

CAT 4

COMBINATIONS NIPPLES

24

MALE NPT
WELD BEVEL
GROOVED

SPECIALTY

CRIMPTEK
LONG SHANK
HEX
REDUCING & INCREASING
HOSE MENDERS & BARBS
HEAVY DUTY STEMS
SWAGE FERRULES





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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 / 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

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THE WAGNER GROUP
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(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.

COUPLINGS +
FIRE PROTECTION
GAUGES
PIPE FITTINGS/
VALVES
HOSES
SHEET RUBBER

COUPLINGS +
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VALVES
HOSES
SHEET RUBBER

COMBINATION NIPPLES

MALE NPT



Size	Working Pressure PSI	Black Steel		Zinc Plated Steel		316 SS		304 SS	
		Part #	List	Part #	List	Part #	List	Part #	List
1/2"	200	SF050S		SF050SP		SF050SS6		SF050SS	
3/4"	200	SF075S		SF075SP		SF075SS6		SF075SS	
1"	200	SF100S		SF100SP		SF100SS6		SF100SS	
1-1/4"	200	SF125S		SF125SP		SF125SS6		SF125SS	
1-1/2"	200	SF150S		SF150SP		SF150SS6		SF150SS	
2"	200	SF200S		SF200SP		SF200SS6		SF200SS	
2-1/2"	200	SF250S		SF250SP		SF250SS6		SF250SS	
3"	200	SF300S		SF300SP		SF300SS6		SF300SS	
4"	200	SF400S		SF400SP		SF400SS6		SF400SS	
5"	200	SF500S		SF500SP		SF500SS6		SF500SS	
6"	200	SF600S		SF600SP		SF600SS6		SF600SS	
8"	200	SF800S		SF800SP		--		--	
10"	200	SF1000S		SF1000SP		--		--	
12"	200	SF1200S		SF1200SP		--		--	



Size	Working Pressure PSI	Aluminum		Brass		Polypropylene		
		Part #	List	Part #	List	WORKING PSI	Part #	List
1/2"	200	SF050A		SF050B		75	SF050PP	
3/4"	200	SF075A		SF075B		75	SF075PP	
1"	200	SF100A		SF100B		75	SF100PP	
1-1/4"	200	SF125A		SF125B		75	SF125PP	
1-1/2"	200	SF150A		SF150B		75	SF150PP	
2"	200	SF200A		SF200B		75	SF200PP	
2-1/2"	200	SF250A		SF250B		75	SF250PP	
3"	200	SF300A		SF300B		75	SF300PP	
4"	200	SF400A		SF400B		75	SF400PP	
5"	200	SF500A		--		---	--	
6"	200	SF600A		--		---	--	

General Uses:

Working pressures may vary with type and clamping system used to install couplings. Combination Nipples are recommended for low pressure discharge and suction service for compatible liquids. NOT for compressible products such as Air, Nitrogen and Steam. * All blank end & grooved combination nipples are made using Schedule 40 pipe. Seal Fast Crimp Combination Nipples are to be used with Seal Fast Ferrules and Crimp Sleeves. They are designed with an Interlock System which allows the Ferrule to be permanently attached to the coupling. **WORKING PRESSURE 200, 150, 75 PSI**

COMBINATION NIPPLES

WELD BEVEL



Size	Working Pressure PSI	Black Steel		316 SS		Aluminum	
		Part #	List	Part #	List	Part #	List
1/2"	200	SF050SB		--		---	
3/4"	200	SF075SB		SF075BSS6		---	
1"	200	SF100SB		SF100BSS6		SF100BA	
1-1/4"	200	SF125SB		SF125BSS6		SF125BA	
1-1/2"	200	SF150SB		SF150BSS6		SF150BA	
2"	200	SF200SB		SF200BSS6		SF200BA	
2-1/2"	200	SF250SB		SF250BSS6		SF250BA	
3"	200	SF300SB		SF300BSS6		SF300BA	
4"	200	SF400SB		SF400BSS6		SF400BA	
5"	200	SF500SB		SF500BSS6		SF500BA	
6"	200	SF600SB		SF600BSS6		SF600BA	
8"	200	SF800SB		--		---	
10"	200	SF1000SB		--		---	

GROOVED



Size	Working Pressure PSI	Black Steel		316 SS	
		Part #	List	Part #	List
3/4"	200	SF075SG		---	
1"	200	SF100SG		SF100SSG6	
1-1/4"	200	SF125SG		SF125SSG6	
1-1/2"	200	SF150SG		SF150SSG6	
2"	200	SF200SG		SF200SSG6	
2-1/2"	200	SF250SG		SF250SSG6	
3"	200	SF300SG		SF300SSG6	
4"	200	SF400SG		SF400SSG6	
5"	200	SF500SG		---	
6"	200	SF600SG		---	
8"	200	SF800SG		---	
10"	200	SF1000SG		---	

General Uses:

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COMBINATION NIPPLES

SPECIALTY

SPECIALTY

COMBINATION NIPPLES

CRIMP TEK NPT THREADED

Size	Working Pressure PSI	ZINC PLATED STEEL	
		Part #	List
1"	200	SF100SPC	
1-1/4"	200	SF125SPC	
1-1/2"	200	SF150SPC	
2"	200	SF200SPC	
2-1/2"	200	SF250SPC	
3"	200	SF300SPC	
4"	200	SF400SPC	
6"	200	SF600SPC	



316 SS	
Part #	List
SF100SS6C	

SF150SS6C	
SF200SS6C	

SF300SS6C	
SF400SS6C	
SF600SS6C	



LONG SHANK

Size	Working Pressure PSI	Zinc Plated Steel		316 SS	
		Part #	List	Part #	List
1-1/4"	200	SF125LSP		SF125LSS6	
1-1/2"	200	SF150LSP		SF150LSS6	
2"	200	SF200LSP		SF200LSS6	
2-1/2"	200	SF250LSP		SF250LSS6	
3"	200	SF300LSP		SF300LSS6	
4"	200	SF400LSP		SF400LSS6	



