper Sul	fate	Χ	X		X		1	1	1	3
	Core Oil	S		1	1			1	1	1	1
	Cottonseed	l Oil	1	1	1	1		1	1	1	1
	Creosot	e	2	3		1		1	1	1	1
	Ethers		2	1		1		1	1	1	1
E	Ethylene Gl	ycol	2	2				1	1	1	1
	Ferric Chlo		Χ	X	X	X	1	X	Χ	Χ	Χ
	Ferric Sulf		Χ	Х		X		1	1	1	3
	Formaldeh		2	2		2		1	1	1	1

\*3 to X at high temperatures. Local: (713) 675-6324 Chemical Chart is reprinted from 1996 RMA Hose Handbook 14 National: (800) 231-0734

#### **CORROSION RESISTANCE OF COUPLING MATERIALS**

**CAUTION:** The following data has been compiled from generally available sources end should not be relied upon without consulting and following the specific recommendations of the manufacturer regarding particular coupling materials.

RATINGS: 1. Excellent 3. Fair Conditional	NO				ta available	nateriais.			
2. Good x. Not Satisfactory	NO	TES. NOT	ationy maic	ales no ua	la avaliable				
AGENT	Mall. From Steel	Brass	Bronze	Aluminum	Glass	Stainless 410, 416, 430	Stainless 302, 202, 304, 308	Stainless 316	Monel
Formic Acid	X	2		X		Χ	2	1	2
Freon	3	1	1	1		1	1	1	1
Furfural	1	2		1		1	1	1	1
Gasoline (Sour)	3	3		3		3	1	1	Χ
Gasoline (Refined)	1	1	1	1		1	1	1	1
Gelatin	1	3		1		1	1	1	1
Glucose	1	1		1		1	1	1	1
Glue	1	3		1		1	1	1	1
Glycerine or Glycerol	1	2		1	4	1	1	1	1
Hydrochloric Acid	X	X	Χ	X	1	X	X	X	X
Hydroflyorio Apid	3	X	2	1 X	V	3 X	1	1	2
Hydrofluoric Acid	X	3	3	X	X		X	X	X 1
Hydrogen Fluoride Hydrogen	1	1		1		X 1	X 1	3	1
Hyrogen Peroxide	X	X		1		1	2	1	2
Hydrogen Sulfide (Dry)	3	3		2		3	2	1	3
Hydrogen Sulfide (Wet)	3	3		2		3	2	1	3
Lacquers and Lacquer Solvents	3	2		1		1	1	1	1
Lactic Acid	X	2		3			3	2	1
Lime-Sulfur	2	X		2		1	1	2	
Linseed Oil	1	1		1		_	1	1	1
Magnesium Chloride	3	3		X		3	2	1	1
Magnesium Hydroxide	1	2		X		1	1	1	1
Magnesium Sulfate	2	2		3		1	1	1	1
Mercuric Chloride	3	X		X		X	Х	3	Χ
Mercury	1	Χ		Χ		1	1	1	2
Milk	3	3		1		2	1	1	3
Molasses	2	Χ		2		2	1	1	1
Natural Gas	1	2		1		1	1	1	1
Nickel Chloride		Χ		Χ		Χ	3	2	2
Nickel Sulfate		3		Х		3	2	1	1
Nitric Acid	X	X	X	3	1	2	2	2	Χ
Oleic Acid	2	3		1		2	2	1	1
Oxalic Acid	3	3		2		3	2	1	1
Oxygen	1	1	1	1		1	1	1	1
Palmitic Acid	1	3		1		2	2	1	1
Petroleum Oils (Sour)		3				3	1	1	Χ
Petroleum Oils (Refined)	1	1	1	1		1	1	1	1
Phosphoric Acid 25%	3	Χ		3	3	Χ	3	1	2
Phosphoric Acid 25-50%	X	X		Χ	3	Χ	X	2	2
Phosphoric Acid 50-85%	X	X		X	Χ	X	X	2	2
Picric Acid	3	X		3		2	1	1	Χ
Potassium Chloride	2	3		3		3	2	1	1
Potassium Hydroxide	3	X		X		1	1	1	1
Potassium Sulfate	2	2		1		1	1	1	1
Propane	1	1				1	1	1	1
Rosin (Dark)	1	2			1	1	1	1	1
Rosin (Light)		Χ		1		1	1	1	2

\*3 to X at high temperatures.

