



**JK Pioneer**

Hydraulic & Industrial Hoses



## Hose Shelf life

Hose and hose assemblies are affected by exposure to ozone, oxygen, heat, sunlight, rain, and other similar environmental factors. Storage of bulk hose and hose assemblies should be in such a manner that exposure to these environmental factors is controlled as much as possible.

Hose and hose assemblies should be stored, handled, shipped and used in such a manner as to facilitate first-in first-out usage, based on manufacturing date marked on the hose or hose assembly.

### Shelf life Guidelines as per BS 5244 for Hydraulic Hose .

- 4.2 Hoses and Hose assemblies stored as separate items
  - 4.2.1 Before fitting, all hose assemblies should be subjected to visual examination for evidences of deterioration.
  - 4.2.2 The recommendations in Tables 1 & 2 apply to stored hoses and assemblies depending on their age.

Table 1. Test recommendations for Hoses	
Age	Recommendations
Upto 3 years	Use without further testing.
3 to 5 years	Use after representative samples subjected to a proof pressure test.
5 to 8 years	Use after representative samples subjected to Proof, Impulse and Burst test ,Cold bend test & Electrical tests.
Over 8 Years	Scrap

Table 2. Test recommendations for Hose Assemblies	
Age	Recommendations
Upto 3 years	Use without further testing.
3 to 5 years	Use after subjecting each assembly to a pressure test of 1.5 x design working pressure & representative samples subjected to a Burst Pressure test.
5 to 8 years	As for 3 to 5 years plus Impulse Pressure test, Cold bend test & Electrical tests on representative samples.
Over 8 Years	Scrap

## Hose service Life

All Rubber Hoses-Hydraulic & Industrial have a limited life on a given application. Even though correct Hose has been selected for the application, its service life can be still adversely affected by many variable conditions.

### Major factors are,

1. Continuous use at maximum rated working pressure including pressure surges.
2. Continuous use at maximum recommended operating temperature
3. Continuous use at minimum bend radius or, even lower than MBR.
4. Failure to follow proper selection, installation, maintenance.
5. External Abuse such as run over by heavy load/ Vehicle, rubbing against metallic structures, occasionally hit by Stone chips.

### It is recommended

- # Inspect hose assemblies regularly for damage, cracks, leaks.
- # Replace hose with wear or damage



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## Hose Bend Radius & its significance:

When we bend the Hose, Hose OD at bend portion starts decreasing & the area starts flattening. Tube & Cover at Bend portion becomes stretched & thinner & reinforcement pattern also changes, as a result Pressure resistance of a bend Hose decreases considerably. Bending beyond its minimum Bend radius decreases Hose life significantly. If the bend is severe the hose may kink.

Most of the spec allows the flattening up to 10% of original OD & corresponding bend radius is called **Minimum Bend radius** of that Hose.

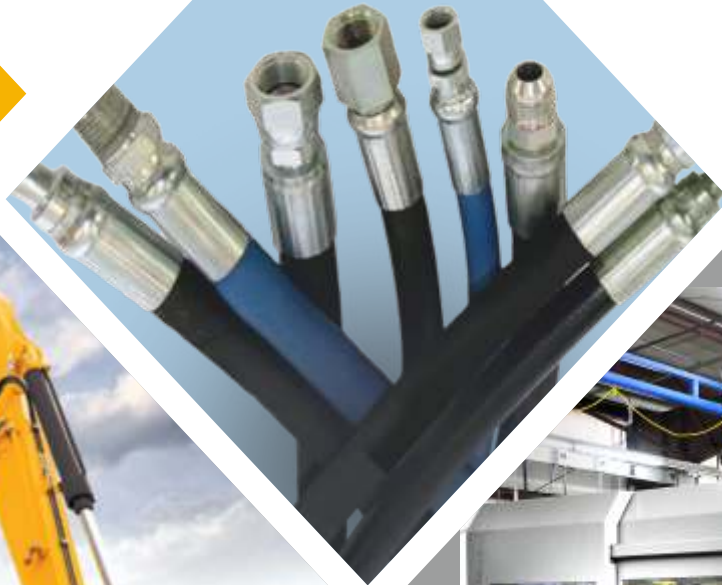
It is never a good idea to use a hose past the minimum bend radius. When a hose is bent beyond its rated bend radius it restricts flow, decreases the life of the hose, and may cause kinking and failure. When the hose bursts at the outside bend it will often be due to the excessive bend and there may be broken wires in the area of the failure. If it is on a vacuum or suction application the hose may be flattened out in the bend area, which can reduce or restrict flow.