HEX

Size	Working Pressure PSI	Steel		Zinc Plated Steel	
		Part #	List	Part #	List
1/2"	200	SF050HXS		SF050HXSP	
3/4"	200	SF075HXS		SF075HXSP	
1"	200	SF100HXS		SF100HXSP	
1-1/4"	200	SF125HXS		SF125HXSP	



CRIMP TEK WELD BEVEL

Size	Working Pressure PSI	STEEL	
		Part #	List
1"	200	SF100SBC	
1-1/4"	200	SF125SBC	
1-1/2"	200	SF150SBC	
2"	200	SF200SBC	
2-1/2"	200	SF250SBC	
3"	200	SF300SBC	
4"	200	SF400SBC	
6"	200	SF600SBC	



316 SS	
Part #	List
SF100SSB6C	

SF150SSB6C	
SF200SSB6C	

SF300SSB6C	
SF400SSB6C	
SF600SSB6C	



REDUCING & INCREASING NIPPLES - SHANK X MALE NPT

Size Hose x NPT	Working Pressure PSI	Steel		Zinc Plated Steel		304 SS	
		Part #	List	Part #	List	Part #	List
3/4" x 1/2"	200	SF075050S		SF075050SP		SF075050SS	
3/4" x 1"	200	SF075100S		SF075100SP		SF075100SS	
1" x 3/4"	200	SF100075S		SF100075SP		SF100075SS	
1" x 1-1/4"	200	SF100125S		SF100125SP		SF100125SS	
1-1/4" x 1"	200	SF125100S		SF125100SP		SF125100SS	
1-1/4" x 1-1/2"	200	SF125150S		SF125150SP		SF125150SS	
1-1/2" x 1"	200	SF150100S		SF150100SP		SF150100SS	
1-1/2" x 1-1/4"	200	SF150125S		SF150125SP		SF150125SS	
1-1/2" x 2"	200	SF150200S		SF150200SP		SF150200SS	
2" x 1-1/2"	200	SF200150S		SF200150SP		SF200150SS	
2" x 2-1/2"	200	SF200250S		SF200250SP		SF200250SS	
2" x 3"	200	SF200300S		SF200300SP		SF200300SS	
2-1/2" x 2"	200	SF250200S		SF250200SP		SF250200SS	
3" x 2"	200	SF300200S		SF300200SP		SF300200SS	



CRIMP TEK GROOVED

Size	Working Pressure PSI	STEEL	
		Part #	List
1"	200	SF100SGC	
1-1/2"	200	SF150SGC	
2"	200	SF200SGC	
3"	200	SF300SGC	
4"	200	SF400SGC	
6"	200	SF600SGC	

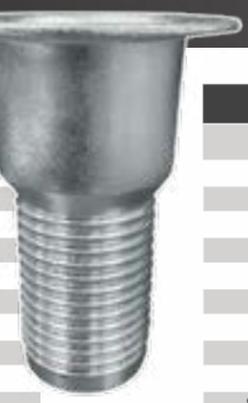


316 SS	
Part #	List
SF100SSG6C	
SF150SSG6C	
SF200SSG6C	
SF300SSG6C	
SF400SSG6C	
SF600SSG6C	



KC TURN BACK

Size	WORKING PSI	PLATED IRON	
		* Part #	List
1"	150	SF100SPTBC	
1-1/4"	150	SF125SPTBC	
1-1/2"	150	SF150SPTBC	
2"	150	SF200SPTBC	
2-1/2"	150	SF250SPTBC	
3"	150	SF300SPTBC	
4"	150	SF400SPTBC	
6"	150	SF600SPTBC	
8"	150	SF800SPTBC	
10"	150	SF1000SPTBC	
12"	150	SF1200SPTBC	



316 SS	
* Part #	List
SF100SSTB6C	
SF125SSTB6C	
SF150SSTB6C	
SF200SSTB6C	
SF250SSTB6C	
SF300SSTB6C	
SF400SSTB6C	
SF600SSTB6C	
SF800SSTB6C	
SF1000SSTB6C	
SF1200SSTB6C	



* WARNING: Working Pressures may vary depending on how the couplings are attached to the hose assembly. Before operation, always check the hose assembly for proper attachment and that couplings are in working order.

A Turned Back Nipple, when used in a Floating Flange Assembly, allows the flange to be aligned without stressing (twisting) the hose. This generally increases the hose service life by eliminating a common cause of premature hose failure. For use with Lap Joint Flanges

General Uses:

Working pressures may vary with type and clamping system used to install couplings. Combination Nipples are recommended for low pressure discharge and suction service for compatible liquids. NOT for compressible products such as Air, Nitrogen and Steam. * All blank end & grooved combination nipples are made using Schedule 40 pipe. Seal Fast Crimp Combination Nipples are to be used with Seal Fast Ferrules and Crimp Sleeves. They are designed with an Interlock System which allows the Ferrule to be permanently attached to the coupling. **WORKING PRESSURE 200, 150 PSI**

HOSE MENDERS

Size	Zinc Plated Steel		316 SS		304 SS		Polypropylene	
	Part #	List	Part #	List	Part #	List	Part #	List
1/4"	SF025M		---		---		---	
3/8"	SF038M		---		---		---	
1/2"	SF050M		SF050MSS6		SF050MSS		HM050	
5/8"	SF058M		---		---		---	
3/4"	SF075M		SF075MSS6		SF075MSS		HM075	
1"	SF100M		SF100MSS6		SF100MSS		HM100	
1-1/4"	SF125M		SF125MSS6		SF125MSS		HM125	
1-1/2"	SF150M		SF150MSS6		SF150MSS		HM150	
2"	SF200M		SF200MSS6		SF200MSS		HM200	
2-1/2"	SF250M		SF250MSS6		SF250MSS		---	
3"	SF300M		SF300MSS6		SF300MSS		HM300	
4"	SF400M		SF400MSS6		SF400MSS		---	
5"	SF500M		---		---		---	
6"	SF600M		SF600MSS6		SF600MSS		---	
8"	SF800M		---		---		---	
10"	SF1000M		---		---		---	
12"	SF1200M		---		---		---	