Chemical Chart is reprinted from 1996 RMA Hose Handbook 15 National: (800) 231-0734

#### CORROSION RESISTANCE OF COUPLING MATERIALS

**CAUTION:** The following data has been compiled from generally available sources end should not be relied upon without consulting and following the specific recommendations of the manufacturer regarding particular coupling materials.

RATINGS: 1. Excellent 2. Good 2. Not Satisfactor 2. Good 2. Not Satisfactor 3. Fair Condition 2. Good 2. Not Satisfactor 3. Fair Condition 2. Good 2. Representation 2. Good 2. Representation 3. Fair Condition 3		NOTES: N	o rationg in	dicates no d	data availat	ole			
AGENT	Mall. From Steel	Brass	Bronze	Aluminum	Glass	Stainless 410, 416, 430	Stainless 302, 202, 304, 308	Stainless 316	Monel
Shellac		2		2		1	1	1	1
Sludge Acid		Χ				Χ	Χ	3	2
Soda Ash (Sodium Carbonate)	1	2		Χ		1	1	1	1
Sodium Bicarbonate	3	1		Χ		1	1	1	1
Sodium Bisulfate	Χ	3		3		Χ	1	1	1
Sodium Chloride	2	3	2	X	1	3	2	1	1
Sodium Cyanide	2	X		Χ		1	1	1	2
Sodium Hydroxide	3	X	3	Χ	Χ	2	2	2	1
Sodium Hypochlorite	Χ	Χ		Χ		Χ	3	2	3
Sodium Metaphosphate	X	3		1		2	1	1	1
Sodium Nitrate	1	3		1		1	1	1	1
Sodium Perborate	3	3		1		1	1	1	1
Sodium Peroxide	3	3		1		1	1	1	1
Sodium Phosphate (Alkaline)		3				1	1	1	1
Sodium Phosphate (Neutral)		2				1	1	1	1
Sodium Phosphate (Acid)		2				Χ	2	1	1
Sodium Silicate	1	3		X		1	1	1	1
Sodium Sulfate	1	2		3		1	1	1	1
Sodium Sulfide	1	X				1	1	1	2
Sodium Thiosulfate (Hypo)	3	X		Χ		1	1	1	2
Stearic Acid	3	3		3		2	2	1	1
Sulfate Liguors		X				1	1	1	2
Sulfur	2	X		2		2	2	1	3
Sulfur Chloride	X	Χ				Χ	3	2	2
Sulfur Dioxide (Dry)	2	1		1		1	1	1	1
Sulfur Dioxide (Wet)		X		_		X	2	1	X
Sulfuric Acid 10%	X	X	3	3		X	X	2	2
Sulfuric Acid 10-75%	X	X	X	X		X	X	X	2
Sulfuric Acid 75-95%	3	X	X	X		3	3	2	3
Sulfuric Acid 95%	2	X	X	Α		2	2	2	X
Surlfurous Acid	X	X	7.	X		X	3	2	X
Tannic Acid	3	3	1	X			1	1	1
Tar	1	2	_	1		2	1	1	1
Toluene, Toluol	1	1		1		1	1	1	1
Trichlorethylene	3	1		3		1	1	1	1
Turpentine		3		1		3	1	1	1
Varnish	2	2		_		1	1	1	1
Varingii Vegetable Oils	1	2		1		1	1	1	1
Vinegar	3	3		3		3	2	1	2
Water (Acid Mine Water)	3	X		3		2	1	1	3
Water (Fresh)	3	1		1		1	1	1	1
Water (Fiesh)	3	3	2	X		3	2	2	1
Whiskey	X	2	_			3	1	1	2
Wines	X	2				3	1	1	2
Xylene, Xylol	2	1		1		1	1	1	1
Zinc Chloride	X	X		X		3	2	1	1
Zinc Sulfate	3	3		3		3	2	1	1

\*3 to X at high temperatures.