### When A Hose Goes Beyond Its Rated Bend Radius

- Restricts Flow
- Decreases Life of Hose
- May Cause Kinking

# JK Pioneer

## HYDRAULIC HOSES





## Easy steps to select a proper Hydraulic hose

Proper hose selection is critical to a safe hydraulic system. JK Fenner has used term STAMPER for easy remembering these parameters. Parameters on which the Hose is selected are as per below,

**S**

• Size of Hose :Size of Hose is mostly known by Inside Diameter (ID) of the hose, irrespective of Outer diameter of Hose. This differs from Steel Tube, where size is OD of the Tube.

**Correct ID** - minimize pressure loss and ensure adequate delivery volume.

**Correct OD** - critical factor for coupling compatibility, routing clamps.

**T**

• Temperature at which Hose to work.Hose must withstand minimum and maximum temperature in system. Very High and Very low temperatures have very severe effect on Hose life

Exceeding hose temperature ratings may significantly reduce hose life. Select hose so the fluid and ambient temperatures, both static and transient, fall within the hose ratings. The effects of external heat sources should not raise the temperature of the hose above its maximum operating temperature.

Select hose, heat shields, sleeving, and other methods for these requirements, and route or shield hose to avoid hose damage from external heat sources.

**A**

• Application of Hose .Application of Hose & its Environmental conditions can cause hose and fitting degradation. Conditions to evaluate include, UV Rays, Saltwater, Ozone, Chemicals, Vibration, Government & industry standards, Abrasion & Bend Radius-Routing requirements.

**M**

• Media or, Material which Flows thru Hose. Hose must be compatible with the medium being conveyed. Compatibility must cover not just tube but the cover, Hose fittings & O rings as well. Permeation, or effusion, is seepage of fluid through the hose. Certain materials in hose construction are more permeable than others. Consider the effects of permeation when selecting hose, especially with gaseous fluids.

**P**

• Pressure inside the Hose. While considering Hose Pressure, it is important to know both the system working Pressure & any surge or, spikes in pressure.

Hose selection must be made so that the published working Pressure of the Hose is equal to or, greater than the maximum system pressure.

What is the Maximum operating pressure.

How much Pressure spikes or surges

How much safety factor or, Burst Pressure

How much Pressure drop allowed i.e. loss of pressure over length of Hose

**E**

• Ends of Hose. How Hose is connected to Port. Fittings type, termination. End connection/fittings plays major role in hose performance & fitments. Hence, End connection / fitting needs to be select with utmost care.

**R**

• Rate of Flow thru Hose( Flow velocity).The performance of the hose & life span depends on volume & velocity of the material conveyed through the hose. In order to achieve maximum efficiency in a hydraulic system, it is necessary to keep pressure losses (resistance to the volumetric flow) to a minimum when a fluid is conveyed. When a fluid flows through a flow line, heat is generated by friction. Thus part of the energy is lost as heat energy, which results in a pressure loss.

**Under-sizing causes pressure loss.**

**Over-sizing adds unnecessary cost, weight, and Space.**



## APPLICATION TEMPERATURE LIMITS FOR JK FENNER HYDRAULIC HOSES WITH DIFFERENT FLUID MEDIA.

Hydraulic Hose service life depends on selecting Proper Hose & Hot Fluid media. Same Hose with different media works at different performance level.