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PIPE FITTINGS/
VALVES

PIPE FITTINGS/
VALVES

COMBINATION NIPPLES

EXTERNAL SWAGE SWAGE FERRULES

COMBINATION NIPPLES

HOSE BARB

▶*Not for use with Notched Ferrule

No Collar	Size	Working Pressure PSI	316 SS	
			Part #	List
	1/2"	200	HB 050SSI	
	3/4"	200	HB 075SSI	
	1"	200	HB 100SSI	
	1-1/4"	200	HB 125SSI	

With Collar	Size	Working Pressure PSI	316 SS - Investment Cast	
			Part #	List
	1-1/2"	200	HB 150SSI	
	2"	200	HB 200SSI	
	2-1/2"	200	HB 250SSI	
	3"	200	HB 300SSI	
	4"	200	HB 400SSI	
	6"	200	HB 600SSI	



INDUSTRIAL HEAVY DUTY STEMS

▶*Use with Industrial Ferrules on p.187



Hose I.D.	Working Pressure PSI	Male NPT - Zinc Plated Steel		Weld Bevel - Steel		Groove Stem - Steel	
		Part #	List	Part #	List	Part #	List
1-1/2"	800	HD150NPT		-		-	
2"	800	HD200NPT		HD200WB		HD200G	
2-1/2"	800	HD250NPT		HD250WB		HD250G	
3"	800	HD300NPT		HD300WB		HD300G	
4"	500	HD400NPT		HD400WB		HD400G	
5"	500	HD500NPT		HD500WB		HD500G	
6"	500	HD600NPT		HD600WB		HD600G	
8"	300	HD800NPT		HD800WB		HD800G	



Hose I.D.	Working Pressure PSI	Male NPT - 304 SS		Weld Bevel - 304 SS	
		Part #	List	Part #	List
1-1/2"	800	HD150NPTSS		---	
2"	800	HD200NPTSS		HD200WBSS	
2-1/2"	800	HD250NPTSS		---	
3"	800	HD300NPTSS		HD300WBSS	
4"	500	HD400NPTSS		HD400WBSS	

General Uses:

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HEAVY DUTY INDUSTRIAL

Hose I.D.	Hose OD Size Range	Ferrule Size			FWT	Zinc Plated Steel	
		OD	ID	LG		Part #	List
2"	2-1/2" to 2-5/8"	3"	2-3/4"	3-1/2"	1/8"	HD200FA	
	2-5/8" to 2-7/8"	3-1/4"	3"	3-1/2"	1/8"	HD200FB	
	2-7/8" to 3-1/8"	3-1/2"	3-1/4"	3-1/2"	1/8"	HD200FC	
2-1/2"	3" to 3-1/8"	3-1/2"	3-1/4"	4-1/4"	1/8"	HD250FA	
	3-1/8" to 3-5/8"	4"	3-3/4"	4-1/4"	1/8"	HD250FB	
3"	3-1/2" to 3-5/8"	4"	3-3/4"	5"	1/8"	HD300FA	
	3-5/8" to 3-7/8"	4-1/2"	4"	5"	1/4"	HD300FB	
	3-7/8" to 4"	4-1/2"	4-1/8"	5"	3/16"	HD300FC	
	4" to 4-1/8"	4-1/2"	4-1/4"	5"	1/8"	HD300FD	
4"	4-1/8" to 4-1/4"	5"	4-1/2"	5"	1/4"	HD300FE	
	4-1/2" to 4-3/4"	5-1/4"	4-7/8"	5-1/2"	3/16"	HD400FA	
	4-3/4" to 4-15/16"	5-9/16"	5-1/16"	5-1/2"	1/4"	HD400FB	
	4-15/16" to 5-1/16"	5-9/16"	5-3/16"	5-1/2"	3/16"	HD400FC	
5"	5-1/16" to 5-3/16"	5-9/16"	5-5/16"	5-1/2"	1/8"	HD400FD	
	5-1/4" to 5-3/8"	6"	5-1/2"	5-1/2"	1/4"	HD400FE	
	5-1/4" to 5-1/2"	6"	5-5/8"	5-1/2"	3/16"	HD400FF	
	5-3/4" to 6"	6-5/8"	6-1/8"	6-7/8"	1/4"	HD500FA	
6"	6" to 6-3/8"	7"	6-1/2"	6-5/8"	1/4"	HD500FB	
	6-3/4" to 7-1/8"	7-5/8"	7-1/4"	7-1/2"	3/16"	HD600FA	
	7-1/8" to 7-3/8"	8"	7-1/2"	7-1/2"	1/4"	HD600FB	
	7-3/8" to 7-9/16"	8-3/16"	7-11/16"	7-1/2"	1/4"	HD600FC	
8"	7-5/8" to 8"	8-5/8"	8-1/8"	7-1/2"	1/4"	HD600FD	
	9" to 9-3/8"	10"	9-1/2"	8-3/4"	1/4"	HD800FA	
	9-7/16" to 10-1/8"	10-3/4"	10-1/4"	8-1/2"	1/4"	HD800FB	