Local: (713) 675-6324

Chemical Chart is reprinted from 1996 RMA Hose Handbook

National: (800) 231-0734

16

#### **OIL & GASOLINE RESISTANCE**

Rubber hose is used to convey petroleum products both in the crude and refined stages. The aromatic content of refined gasoline is often adjusted to control the octane rating. The presence of aromatic hydrocarbons in this fuel generally has a greater effect on rubber components than do aliphatic hydrocarbons. Aromatic materials in contact with rubber tend to soften it and reduce its physical properties. For long lasting service, the buyer of gasoline hose should inform the hose manufacturer of the aromatic content of the fuel to be handled so that the proper tube compound can be recommended for the specific application.

The effects of oil on rubber depend on a number of factors that include the type of rubber compound, the composition of the oil, the temperature and time of exposure. Rubber compounds can be classified as to their degree of oil resistance based on their physical properties after exposure to a standard test fluid. In this RMA classification, the rubber samples are immersed in IRM 903 oil at 100°C for 70 hours. (See ASTM Method D-471 for a detailed description of the oil and the testing procedure.) As a guide to the user of hose in contact with oil, the oil resistance classes and a corresponding description are listed.

## PHYSICAL PROPERTIES AFTER EXPOSURE TO OIL:

CLASS A	(HIGH OIL RESISTANCE)	VOLUME CHANGE MAXIMUM +25%	TENSILE STRENGTH RETAINED 80%
CLASS B	(MEDIUM/HIGH OIL RESISTANCE)	+65%	50%
CLASS C	(MEDIUM OIL RESISTANCE)	+100%	40%

#### **CHEMICAL RECOMMENDATIONS**

The materials being handled by flexible rubber hose are constantly increasing in number and diversity. To assist in the selection of the proper elastomer for the service conditions encountered, the following table has been prepared. The reader is cautioned that it is only a guide and should be used as such, as the degree of resistance of an elastomer with a particular fluid depends upon such variables as temperature, concentration, pressure, velocity of flow, duration of exposure, aeration, stability of the fluid, etc. Also variations in elastomer types and special compounding of stocks to meet specific service conditions have considerable influence on the results obtained. When in doubt, it is always advisable to test the tube compound under actual service conditions. If this is not practical, tests should be devised that simulate service condtions or the hose manufacturer contacted for Recommendations.

The following table lists the more commonly used materials, chemicals, solvents, oils, etc. The recommendation are based on room temperature and pressure conditions normally recommended for the particular type of hose being used. Where conditions beyond this can be met readily, they have been so indicated; where conditions are not normal and cannot be readily met, the hose manufacturer should always be consulted. The table does not imply conformance to the Food & Drug Administration requirements of Federal or State Laws when handling food products.

#### TABLE OF CHEMICAL, OIL & SOLVENT RESISTANCE OF HOSE:

**WARNING:** The following data has been compiled from generally available sources and should not be relied upon without consulting and following the hose manufacturer's specific chemical recommendations. Neglecting to do so might result in failure of the hose to fulfill its intended purpose, and may result in possible damage to property and serious bodily injury

#### **RESISTANCE RATING**

- A Good Resistance, usually suitable for service.
- F Fair Resistance, the chemical has some deteriorative effects, but the elastomer is still adequate for moderate service.
- C- Depends on Condition, moderate service may be possible if chemical exposure is limited or infrequent.
- X-Not recommended, unsuitable for service.
- I Insufficient Information, not enough data available at the time of publication to determine rating.

#### RELASTOMERS/PLASTICS

NR - Natural Rubber **IR** - Isoprene, synthetic **SBR** - Styrene-butadiene

**CR-**Chloroprene **NBR** - Nitrile-butadiene

IIR-Isobutene-isoprene **CSM** - Chloro-sulfonylpolyethylene

diene-terpolymer MQ - Dimethyl-polysiloxane FKM-Fluoracarbon rubber **CM** - Chloro-polyethylene ECO/CO-Ephichlorohydrin