Media temperatures can have a much greater impact on hose life. The maximum rated temperature of a Hose is specific to the media,

Following this will improve Hose life at that particular application.

Hoses	Hydraulic Oils		Water, Water/Oil Emulsion & Water/Glycol Solutions	
	Pressure Line	Return Line	Pressure Line	Return Line
R1,R2,R3,R6,R16/2SC,R17,R19 & 1SC ( Normal as well as Rhinotuff cover)	+100°C (212 °F)	+100°C (212 °F)	+93°C (200 °F)	+82°C (180 °F)
R1HT, R6HT	+135°C (275 °F)	+135°C (275 °F)	+107°C (225 °F)	+82°C (180 °F)

1. **DONOT** expose Hose to Maximum rated Working Pressure & Maximum rated Temperature simultaeously.
2. **DONOT** Exceed the Fluid Manufacturer recommended Maximum operating temperature for that Fluid.
3. **INTERMITTENT OPERATING TEMPERATURE** should not exceed 10% of operating time & it should be a short time temperature surge.



## Hydraulic Hose ID Chart

"Hydraulic Hose industry has adopted a system where ID measuring & Expressed in DASH NUMBERS to indicate Hose & coupling Size.

This Dash Number denotes Hose ID in sixteenth of an inch. Exception to this is SAE100R5 & SAE100R14."

HYDRAULIC HOSE ID CHART					
DASH NO.	Metric DN	ALL Except SAE100R5 & SAE100R14		Only for SAE100R5 & SAE100R14	
		Inches	mm	Inches	mm
-2	-	1/8	3.2	-	
-3	5	3/16	4.8	-	
-4	6	1/4	6.4	3/16	4.8
-5	8	5/16	7.9	1/4	6.4
-6	10	3/8	9.5	5/16	7.9
-8	12	1/2	12.7	3/8	9.5
-10	16	5/8	15.9	1/2	12.7
-12	19	3/4	19	5/8	15.9
-14	22	7/8	22.2	-	-
-16	25	1	25.4	7/8	22.2
-20	31	1-1/4	31.8	1-1/8	28.6
-24	38	1-1/2	38.1	1-3/8	34.9
-32	51	2	50.8	1-13/16	46
-36	58	2-1/4	57.6	-	-
-40	63	2-1/2	63.5	2-3/8	60.3
-48	76	3	76.2	-	-
-56	89	3-1/2	88.9	-	-
-64	102	4	101.6	-	-





## High Abrasion resistance Rhinotuff Hoses



JK Pioneer Hoses with Rhinotuff cover protects Hose from excessive abrasion. Hoses are 10 times better abrasion resistance compared to ISO 6945 requirement. Hoses available with Rhinotuff cover are SAE100R1/R2/R16/R17/R19/EN857 1SC /2SC.

### Features:

- Cover exceeds ISO 6945 Abrasion resistance.
- MSHA Approved Cover.
- Alternate to Protective sleeves in application requiring Abrasion resistance."



## SAE Recommended Practices for Hydraulic Hose & Hose assemblies

"The SAE J1273 guidelines recommend practices while selecting ,routing, Fabricating, Installing, Replacing, Maintaining & Storing Hose for Fluid Power systems.

SAE J1273 Stanadrd recommends following good practices which can increase life of Hose assembly. Damaged or, worn out assemblies must be replaced immediately. Standard recommends Hose assemblies in use should be inspected regularly for leaks, Kinks, Cover Blisters, Cover Abrasions & other damages. Not Complying these recommendations may result ion serious Personal Injury or, property Damage.

These recommended pratcices take into account Safety of Human & Systems, maximising life of Hose & Hose assemblies.

1. Select Proper Hose for the application. Simply matching ID/OD is not enough but it should be along with type of Hose.
2. Hydraulic Components selection should also be based on application Temperature, Pressure and Bend Radius. Don't exceed recommended component limits.
3. Hose must not be Stretched. Kinked, Crushed or, twisted while installing or, during its use. Hose must not be bent to less than its recommended minimum Bend Radius."