LIGHT DUTY INDUSTRIAL

Hose I.D.	Hose OD Size Range	Ferrule Size			FWT	Zinc Plated Steel	
		OD	ID	LG		Part #	List
1-1/2"	1-15/16" X 2"	2.40"	2.14"	2.8"	---	LD150-1	
	2-1/64" X 2-1/8"	2.50"	2.26"	2.8"	---	LD150-2	
	2-9/64" X 2-1/4"	2.60"	2.38"	2.8"	---	LD150-3	
2"	2-9/16" to 2-5/8"	3.04"	2.75"	3.4"	---	LD200-1	
	2-41/64" X 2-3/4"	3.14"	2.88"	3.4"	---	LD200-2	
	2-49/64" X 2-7/8"	3.26"	3.01"	3.4"	---	LD200-3	
2-1/2"	3-1/16" X 3-1/8"	3.55"	3.25"	3.7"	---	LD250-1	
	3-9/64" X 3-1/4"	3.64"	3.35"	3.9"	---	LD250-2	
3"	3-9/16" X 3-5/8"	4.00"	3.72"	4.6"	---	LD300-1	
	3-41/64" X 3-3/4"	4.16"	3.87"	4.6"	---	LD300-2	
	3-49/64" X 3-7/8"	4.26"	3.92"	4.6"	---	LD300-3	
4"	4-5/8" X 4-11/16"	5.25"	4.95"	5.2"	---	LD400-1	
	4-45/64" X 4-13/16"	5.38"	5.07"	5.4"	---	LD400-2	
	4-53/64" X 4-15/16"	5.50"	5.13"	5.4"	---	LD400-3	



PIPE FITTINGS/
VALVES

PIPE FITTINGS/
VALVES

TECHNICAL DATA

CORROSION RESISTANCE OF COUPLING MATERIALS

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

RATINGS: 1. Excellent
2. Good
3. Fair Conditional
x. Not Satisfactory

NOTES: No rating indicates no data available

AGENT	Mall. From Steel	Brass	Bronze	Aluminum	Glass	Stainless 410, 416, 430	Stainless 302, 202, 304, 308	Stainless 316	Monel
Acetate, Solvents, Crude		3				2	1	1	2
Acetate, Solvents, Pure		1	1	1		1	1	1	1
Acetic Acid	X	X	X	2	1	X	2	2	2
Acetic Acid Vapor	X	X		3		X	2	2	3
Acetic Anhydride	X	X		2		X	2	2	2
Acetone	1	1	1	1	1	1	1	1	1
Acetylene	1	2		1		1	1	1	2
Alcohols	1	2		1		1	1	1	1
Aluminum Sulfate	X	3	3	3	1	X	3	2	2
Alums	X	3	2	3	1	X	3	2	2
Ammonia Gas	1	X	3	1	3	1	1	1	X
Ammonium Chloride	1	3		1*		3	3	1	1
Ammonium Hydroxide	2	X		2		1	1	1	3
Ammonium Nitrate	1	X		2		1	1	1	3
Ammonium Phosphate (Ammoniacal)		X				1	1	1	2
Ammonium Phosphate (Neutral)		3				1	1	1	2
Ammonium Phosphate (Acid)		3				3	2	1	2
Ammonium Sulfate	1	3				2	1	1	2
Asphalt	1	2				2	1	1	1
Beer	2	2	1	1		X	1	1	1
Beet Sugar Liquors	1	2		1		2	1	1	1
Benzene, Benzol	1	1	1	1	1	1	1	1	1
Benzine (petroleum-naphtha)	1	1		1		1	1	1	1
Borax	2	2				1	1	1	1
Boric Acid	X	3		1		3	2	1	1
Butane, Butylene	1	1	1	1		1	1	1	1
Butadiene		1				1	1	1	1
Calcium Bisulfate		X				X	2	1	X
Calcium Hypochlorite	3	3	3	X	3	X	3	2	3
Cane Sugar Liquors	1	2		1		2	1	1	1
Carbon Dioxide (Dry)	1	1		1		1	1	1	1
Carbon Dioxide (Wet & Aqueous Sol)	2	3		2		2	1	1	2
Carbon Disulfide	2	3		2		2	1	1	3
Carbon Tetrachloride	3	1	2	3	1	1	1	1	1
Chlorine (Dry)	2	2	2	1	2	2	2	2	1
Chlorine (Wet)	X	X	3	X	2	X	X	3	3
Chromic Acid		X	X	X	1	3	2	2	3
Citric Acid	X	3		1		3	X	1	2
Coke Oven Gas	1	3		2		1	1	1	2
Copper Sulfate	X	X		X		1	1	1	3
Core Oils		1	1			1	1	1	1
Cottonseed Oil	1	1	1	1		1	1	1	1
Creosote	2	3		1		1	1	1	1
Ethers	2	1		1		1	1	1	1
Ethylene Glycol	2	2				1	1	1	1
Ferric Chloride	X	X	X	X	1	X	X	X	X
Ferric Sulfate	X	X		X		1	1	1	3
Formaldehyde	2	2		2		1	1	1	1

*3 to X at high temperatures.

Chemical Chart is reprinted from 1996 RMA Hose Handbook

TECHNICAL DATA

CORROSION RESISTANCE OF COUPLING MATERIALS

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

RATINGS: 1. Excellent
2. Good
3. Fair Conditional
x. Not Satisfactory

NOTES: No rating indicates no data available

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		X	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	X
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		1	1	1	1
Hydrochloric Acid	X	X	X	X	1	X	X	X	X
Hydrocyanic Acid	3	X		1		3	1	1	2
Hydrofluoric Acid	X	3	3	X	X	X	X	X	X
Hydrogen Fluoride		3				X	X	3	1
Hydrogen	1	1		1		1	1	1	1
Hydrogen 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			3			3	2	1
Lime-Sulfur	2	X		2		1	1	2	1
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	X	3	X
Mercury	1	X		X		1	1	1	2
Milk	3	3		1		2	1	1	3
Molasses	2	X		2		2	1	1	1
Natural Gas	1	2		1		1	1	1	1
Nickel Chloride		X		X		X	3	2	2
Nickel Sulfate		3		X		3	2	1	1
Nitric Acid	X	X	X	3	1	2	2	2	X
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	X
Petroleum Oils (Refined)	1	1	1	1		1	1	1	1
Phosphoric Acid 25%	3	X		3	3	X	3	1	2
Phosphoric Acid 25-50%	X	X		X	3	X	X	2	2
Phosphoric Acid 50-85%	X	X		X	X	X	X	2	2
Picric Acid	3	X		3		2	1	1	X
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)		X		1		1	1	1	2

*3 to X at high temperatures.