**EPDM** - Ethylene-propylene-

**EXLPE-** Chloro-sulfonvlpolyethylene

National: (800) 231-0734 Local: (713) 675-6324 17

# **TECHNICAL DATA**

## ELASTOMERS

Local: (713) 675-6324

Commonly used Elastomers:	Special Elasto											omers:		
MATERIAL	NR lor IR	SBR	CR	NBR	IIR	CSM	EPDM	MQ	FKM	СМ	ECO CO	XLF		
							38°C) Un			Specifie				
Acetic Acid, Dilute, 10%	F	С	С	С	Α	С	А	Α	X	Α	F	Α		
Glacial	С	Χ	X	Х	F	С	F	F	Х	Α	X	Α		
Anhydride	С	С	F	F	F	А	1	С	X	Α	X	F		
Acetone	А	Α	F	Х	Α	F	А	Α	X	Α	X	F		
Acetylene	Α	А	F	А	Α	F	А	С	Α	I	I			
Air 150°F (65°C)	Α	Α	Α	Α	Α	Α	Α	Α		Α	Α	-		
Aluminum Chloride 150°F (65°C)	Α	Α	Α	Α	Α	Α	Α	A	Α	Α	Α	1		
Aluminum Fluoride 150°F (65°C)	Α	Α	Α	Α	Α	Α	Α	F			A	/		
Aluminum Sulfate 150°F (65°C)	A	Α	Α	Α	Α	A	A	A	А	Α		A		
Alums 150°F (65°C)	A	A	A	A	A	A	A	A	V	A	ı	A		
Ammonia Gas	A	A	A	A	A	A	A	A	X	A	1	ļ A		
Ammonium Chloride Ammonium Hydroxide	A C	A F	A F	A F	A	A	A	C A	A	A	A			
Ammonium Nitrate	A	A	A	A	A	A	A	A	А	I	A	ļ A		
	A	A	A	A	A	A	A	A		A	A	/		
Ammonium Phosphate, monobasic dibasic	A	A	A	A	A	A	A	A		A I		/		
tribasic	A	A	A	A	A	A	A	A		'		/		
Ammonium Sulfate	A	A	A	A	A	A	A	A	A	A		,		
Amyl Acetate	F	X	X	X	F	X	A	A	X	C	X	/		
Amyi Acetate	Г	^	^	^	Г	^	А	A	^	C	^	,		
Amyl Alcohol	А	Α	Α	Α	Α	Α	А	Α	Α	А	Α	<i>F</i>		
Aniline, Aniline Oil	X	X	С	X	Α	X	C	С	Α	C	X	,		
Aniline Dyes	F	F	F	F	A	F	С	С						
Asphalt	X	X	F	F	X	F	X		Α		A	)		
Barium Chloride 150°F (65°C)	A	Α	A	A	Α	A	Α	Α	Α	Α	Α	,		
Barium Hydroxide 150°F (65°C)	Α	Α	Α	Α	Α	Α	Α	Α	А	Α	А	1		
Barium Sulfide 150°F (65°C)	Α	Α	Α	Α	Α	Α	А	Α	Α	T	Α	,		
Beer	Α	А	Α	А	Α	А	А	Α	Α	- 1	Α	1		
Beet Sugar Liquors	А	Α	Α	Α	Α	Α	А	Α	Α	I	- 1	,		
Benzene, Benzol	X	X	X	С	X	X	Χ	С	Α	С	X			
Benzine, petroleum ether and														
Benzine, petroleum naphtha	X	X	С	F	X	F	Χ	С	Α		1	1		
Black Sulfate Liquor	А	Α	Α	Α	Α	Α	А	Α		- 1	- 1	1		
Blast Furnace Gas	С	С	Α	С	С	С	С	С	Α	I	I	- /		
Borax	А	А	Α	А	Α	А	А	Α	Α	1	1	1		
Boric Acid	А	Α	Α	А	Α	Α	А	Α	А	I	Α	1		
Bromine	X	Х	X	Х	Χ	С	Χ	F	Α	С		F		
Butane	X	Χ	F	Α	X	Α	X	Α	Α	Α	Α	A		
Butyl Acetate	С	X	Χ	Χ	F	Χ	F	Α	X	F	X	A		
Butyl alcohol, butanol	Α	Α	Α	Α	Α	Α	Α	Α	Α	F	I	A		
Calcium bisulfate	С	С	Α	Α	F	Α	F	С	Α	Α	- 1	1		
Calcium chloride	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	1		
Calcium hydroxide	А	Α	A	А	Α	A	Α	A	Α	Α	A	/		
Calcium hypochlorite	X	X	X	X	Α	F	A	С	Α	Α	F	I		
Caliche liquors	Α	Α	Α	Α	Α	Α	Α				I	-		
Cane sugar liquors	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	A		
Carbolic acid, phenol	С	С	С	С	С	С	Α	Α	Α	Α		1		