### SAE Recommended Practices for Hydraulic Hose & Hose assemblies Correct Hose Assembly installation:

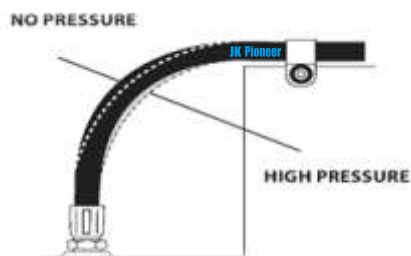
Hose Assembly installation should comply with Hose routing standard SAE J 1273.

The Following Diagrams show Proper Hose installations which provide Maximum performance & cost savings.

#### LENGTH CHANGE

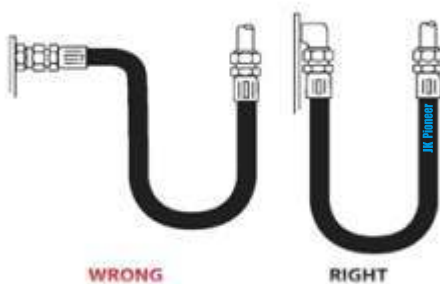


When hose installation is straight, allow enough slack in hose line to provide for length changes which will occur when pressure is applied.

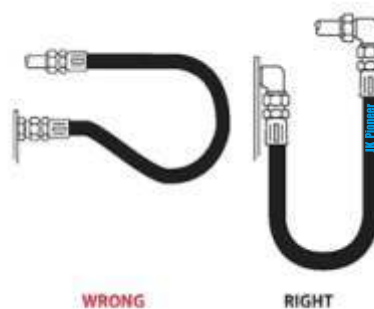


To allow for length changes when hose is pressurized, do not clamp at bends so that curves will absorb changes. Do not clamp high and low pressure lines together.

#### TIGHT BEND



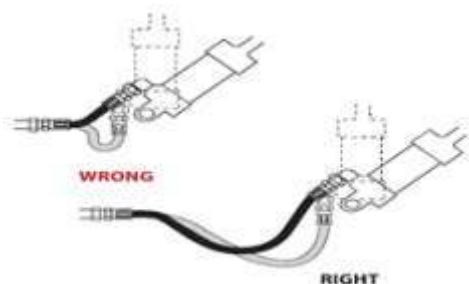
Use proper angle adapters to avoid tight bends in hose.



When radius is below the required minimum, use an angle adapter to avoid sharp bends.

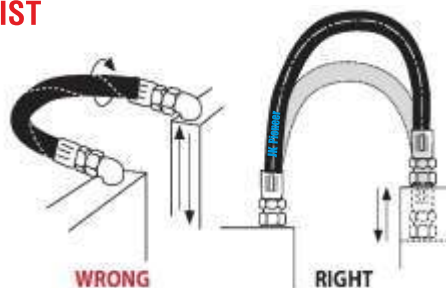


**MOVEMENT / FLEXING**



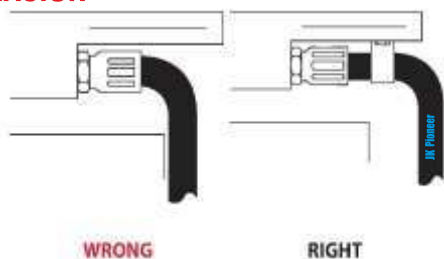
Adequate hose length is necessary to distribute movement on flexing applications and to avoid abrasion.

**TWIST**



Prevent twisting and distortion by bending hose in the same plane as the motion of the port to which hose is connected.

**ABRASION**



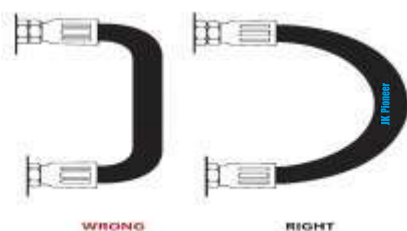
Use proper angle adapters to avoid tight bends in hose.