Chemical Chart is reprinted from 1996 RMA Hose Handbook

CORROSION RESISTANCE OF COUPLING MATERIALS

OIL & GASOLINE RESISTANCE

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

RATINGS: 1. Excellent
2. Good
3. Fair Conditional
x. Not Satisfactory

NOTES: No rating indicates no data available

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		X				X	X	3	2
Soda Ash (Sodium Carbonate)	1	2		X		1	1	1	1
Sodium Bicarbonate	3	1		X		1	1	1	1
Sodium Bisulfate	X	3		3		X	1	1	1
Sodium Chloride	2	3	2	X	1	3	2	1	1
Sodium Cyanide	2	X		X		1	1	1	2
Sodium Hydroxide	3	X	3	X	X	2	2	2	1
Sodium Hypochlorite	X	X		X		X	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				X	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		X		1	1	1	2
Stearic Acid	3	3		3		2	2	1	1
Sulfate Liquors		X				1	1	1	2
Sulfur	2	X		2		2	2	1	3
Sulfur Chloride	X	X				X	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			2	2	2	X
Sulfurous Acid	X	X		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
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 (Salt)	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.

Chemical Chart is reprinted from 1996 RMA Hose Handbook

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:

	VOLUME CHANGE MAXIMUM	TENSILE STRENGTH RETAINED
CLASS A (HIGH OIL RESISTANCE).....	+25%	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 conditions 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-sulfonyl-polyethylene
- EPDM** - Ethylene-propylene-diene-terpolymer
- MQ** - Dimethyl-polysiloxane
- FKM** - Fluorocarbon rubber
- CM** - Chloro-polyethylene
- ECO/CO** - Epichlorohydrin
- EXLPE** - Chloro-sulfonyl-polyethylene