#### Chart is reprinted from 1996 RMA Hose Handbook

#### **ELASTOMERS**

Commonly used Elastomers:								Special Elastomers:							
MATERIAL	NR lor IR	SBR	CR	NBR	IIR	CSM	EPDM	MQ	FKM	СМ	ECO CO	XLI			
		(Ma	aximum	Temper	ature 1	00° F (38	3°C) Unle	ss Oth	erwise S	pecified	t				
Carbon dioxide, dry/wet	А	Α	А	А	Α	А	А	Α	Α	А	Α	A			
Carbon disulfide	X	X	X	Χ	X	X	Χ	С	Α	С		(			
Carbon monoxide 150°C (65°C)	С	С	С	С	С	F	С	А	А	I		A			
Carbon tetrachloride	X	Χ	Χ	С	Χ	Χ	X	С	А	С	F	A			
Castor oil	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α				
Cellosolve acetate	F	F	X	Χ	Α		Α	С	С			1			
CFC-12	Х	Х	Α	Α	F		F	X	Α		Α				
China wood oil, tung oil	X	Χ	F	Α	Α	F	Α	Α	С		- 1	A			
Chlorine, dry/wet	Х	Х	Х	Х	Х	Х	Х	Х	С	Х	Х	ı			
Chlorinated solvents	X	Χ	Χ	Χ	X	X	Χ	С	С	С		1			
Chloroacetic acid	X	С	С	С	Χ	Α	- 1	С	X						
Chlorosulfonic acid	X	X	С	С	Χ	X	X	С	X			F			
Chromic acid	X	X	Χ	Х	С	Α	I	С	С	Α		ı			
Citric acid	А	А	А	F	А	А	А	А	А	А	Α	,			
Coke oven gas	С	С	С	С	С	А		Α	Χ	Α	Χ	(			
Copper chloride 150°F (65°C)	С	A	F	Α	Α	F	Α	Α	Α	Α	I				
Copper sulfate 150°F (65°C)	C	Α	A	Α	F	A	A	Α	A	Α	A	,			
Corn oil	X	С	F	Α	A	F	С	Α	Α	Α	Α	,			
Cottonseed oil	X	С	F	Α	Α	F	С	Α	Α	Α	I	,			
Creosote, coal tar	X	X	F	А	X	F	X	С	F		X				
Wood	X	X	F	Α	X		X	С	A			,			
Creosols, cresylic acid	C	X	X	C	C	F	X	С	/ /	F		,			
Ethers	С	C	C	С	С	F	X	С	X	A		,			
Ethyl acetate	F	X	X	X	F	X	F	F	X	F	Χ	,			
Ethyl alcohol	A	A	A	A	A	Α	A	A	Α	A	А	1			
Ethyl cellulose	F	F	F	F	F	_	F	С	X	F	_	,			
Ethyl chloride	A	F	F	X	Α	F	A	С	F	F	F	F			
Ethylene glycol	A	A	A	A	A	A	A	A	Α	A	A	/			
Ferric chloride 150°F (65°C)	A	Α	Α	A	A	A	A	A	1	A	A	1			
Ferric Sulfate 150°F (65°C)	A	A	A	A	A	A	A	A	A	A	A	/			
Formaldehyde	A	A	С	A	A	A	A	A	A	Α	F	1			
Formic acid	A	A	C	F	A	A	A	A	X	A	F	ı			
Fuel oil	X	X	Α	A	X	F	X	С	A	F	A	1			
Furfural	X	С	С	X	A	F	С	С	X	A	X	/			
Gasoline, Non Leaded	X	X	X	Α	X	X	X		Α	С	Α	1			
Gasoline, + MTBE	X	Χ	Χ	Α	Χ	Χ	X	С	Α	С	Α	-			
Hi-test-+ MTBE  Gelatin	X	X A	X	A	X A	X	X A	C A	A	С	A	,			
Geralin -	А	А	Α	Α	А	А	А	А	Α		Α	,			
Glucose	А	Α	Α	А	Α	А	А	Α	А		А	,			
Glue	F	F	Α	Α	F	Α	Α	Α	С		Α	/			
Glycerine, glycerol	А	Α	А	Α	Α	Α	Α	Α	А	Α	Α	A			
Green sulfate liquor	А	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	A			
HFC-134A	F	Χ	Α	Α	Α	F	Α		X	F		A			