**STRAIN**



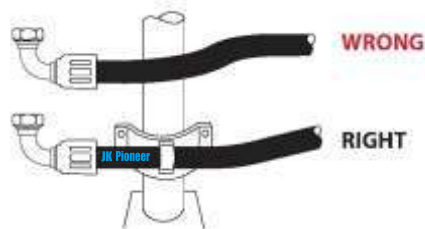
When radius is below the required minimum, use an angle adapter to avoid sharp bends.

**COLLAPSE**



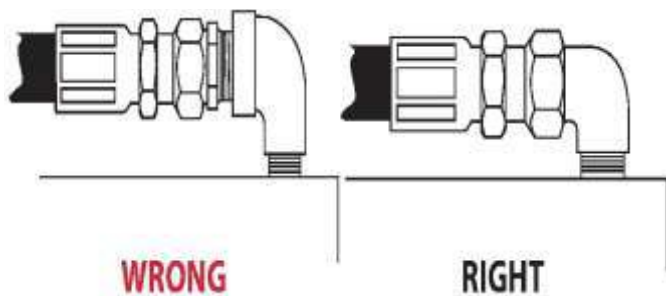
To avoid hose collapse and flow restriction, keep hose bend radius as large as possible. Refer to hose specification tables for minimum bend radius.

**HIGH HEAT**



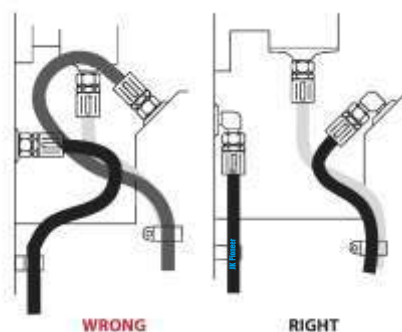
High ambient temperatures shorten hose life, so make sure hose is kept away from hot parts. Insulate the hose with sleeving if this isn't possible.

**REDUCE CONNECTIONS**



To avoid hose collapse and flow restriction, keep hose bend radius as large as possible. Refer to hose specification tables for minimum bend radius.

**APPEARANCE**



High ambient temperatures shorten hose life, so make sure hose is kept away from hot parts. Insulate the hose with sleeving if this isn't possible.



**JK Pioneer SAE 100R1 AT/EN 853 1SN  
1- WIRE BRAID HYDRAULIC HOSE  
FLAME RESISTANCE 'MSHA' COVER**



Tube: Specially compounded Oil resistance NBR-Black  
 Reinforcement: One Braid of High Tensile Steel wire.  
 Cover: Oil & Ozone resistance NBR/PVC –Black.(CR Cover available on request) MSHA certified.  
 Working Temperature: -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.  
 MAIN APPLICATIONS Medium pressure hydraulic lines, fuel oil, antifreeze solutions,air and water. Conforms to SAE100R1/EN853 1SN & ISO 1436-1 Specifications. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD MM	WIRE BRAID OD MM	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS MM
	INCH	MM			PSI	BAR	PSI	BAR	
3 R1	3/16	4.8	11.80	9.6	3625	250	14500	1000	90
4 R1	1/4	6.3	13.1	10.90	3265	225	13060	900	100
5 R1	5/16	8.0	14.50	12.40	3120	215	12480	860	115
6 R1	3/8	9.5	17.50	15.30	2610	180	10440	720	125
8 R1	1/2	12.5	20.30	18.0	2320	160	9280	640	180
10 R1	5/8	15.9	23.6	21.3	1885	130	7540	520	205
12 R1	3/4	19.0	27.7	25.4	1525	105	6100	420	240
16 R1	1	25.0	35.6	33.5	1275	88	5100	352	300
20 R1	1-1/4	31.5	43.7	40.8	915	63	3660	252	420
24 R1	1-1/2	38.0	50	47.3	725	50	2900	200	500
32 R1	2	51.0	64.5	61	580	40	2320	160	630