TECHNICAL DATA

ELASTOMERS

Commonly used Elastomers:													Special Elastomers:																											
MATERIAL	NR lor IR	SBR	CR	NBR	IIR	CSM	EPDM	MQ	FKM	CM	ECO CO	XLPE	MATERIAL	NR lor IR	SBR	CR	NBR	IIR	CSM	EPDM	MQ	FKM	CM	ECO CO	XLPE															
(Maximum Temperature 100° F (38°C) Unless Otherwise Specified)																																								
Acetic Acid, Dilute, 10%	F	C	C	C	A	C	A	A	X	A	F	A	Carbon dioxide, dry/wet	A	A	A	A	A	A	A	A	A	A	A	A	Carbon disulfide	X	X	X	X	X	X	X	C	A	C		C		
Glacial	C	X	X	X	F	C	F	F	X	A	X	A	Carbon monoxide 150°C (65°C)	C	C	C	C	C	F	C	A	A	I		A	Carbon tetrachloride	X	X	X	C	X	X	X	C	A	C	F	A		
Anhydride	C	C	F	F	F	A	I	C	X	A	X	A	Castor oil	A	A	A	A	A	A	A	A	A	A	A	A	Cellosolve acetate	F	F	X	X	A		A	C				A	A	
Acetone	A	A	F	X	A	F	A	A	X	A	X	A	CFC-12	X	X	A	A	F		F	X	A		A	I	China wood oil, tung oil	X	X	F	A	A	F	A	A	C		I	A		
Acetylene	A	A	F	A	A	F	A	C	A	I	I	I	Chlorine, dry/wet	X	X	X	X	X	X	X	X	C	X	X	F	Chlorinated solvents	X	X	X	X	X	X	X	C	C	C		A		
Air 150°F (65°C)	A	A	A	A	A	A	A	A	A	A	A	A	Chloroacetic acid	X	C	C	C	X	A	I	C	X			A	Chlorosulfonic acid	X	X	C	C	X	X	X	C	X			F		
Aluminum Chloride 150°F (65°C)	A	A	A	A	A	A	A	A	A	A	A	A	Chromic acid	X	X	X	X	C	A	I	C	C	A		F	Citric acid	A	A	A	F	A	A	A	A	A	A	A	A		
Aluminum Fluoride 150°F (65°C)	A	A	A	A	A	A	A	A	A	A	A	A	Coke oven gas	C	C	C	C	C	A		A	X	A	X	C	Copper chloride 150°F (65°C)	C	A	F	A	A	F	A	A	A	A	I	A		
Aluminum Sulfate 150°F (65°C)	A	A	A	A	A	A	A	A	A	A	A	A	Copper sulfate 150°F (65°C)	C	A	A	A	F	A	A	A	A	A	A	Corn oil	X	C	F	A	A	F	C	A	A	A	A	A			
Alums 150°F (65°C)	A	A	A	A	A	A	A	A	A	A	A	A	Cottonseed oil	X	C	F	A	A	F	C	A	A	A	I	A	Creosote, coal tar	X	X	F	A	X	F	X	C	F		X	A		
Ammonia Gas	A	A	A	A	A	A	A	A	X	A	I	A	Creosols, cresylic acid	X	X	F	A	X		X	C	A		A	Ethers	C	C	C	C	C	F	X	C	X	A		A			
Ammonium Chloride	A	A	A	A	A	A	A	C	A	A	A	A	Ethyl acetate	F	X	X	X	F	X	F	F	X	F	X	A	Ethyl alcohol	A	A	A	A	A	A	A	A	A	A	A	A	A	
Ammonium Hydroxide	C	F	F	F	A	A	A	A	A	A	I	A	Ethyl cellulose	F	F	F	F	F		F	C	X	F		A	Ethyl chloride	A	F	F	X	A	F	A	C	F	F	F	F	F	
Ammonium Nitrate	A	A	A	A	A	A	A	A		I	A	A	Ethylene glycol	A	A	A	A	A	A	A	A	A	A	A	A	Ferric chloride 150°F (65°C)	A	A	A	A	A	A	A	A	I	A	A	A	A	
Ammonium Phosphate, monobasic	A	A	A	A	A	A	A	A		A	I	A	Ferric Sulfate 150°F (65°C)	A	A	A	A	A	A	A	A	A	A	A	A	Formaldehyde	A	A	C	A	A	A	A	A	A	A	F	A	A	
dibasic	A	A	A	A	A	A	A	A		I	I	A	Formic acid	A	A	C	F	A	A	A	A	X	A	F	F	Formic acid	A	A	C	F	A	A	A	A	X	A	F	F		
tribasic	A	A	A	A	A	A	A	A		I	I	A	Fuel oil	X	X	A	A	X	F	X	C	A	F	A	A	Furfural	X	C	C	X	A	F	C	C	X	A	X	A		
Ammonium Sulfate	A	A	A	A	A	A	A	A	A	A	I	A	Gasoline, Non Leaded	X	X	X	A	X	X	X		A	C	A	A	Gasoline, + MTBE	X	X	X	A	X	X	X	C	A	C	A	A		
Amyl Acetate	F	X	X	X	F	X	A	A	X	C	X	A	Hi-test-+ MTBE	X	X	X	A	X	X	X	C	A	C	A	A	Gelatin	A	A	A	A	A	A	A	A			A	A		
Amyl Alcohol	A	A	A	A	A	A	A	A	A	A	A	A	Glucose	A	A	A	A	A	A	A	A	A		A	A	Glue	F	F	A	A	F	A	A	A	C		A	A		
Aniline, Aniline Oil	X	X	C	X	A	X	C	C	A	C	X	A	Glycerine, glycerol	A	A	A	A	A	A	A	A	A	A	A	A	Green sulfate liquor	A	A	A	A	A	A	A	A	A	A	A	A	A	
Aniline Dyes	F	F	F	F	A	F	C	C			I	I	HFC-134A	F	X	A	A	A	F	A		X	F		A															
Asphalt	X	X	F	F	X	F	X		A		A	X																												
Barium Chloride 150°F (65°C)	A	A	A	A	A	A	A	A	A	A	A	A																												
Barium Hydroxide 150°F (65°C)	A	A	A	A	A	A	A	A	A	A	A	A																												
Barium Sulfide 150°F (65°C)	A	A	A	A	A	A	A	A	A	I	A	A																												
Beer	A	A	A	A	A	A	A	A	A	I	A	A																												
Beet Sugar Liquors	A	A	A	A	A	A	A	A	A	I	I	A																												
Benzene, Benzol	X	X	X	C	X	X	X	C	A	C	X	A																												
Benzene, petroleum ether and																																								
Benzene, petroleum naphtha	X	X	C	F	X	F	X	C	A		I	A																												
Black Sulfate Liquor	A	A	A	A	A	A	A	A		I	I	A																												
Blast Furnace Gas	C	C	A	C	C	C	C	C	A	I	I	A																												
Borax	A	A	A	A	A	A	A	A	A	I	I	A																												
Boric Acid	A	A	A	A	A	A	A	A	A	I	A	A																												
Bromine	X	X	X	X	X	C	X	F	A	C		F																												
Butane	X	X	F	A	X	A	X	A	A	A	A	A																												
Butyl Acetate	C	X	X	X	F	X	F	A	X	F	X	A																												
Butyl alcohol, butanol	A	A	A	A	A	A	A	A	A	F	I	A																												
Calcium bisulfate	C	C	A	A	F	A	F	C	A	A	I	A																												
Calcium chloride	A	A	A	A	A	A	A	A	A	A	A	A																												
Calcium hydroxide	A	A	A	A	A	A	A	A	A	A	A	A																												
Calcium hypochlorite	X	X	X	X	A	F	A	C	A	A	F	F																												
Caliche liquors	A	A	A	A	A	A	A				I	A																												
Cane sugar liquors	A	A	A	A	A	A	A	A	A	A	A	A																												
Carbolic acid, phenol	C	C	C	C	C	C	A	A	A	A		A																												

Chart is reprinted from 1996 RMA Hose Handbook

TECHNICAL DATA

ELASTOMERS

Commonly used Elastomers:													Special Elastomers:												
MATERIAL	NR lor IR	SBR	CR	NBR	IIR	CSM	EPDM	MQ	FKM	CM	ECO CO	XLPE	MATERIAL	NR lor IR	SBR	CR	NBR	IIR	CSM	EPDM	MQ	FKM	CM	ECO CO	XLPE
(Maximum Temperature 100° F (38°C) Unless Otherwise Specified)																									
Carbon dioxide, dry/wet	A	A	A	A	A	A	A	A	A	A	A	A	Carbon disulfide	X	X	X	X	X	X	X	C	A	C		C
Carbon disulfide	X	X	X	X	X	X	X	C	A	C		C	Carbon monoxide 150°C (65°C)	C	C	C	C	C	F	C	A	A	I		A
Carbon monoxide 150°C (65°C)	C	C	C	C	C	F	C	A	A	I		A	Carbon tetrachloride	X	X	X	C	X	X	X	C	A	C	F	A
Carbon tetrachloride	X	X	X	C	X	X	X	C	A	C	F	A	Castor oil	A	A	A	A	A	A	A	A	A	A	A	A
Castor oil	A	A	A	A	A	A	A	A	A	A	A	A	Cellosolve acetate	F	F	X	X	A		A	C				A
Cellosolve acetate	F	F	X	X	A								CFC-12	X	X	A	A	F		F	X	A		A	I
CFC-12	X	X	A	A	F								China wood oil, tung oil	X	X	F	A	A	F	A	A	C		I	A
China wood oil, tung oil	X	X	F	A	A	F	A	A	C				Chlorine, dry/wet	X	X	X	X	X	X	X	C	X	X	F	
Chlorine, dry/wet	X	X	X	X	X	X	X	X	C	X	X	F	Chlorinated solvents	X	X	X	X	X	X	X	C	C	C		A
Chlorinated solvents	X	X	X	X	X	X	X	X	C	C	C		A	Chloroacetic acid	X	C	C	C	X	A	I	C	X		A
Chloroacetic acid	X	C	C	C	X	A	I	C	X				Chlorosulfonic acid	X	X	C	C	X	X	X	C	X		F	
Chlorosulfonic acid	X	X	C	C	X	X	X	C	X				Chromic acid	X	X	X	X	C	A	I	C	C	A		F
Chromic acid	X	X	X	X	C	A	I	C	C	A		F	Citric acid	A	A	A	F	A	A	A	A	A	A	A	A
Citric acid	A	A	A	F	A	A	A	A	A	A	A	A	Coke oven gas	C	C	C	C	C	A		A	X	A	X	C
Coke oven gas	C	C	C	C	C	A		A	X	A	X	C	Copper chloride 150°F (65°C)	C	A	F	A	A	F	A	A	A	A	I	A
Copper chloride 150°F (65°C)	C	A	F	A	A	F	A	A	A	A	A														