18 National: (800) 231-0734 Local: (713) 675-6324 19 National: (800) 231-0734

# **TECHNICAL DATA**

## ELASTOMERS

Commonly used Elastomers:	Special Elaston											ners:		
MATERIAL	NR lor IR	SBR	CR	NBR	IIR	CSM	EPDM	MQ	FKM	СМ	ECO CO	XLF		
	(Maximum Temperature 100° F (38°C) Unless Otherwise Specified													
Hydraulic fluids														
Petroleum	Χ	X	Α	Α	X	F	Х			Α	Α			
Phosphate ester alkyl	Χ	X	С	X	Α	X	А			Α	X			
Phosphate ester arly	Χ	X	X	X	С	X	С	-		С	X			
Phosphate ester blends	.,	X	X	X	X	X	X	С			С	>		
Silicate ester	Χ	Χ	С	С	Х	С	Χ			С	С			
Water-Glycol	А	А	Α	А	А	А	Α		А	Α	А			
Hydrobromic acid	С	X	С	С	Α	Α	Α	С	Α	Α				
Hydrochloric acid	Α	X	X	Χ	С	С	С	С	Α	Α	X	-		
Hydrocyanic acid	F	F	С	F	С	Α	С	Α	Α			-		
Hydrofluoric acid	Χ	Χ	Χ	Χ	С	А	С	Χ	А	А		1		
Hydrofluosilicic acid	Α	F	F	F	Α		А	Α	Α	Α				
Hydrogen Gas	F	F	A	A	A	_	A	Α	Α		Α	/		
Hydrogen peroxide	X	X	С	С	С	С	С	Α	A	Α				
Hydrogen sulfide, dry	С	С	F	С	A	A	A	С	F		_	/		
wet	С	С	F	С	Α	Α	А	С	С		F			
Kerosene	Χ	Χ	F	А	Χ	С	Χ	С	А	Α	А	,		
Lacquers	Χ	X	X	X	С	X	X	_	X		X			
Lacquers solvents	Χ	X	X	X	С	X	X		X		X			
Lactic acid	С	С	С	С	С	Α	С	Α	Α					
Linseed oil	С	Χ	F	А	Α	А	А	Α	Α	Α	А			
Lubricating oil, crude	Χ	X	F	Α	Χ	С	X	С	Α		Α	1		
refined	Χ	X	F	А	Χ	С	X	С		Α	А	/		
agnesium chloride 150°F (65°C)	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α			
agnesium hydroxide 150°F (65°C)	A	F	F	F	A	A	A	F	A	A	A	,		
agnesium sulfate 150°F (65°C)	Α	Α	А	Α	А	А	А	А	А	А	А	,		
Mercuric chloride	F	F	С	F	Α	А	А	А	Α		Α			
Mercury	A	A	A	Α	A	Α	Α	Α	Α		Α			
Methyl alcohol, methanol	Α	Α	Α	Α	Α	Α	Α	Α	С	Α	F			
Methyl chloride	С	С	С	С	С	X	С	Χ	Α					
Methyl ethly ketone	Χ	Χ	Χ	Χ	F	С	Α	С	X	С	Χ			
Methyl isopropyl ketone	Χ	X	X	Χ	F	С	С	С	X	F	X	1		
MTBE												/		
Milk	С	С	F	F	Α	Α	Α	Α	А	Α	Α	1		
Mineral oils	X	С	F	Α	X	F	X	A	Α	Α	Α	/		
Natural gas	С	С	Α	Α	С	Α	X	С	Α	A	Α	1		
Nickel chloride 150°F (65°C)	A	A	A	A	A	A	A	A	A	A	I	1		
Nickel sulfate 150°F (65°C)	A	A	A	A	A	A	A	A	A	A		/		
Nitric acid, crude Diluted 10%	X	X	X	X	C	C	X	X	C	A	X	I		
Concentrated 70%	X	X	X	X	C	C	X	X	C	A X	X	F		
Nitrobenzene	X	X	X	X	X	X	X	C	F	C	X	1		
Oleic acid	X	F	C	F	F	F	F	A	С	A	^	,		
Orcic aciu	/\	1	С	С	- 1	'	'	^		^		,		