**JK Pioneer Rhinotuff Cover  
SAE 100R1 AT/EN 853 1SN  
1- WIRE BRAID HYDRAULIC HOSE  
FLAME RESISTANCE 'MSHA' COVER**



Tube: Specially compounded Oil resistance NBR-Black  
 Reinforcement: One Braid of High Tensile Steel wire.  
 Cover: High Abrasion resistance,Oil & Ozone resistance Synthetic Rubber- MSHA certified.  
 Working Temperature: -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.  
 MAIN APPLICATIONS Medium pressure hydraulic lines, fuel oil, antifreeze solutions,air and water. Conforms to SAE100R1/EN853 1SN & ISO 1436-1 Specifications. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD MM	WIRE BRAID OD MM	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS MM
	INCH	MM			PSI	BAR	PSI	BAR	
4 R1 Rhinotuff	1/4	6.3	13.1	10.90	3265	225	13060	900	100
5 R1 Rhinotuff	5/16	8.0	14.50	12.40	3120	215	12480	860	115
6 R1 Rhinotuff	3/8	9.5	17.50	15.30	2610	180	10440	720	125
8 R1 Rhinotuff	1/2	12.5	20.3	18.0	2320	160	9280	640	180
10 R1 Rhinotuff	5/8	15.9	23.6	21.3	1885	130	7540	520	205
12 R1 Rhinotuff	3/4	19.0	27.7	25.4	1525	105	6100	420	240
16 R1 Rhinotuff	1	25.0	35.6	33.3	1275	88	5100	352	300
20 R1 Rhinotuff	1-1/4	31.5	43.7	40.8	915	63	3660	252	420
24 R1 Rhinotuff	1-1/2	38.0	50	47.3	725	50	2900	200	500
32 R1 Rhinotuff	2	51.0	64.5	61	580	40	2320	160	630



**JK Pioneer SAE 100R2 AT/EN 853 2SN  
2- WIRE BRAID HYDRAULIC HOSE  
FLAME RESISTANCE 'MSHA' COVER**



**Tube:** Specially compounded Oil resistance NBR-Black  
**Reinforcement:** Two Braid of High Tensile Steel wire.  
**Cover:** Oil & Ozone resistance NBR/PVC –Black. (CR Cover available on request) MSHA Certified.  
**Working Temperature:** -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.  
**MAIN APPLICATIONS** High pressure hydraulic lines, fuel oil, antifreeze solutions, air and water. Conforms to SAE100R2/EN853 2SN & ISO 1436-2 Specifications. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 R2	1/4	6.3	15.0	13.1	5800	400	23200	1600	100
5 R2	5/16	8.0	16.5	14.4	5075	350	20300	1400	115
6 R2	3/8	9.5	18.6	16.6	4785	330	19140	1320	125
8 R2	1/2	12.5	22.3	19.9	4000	275	16000	1100	180
10 R2	5/8	15.9	25.2	22.80	3625	250	14500	1000	205
12 R2	3/4	19.0	29.2	26.9	3120	215	12480	860	240
16 R2	1	25.0	37.3	34.8	2395	165	9580	660	300
20 R2	1-1/4	31.5	46.8	44.0	1815	125	7260	500	420
24 R2	1-1/2	38.0	54.5	50.7	1305	90	5220	360	500
32 R2	2	51.0	66.8	63.50	1160	80	4640	320	630