TECHNICAL DATA

ELASTOMERS

Commonly used Elastomers:													Special Elastomers:		
MATERIAL	NR lor IR	SBR	CR	NBR	IIR	CSM	EPDM	MQ	FKM	CM	ECO CO	XLPE			
(Maximum Temperature 100° F (38°C) Unless Otherwise Specified)															
Hydraulic fluids															
Petroleum	X	X	A	A	X	F	X			A	A				
Phosphate ester alkyl	X	X	C	X	A	X	A			A	X				
Phosphate ester arly	X	X	X	X	C	X	C			C	X				
Phosphate ester blends		X	X	X	X	X	X	C			C	X			
Silicate ester	X	X	C	C	X	C	X			C	C				
Water-Glycol	A	A	A	A	A	A	A		A	A	A				
Hydrobromic acid	C	X	C	C	A	A	A	C	A	A				I	
Hydrochloric acid	A	X	X	X	C	C	C	C	A	A	X	A			
Hydrocyanic acid	F	F	C	F	C	A	C	A	A					A	
Hydrofluoric acid	X	X	X	X	C	A	C	X	A	A				A	
Hydrofluosilicic acid	A	F	F	F	A		A	A	A	A				I	
Hydrogen Gas	F	F	A	A	A		A	A	A		A	A			
Hydrogen peroxide	X	X	C	C	C	C	C	A	A	A				I	
Hydrogen sulfide, dry	C	C	F	C	A	A	A	C	F					A	
wet	C	C	F	C	A	A	A	C	C		F	A			
Kerosene	X	X	F	A	X	C	X	C	A	A	A	A			
Lacquers	X	X	X	X	C	X	X		X		X	F			
Lacquers solvents	X	X	X	X	C	X	X		X		X	F			
Lactic acid	C	C	C	C	C	A	C	A	A			A			
Linseed oil	C	X	F	A	A	A	A	A	A	A	A	A			
Lubricating oil, crude	X	X	F	A	X	C	X	C	A		A	A			
refined	X	X	F	A	X	C	X	C		A	A	A			
Magnesium chloride 150°F (65°C)	A	A	A	A	A	A	A	A	A	A	A	A			
Magnesium hydroxide 150°F (65°C)	A	F	F	F	A	A	A	F	A	A	A	A			
Magnesium sulfate 150°F (65°C)	A	A	A	A	A	A	A	A	A	A	A	A			
Mercuric chloride	F	F	C	F	A	A	A	A	A		A	A			
Mercury	A	A	A	A	A	A	A	A	A		A	A			
Methyl alcohol, methanol	A	A	A	A	A	A	A	A	C	A	F	A			
Methyl chloride	C	C	C	C	C	X	C	X	A			F			
Methyl ethly ketone	X	X	X	X	F	C	A	C	X	C	X	A			
Methyl isopropyl ketone	X	X	X	X	F	C	C	C	X	F	X	A			
MTBE												A			
Milk	C	C	F	F	A	A	A	A	A	A	A	A			
Mineral oils	X	C	F	A	X	F	X	A	A	A	A	A			
Natural gas	C	C	A	A	C	A	X	C	A	A	A	A			
Nickel chloride 150°F (65°C)	A	A	A	A	A	A	A	A	A	A	I	A			
Nickel sulfate 150°F (65°C)	A	A	A	A	A	A	A	A	A	A	I	A			
Nitric acid, crude	X	X	X	X	C	C	X	X	C	A	X	F			
Diluted 10%	X	X	C	X	C	C	X	X	C	A	X	F			
Concentrated 70%	X	X	X	X	C	C	X	X	C	X	X	F			
Nitrobenzene	X	X	X	X	X	X	X	C	F	C	X	A			
Oleic acid	X	F	C	F	F	F	F	A	C	A		A			
Oleum spirits	X	C	C	C			I		C			I			