#### Chart is reprinted from 1996 RMA Hose Handbook

## **ELASTOMERS**

Commonly used Elastomers:									Special	Elastor	ners:	
MATERIAL	NR lor IR	SBR	CR	NBR	IIR	CSM	EPDM	MQ	FKM	СМ	ECO CO	XLPE
		(M	aximum	Temper	ature 1	00° F (38	3°C) Unle	ess Oth	erwise S	pecified	t	
Oxalic acid	F	С	F	F	Α	А	А	Α	Α	Α	F	Α
Oxygen	F	С	Α	С	Α		Α	Α	Α	Α	F	Α
Palmitic acid	V	F	٨	٨	F	F	F	С	٨	А	г	٨
Paimitic acid  Perchlorethylene	X	X	A X	A C	X	X	X	С	A	C	F	A
Petroleum oils and crude 200°F (95°C)	X	X	F	A	X	C	X	С	A	С	F	A
Phosphoric acid, crude	A	C	С	C	C	A	C	С	A	A	Г	A
pure 45%	A	С	С	С	С	A	С	С	A	A		1
Picric acid, molten	С	С	С	С	С	7 (	I		, ,	7.		i
r iono acia, monen		Ü	Ü	Ü	Ü		•					·
water solution	А	С	F	F	Α	Α	1	Α	Α			- 1
Potassium chloride	А	А	Α	Α	Α	Α	А	Α	А	Α	А	Α
Potassium cyanide	А	Α	Α	Α	Α	А	А	Α	Α	Α	Α	Α
Potassium hydroxide	F	F	С	С	Α	Α	Α	Α	С	Α	Α	Α
Potassium sulfate	А	Α	А	А	Α	А	А	Α	А	А	А	Α
			-			-						
Propane	X	X	F	A	X	F	X	A	A	Α	Α	A
Sewage	С	С	F	A	С	A	C	С	A	۸	1	A
Soap solutions	A	A	F	A	A	A	A	A	A	A	A	A
Soda ash, sodium carbonate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium bicarbonate, baking soda	А	A	A	А	A	А	А	A	A	A	А	Α
Sodium bisulfate	А	А	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α
Sodium chloride	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α
Sodium cyanide	А	А	Α	Α	Α	А	Α	Α	Α	Α	Α	Α
Sodium hydroxide	F	F	С	С	Α	С	Α	Α	С	Α	F	Α
Sodium hypochlorite	X	X	Χ	Χ	Α	F	Α	С	А	Α	F	F
0 - 15			0	•	Δ.		^	Δ.	٥	Δ.		^
Sodium metaphosphate Sodium nitrate	A C	A C	C	A C	A	F A	A A	A C	А	A	A	A
Sodium perborate	С	С	С	С	A	A	A	A	А	A	A	A
Sodium peroxide	С	С	С	С	A	A	A	C	A			A
Sodium peroxide  Sodium phosphate.monobasic	A	F	С	F	A	A	A	A	A	Α		A
Soulain phosphate.monobasic												$\Lambda$
dibasic	Α	F	С	F	Α	Α	А	Α				Α
tribasic	А	F	С	F	Α	Α	Α	Α				Α
Sodium silicate	А	Α	Α	Α	Α	Α	Α	Α	Α	Α	- 1	Α
Sodium sulfate	А	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α
Sodium sulfide	А	А	А	Α	А	А	Α	А	А	А	- 1	А
Sodium thiosulfate, "hypo"	Α	Α	Α	Α	Α	А	Α	Α	Α	Α		Α
Soybean oil	X	С	F	A	A	A	A	A	A	A	Α	A
Stannic chloride	A	A	A	Α	F	Α	F	Α	A	Α	T	Α
Steam 450°F (230°C)	С	С	С	С	A	A	F	С	X		X	X
Stearic acid	X	X	С	F	F	С	F	A	1		F	A
Sulfur	F	F	A	F	A	A	A	F	A		F	C
Sulfur chloride	X	X	С	С	X	A	X	C	A			Α
Sulfur trioxide , dry	C	С	С	С	С	A	С	A	A		I	I
Sulfur trioxide, dry Sulfuric acid, 10%	X	C	C	C	C	F	C	A	A	٨	٨	Λ
Sulturic acid, 10%	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α