**JK Pioneer Rhinotuff Cover  
SAE 100R2 AT/EN 853 2SN  
2- WIRE BRAID HYDRAULIC HOSE  
FLAME RESISTANCE 'MSHA' COVER**



**Tube:** Specially compounded Oil resistance NBR-Black  
**Reinforcement:** Two Braid of High Tensile Steel wire.  
**Cover:** High Abrasion resistance, Oil & Ozone resistance Synthetic Rubber- MSHA certified.  
**Working Temperature:** -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.  
**MAIN APPLICATIONS** High pressure hydraulic lines, fuel oil, antifreeze solutions, air and water. Conforms to SAE100R2/EN853 2SN & ISO 1436-2 Specifications. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 R2 Rhinotuff	1/4	6.3	15.0	13.1	5800	400	23200	1600	100
5 R2 Rhinotuff	5/16	8.0	16.5	14.4	5075	350	20300	1400	115
6 R2 Rhinotuff	3/8	9.5	18.6	16.6	4785	330	19140	1320	125
8 R2 Rhinotuff	1/2	12.5	22.3	19.9	4000	275	16000	1100	180
10 R2 Rhinotuff	5/8	15.9	25.2	22.80	3625	250	14500	1000	205
12 R2 Rhinotuff	3/4	19.0	29.2	26.9	3120	215	12480	860	240
16 R2 Rhinotuff	1	25.0	37.3	34.8	2395	165	9580	660	300
20 R2 Rhinotuff	1-1/4	31.5	48.8	44.0	1815	125	7260	500	420
24 R2 Rhinotuff	1-1/2	38.0	54.5	50.7	1305	90	5220	360	500
32 R2 Rhinotuff	2	51.0	66.6	63.50	1160	80	4640	320	630



## JK Pioneer COMPACT HOSES EN 857 1SC 1- WIRE BRAID HYDRAULIC HOSE FLAME RESISTANCE 'MSHA' COVER



**Tube:** Specially compounded Oil resistance NBR-Black  
**Reinforcement:** One Braid of High Tensile Steel wire.  
**Cover:** Oil & Ozone resistance NBR/PVC –Black.(CR Cover available on request) MSHA certified.  
**Working Temperature:** -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.  
**MAIN APPLICATIONS** Medium pressure hydraulic lines, fuel oil, antifreeze solutions,air and water.  
 Conforms to EN 857 1SC Specifications. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 1SC	1/4	6.3	12.6	10.4	3250	225	13000	900	75
5 1SC	5/16	8.0	13.9	11.9	3100	215	12400	860	85
6 1SC	3/8	9.5	15.9	13.8	2610	180	10440	720	90
8 1SC	1/2	12.5	19.2	17.2	2320	160	9280	640	130
10 1SC	5/8	15.9	22.7	20.6	1885	130	7540	520	150
12 1SC	3/4	19.0	26.1	23.8	1525	105	6100	420	180
16 1SC	1	25.0	33.5	31.4	1275	88	5100	352	230
20 1SC	1-1/4	31.5	41.3	38.8	915	63	3660	252	315
24 1SC	1-1/2	38.0	47.5	44.8	725	50	2900	200	375
32 1SC	2	50.0	61.8	58.5	580	40	2320	160	475

## JK Pioneer Rhinotuff Cover COMPACT HOSES EN857 1SC 1- WIRE BRAID HYDRAULIC HOSE FLAME RESISTANCE 'MSHA' COVER



**Tube:** Specially compounded Oil resistance NBR-Black  
**Reinforcement:** One Braid of High Tensile Steel wire.  
**Cover:** High Abrasion resistance,Oil & Ozone resistance Synthetic Rubber- MSHA certified.  
**Working Temperature:** -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.  
**MAIN APPLICATIONS** Medium pressure hydraulic lines, fuel oil, antifreeze solutions,air and water.  
 Conforms to EN 857 1SC Specifications up to 1". Rest three sizes 1-1/4" - 2" JK Proprietary spec.  
 Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 1SC Rhinotuff	1/4	6.3	12.6	10.4	3250	225	13000	900	75
5 1SC Rhinotuff	5/16	8.0	13.9	11.9	3100	215	12400	860	85
6 1SC Rhinotuff	3/8	9.5	15.9	13.8	2610	180	10440	720	90
8 1SC Rhinotuff	1/2	12.5	19.2	17.2	2320	160	9280	640	130
10 1SC Rhinotuff	5/8	15.9	22.7	20.6	1885	130	7540	520	150
12 1SC Rhinotuff	3/4	19.0	26.1	23.8	1525	105	6100	420	180
16 1SC Rhinotuff	1	25.0	33.5	31.4	1275	88	5100	352	230
20 1SC Rhinotuff	1-1/4	31.5	41.3	38.8	915	63	3660	252	315
24 1SC Rhinotuff	1-1/2	38.0	47.5	44.8	725	50	2900	200	375
32 1SC Rhinotuff	2	50.0	61.8	58.5	580	40	2320	160	475