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TECHNICAL DATA

ELASTOMERS

Commonly used Elastomers:													Special Elastomers:		
MATERIAL	NR lor IR	SBR	CR	NBR	IIR	CSM	EPDM	MQ	FKM	CM	ECO CO	XLPE			
(Maximum Temperature 100° F (38°C) Unless Otherwise Specified)															
Oxalic acid	F	C	F	F	A	A	A	A	A	A	F	A			
Oxygen	F	C	A	C	A		A	A	A	A	F	A			
Palmitic acid	X	F	A	A	F	F	F	C	A	A	F	A			
Perchloroethylene	X	X	X	C	X	X	X	C	A	C	F	A			
Petroleum oils and crude 200°F (95°C)	X	X	F	A	X	C	X	C	A	C	F	A			
Phosphoric acid, crude	A	C	C	C	C	A	C	C	A	A		A			
pure 45%	A	C	C	C	C	A	C	C	A	A		I			
Picric acid, molten	C	C	C	C	C		I					I			
water solution	A	C	F	F	A	A	I	A	A			I			
Potassium chloride	A	A	A	A	A	A	A	A	A	A	A	A			
Potassium cyanide	A	A	A	A	A	A	A	A	A	A	A	A			
Potassium hydroxide	F	F	C	C	A	A	A	A	C	A	A	A			
Potassium sulfate	A	A	A	A	A	A	A	A	A	A	A	A			
Propane	X	X	F	A	X	F	X	A	A	A	A	A			
Sewage	C	C	F	A	C	A	C	C	A		I	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	A	A	A	A	A	A	A	A	A	A	A	A			
Sodium bisulfate	A	A	A	A	A	A	A	A	A	A	A	A			
Sodium chloride	A	A	A	A	A	A	A	A	A	A	A	A			
Sodium cyanide	A	A	A	A	A	A	A	A	A	A	A	A			
Sodium hydroxide	F	F	C	C	A	C	A	A	C	A	F	A			
Sodium hypochlorite	X	X	X	X	A	F	A	C	A	A	F	F			
Sodium metaphosphate	A	A	C	A	A	F	A	A	A	A	I	A			
Sodium nitrate	C	C	C	C	A	A	A	C		A	A	A			
Sodium perborate	C	C	C	C	A	A	A	A	A						
Sodium peroxide	C	C	C	C	A	A	A	C	A			A			
Sodium phosphate, monobasic	A	F	C	F	A	A	A	A	A	A	A	A			
dibasic	A	F	C	F	A	A	A	A				A			
tribasic	A	F	C	F	A	A	A	A				A			
Sodium silicate	A	A	A	A	A	A	A	A	A	A	I	A			
Sodium sulfate	A	A	A	A	A	A	A	A	A	A	A	A			
Sodium sulfide	A	A	A	A	A	A	A	A	A	A	I	A			
Sodium thiosulfate, "hypo"	A	A	A	A	A	A	A	A	A	A	A	A			
Soybean oil	X	C	F	A	A	A	A	A	A	A	A	A			
Stannic chloride	A	A	A	A	F	A	F	A	A	A	I	A			
Steam 450°F (230°C)	C	C	C	C	A	A	F	C	X		X	X			
Stearic acid	X	X	C	F	F	C	F	A	I		F	A			
Sulfur	F	F	A	F	A	A	A	F	A		F	C			
Sulfur chloride	X	X	C	C	X	A	X	C	A			A			
Sulfur dioxide, dry	C	C	C	C	C	A	C	A	A		I	I			
Sulfur trioxide, dry	X	C	C	C	C	F	C	A	A			I			
Sulfuric acid, 10%	A	A	A	A	A	A	A	A	A	A	A	A			

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TECHNICAL DATA

ELASTOMERS

Commonly used Elastomers:

Special Elastomers:

MATERIAL	NR lor IR	SBR	CR	NBR	IIR	CSM	EPDM	MQ	FKM	CM	ECO CO	XLPE
(Maximum Temperature 100° F (38° C) Unless Otherwise Specified)												
11%-75%	C	C	C	C	F	A	C	C	A	A	F	A
76%-95%	X	X	X	X	C	A	X	X	A	X	X	A
fuming	X	X	X	X	X	X	X	X	X	X	X	X
Sulfurous acid	C	C	C	C	C	A	C	C	A	A	C	A
Tannic acid	A	C	A	C	A	A	A	A	A	A	I	A
Tar	X	X	C	C	X	C	X	C	F		F	X
Tartaric acid	A	C	C	C	F	A	F	A	A	A	F	A
Toluene, toluol	X	X	X	C	X	X	X	C	A	C	X	A
Trichloroethylene	X	X	X	X	X	X	X	C	A	C	X	A
Turpentine	X	X	X	F	X	X	X	C	A	F	A	A
Vinegar	C	C	C	C	A	A	A	A	A	A		A
Water, acid mine	A	A	C	A	A	A	A	A	A	A	I	A
Water, fresh	A	A	C	A	A	A	A	A	A	A	A	A
distilled	A	A	C	A	A	A	A	A	A	A	A	A
Whiskey and wines	A	A	A	C	A	A	A	A	A	A	I	A
Xylene.xylol	X	X	X	C	X	X	X	C	A	X	X	A
Zinc chloride	C	C	C	C	A	A	A	A	A	A	I	A
Zinc sulfate	A	A	A	A	A	A	A	A	A	A	I	A

NOZZLES - SPECS

Nozzle Style & Size	Inlet PSI	Pressure KPA	Straight GPM	Stream IPM	30 GPM	30 IPM	60 GPM	60 IPM	90 GPM	90 IPM
10464 1"	50	345	18	68	21	79	24	91	27	102
	75	517	22	83	25	95	28	106	32	121
	100	690	24	91	28	106	32	121	36	136
10464 1-1/2"	50	345	45	170	50	189	55	208	60	227
	75	517	50	189	55	208	65	246	75	284
	100	690	55	208	60	227	75	284	85	322
10464 2-1/2"	50	345	90	341	120	454	130	492	145	549
	75	517	100	379	140	530	150	568	180	681
	100	690	110	416	165	625	180	681	205	776

Threads Per Inch

1-1/2" Size	2.100 (NYFD)	1.990 (NST)	2.093 (NYCORP)	1.878 (NPSH)
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Threads Per Inch

	6"	7"	7-1/2"	8"
2-1/2"	3.058	3.13	2.990 (CHICAGO)	3.062
	3.093		3.062 (NST)	3.093
	3.125		3.125 (DETROIT)	3.140
	3.156			3.156
	3.187			3.312
	3.234			3.031 (NYFD)
	3.250			3.00 (NY CORP)
	3.312			2.841 (NPSH)
	3.062 (PITTSBURGH)			3.78 (CLEVELAND)

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