## **ELASTOMERS**

Commonly used Elastor	mers:								:	Special E	Elaston	ners:	
MATERIAL		NR lor IR	SBR	CR	NBR	IIR	CSM	EPDM	MQ	FKM	СМ	ECO CO	XLPE
			(1	Maximu	m Tempe	rature	100° F (	38°C) Un	less Oth	erwise S	pecifie	d	
11%-75%		С	С	С	С	F	Α	С	С	А	Α	F	Α
76%-95%		X	Χ	Χ	Χ	С	Α	X	X	Α	Χ	Χ	Α
fuming		X	X	X	X	X	X	X	X	X	X	X	Χ
Sulfurous ad Tannic acid		C A	C	C A	C	C A	A	C A	C A	A	A	С	A
ranno aon		, (		7.0	O	, (	7.	, ,	, ,	, ,	7.	•	, (
Tar		X	Χ	С	С	Χ	С	X	С	F		F	Χ
Tartaric aci	d	Α	С	С	С	F	Α	F	Α	Α	Α	F	Α
Toluene, tolu		Χ	Χ	Χ	С	Χ	X	Χ	С	А	С	X	Α
Trichloroethyl		X	Χ	Χ	Х	Χ	X	X	С	Α	С	X	Α
Turpentine	2	Χ	Χ	Χ	F	Χ	Χ	Χ	С	Α	F	А	Α
Vinegar		С	С	С	С	Α	Α	А	А	А	А		А
Water, acid m	ine	А	Α	С	A	Α	Α	А	Α	Α	Α	ı	Α
Water, fres		Α	Α	С	Α	Α	Α	А	А	А	Α	Α	Α
distilled		Α	Α	С	Α	Α	Α	А	Α	Α	Α	Α	Α
Whiskey and w	vines	А	Α	А	С	А	А	А	А	А	Α	- 1	Α
					-		.,				.,	.,	
Xylene.xylo		X	X	X	С	X	X	X	С	A	X	X	Α
Zinc chloric Zinc sulfate		C A	C A	C A	C	A	A	A	A	A	A	I	A
	<del>-</del>	A	A	A	А	A	A	A	A	A	A	'	A
<b>NOZZLES</b> - SPECS													
Nozzle Style &	Size	Inlet PSI		ssure PA	Straight GPM		ream IPM	30 GPM	30 IPM	I 60 GPM	60 IPM	90 GPM	90 IPM
		50		45	18		68	21	79	24	91	27	102
10464		75		17	22		83	25	95	28	106	32	121
1"		100	_	90	24		91	28	106	32	121	36	136
10404		50		45	45		170	50	189	55	208	60	227
10464		75	_	17	50		189	55	208	65 75	246	75	284
1-1/2"		100 50		90	55 90		208 341	60 120	227 454	130	284 492	85 145	322 549
10464		75		17	100		379	140	530	150	568	180	681
2-1/2"		100		90	110		416	165	625	180	681	205	776
				Threa	ds Per Ir	nch	•						İ
1-1/2" Size	2.100 (N)	/FD)			0 (NST)		2.0	93 (NYCC	RP)		1.878	(NPSH)	
				Threa	ds Per Ir	nch							
	6"				7"			7-1/2"				3"	
	3.058				3.13			00 (CHICA				062	
	3.093							8.062 (NS				093	
	3.125						3.1	25 (DETR	OIT)			140	
2.4/2"	3.156											156	
2-1/2"	3.187											312 (NIVED)	
	3.234 3.250											(NYFD)	1
	3.250											Y CORP (NPSH)	)
	3.312											(INF 3FI)	_ \

3.78 (CLEVELAND)

3.062 (PITTSBURGH)