## JK Pioneer SAE 100R16/EN 857 2SC 2- WIRE BRAID HYDRAULIC HOSE FLAME RESISTANCE 'MSHA' COVER



**Tube:** Specially compounded Oil resistance NBR-Black  
**Reinforcement:** Two Braid of High Tensile Steel wire.  
**Cover:** Oil & Ozone resistance NBR/PVC –Black. (CR Cover available on request) MSHA Certified.  
**Working Temperature:** -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.  
**MAIN APPLICATIONS** High pressure hydraulic lines, fuel oil, antifreeze solutions, air and water.  
 Conforms to SAE100R16/EN857 2SC Specifications UP TO 1-1/4".  
 Rest two sizes 1-1/2" - 2" JK Proprietary spec. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 2SC	1/4	6.3	13.9	12.0	5800	400	23200	1600	75
5 2SC	5/16	8.0	15.0	13.0	5075	350	20300	1400	85
6 2SC	3/8	9.5	17.5	15.4	4780	330	19120	1320	90
8 2SC	1/2	12.5	20.8	18.50	4000	275	16000	1100	90
10 2SC	5/8	15.9	24.2	22.0	3625	250	14500	1000	100
12 2SC	3/4	19.0	27.8	25.6	3120	215	12480	860	120
16 2SC	1	25.0	35.2	33.2	2395	165	9580	660	150
20 2SC	1-1/4	31.5	43.5	41.0	1810	125	7240	500	210
24 2SC	1-1/2	38.0	51.3	48.5	1450	100	5800	400	300
32 2SC	2	50.0	63.2	60.6	1305	90	5220	360	400

## JK Pioneer Rhinotuff Cover COMPACT HOSE SAE 100R16/EN 857 2SC 2- WIRE BRAID HYDRAULIC HOSE FLAME RESISTANCE 'MSHA' COVER



**Tube:** Specially compounded Oil resistance NBR-Black  
**Reinforcement:** Two Braid of High Tensile Steel wire.  
**Cover:** High Abrasion resistance, Oil & Ozone resistance Synthetic Rubber- MSHA certified.  
**Working Temperature:** -40 °C to +100 °C continuous operation. For Air max Temperature = +70 °C.  
**MAIN APPLICATIONS** High pressure hydraulic lines, fuel oil, antifreeze solutions, air and water.  
 Conforms to SAE100R16/EN857 2SC Specifications UP TO 1-1/4".  
 Rest two sizes 1-1/2" - 2" JK Proprietary spec. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish. Sizes 1" up to 2" will be available in Wrap finish only.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 2SC Rhinotuff	1/4	6.3	13.9	12.0	5800	400	23200	1600	75
5 2SC Rhinotuff	5/16	8.0	15.0	13.0	5075	350	20300	1400	85
6 2SC Rhinotuff	3/8	9.5	17.5	15.4	4780	330	19120	1320	90
8 2SC Rhinotuff	1/2	12.5	20.8	18.50	4000	275	16000	1100	90
10 2SC Rhinotuff	5/8	15.9	24.2	22.0	3625	250	14500	1000	100
12 2SC Rhinotuff	3/4	19.0	27.8	25.6	3120	215	12480	860	120
16 2SC Rhinotuff	1	25.0	35.2	33.2	2395	165	9580	660	150
20 2SC Rhinotuff	1-1/4	31.5	43.5	41.0	1810	125	7240	500	210
24 2SC Rhinotuff	1-1/2	38.0	51.3	48.50	1450	100	5800	400	300
32 2SC Rhinotuff	2	50.0	63.2	60.6	1305	90	5220	360	400



**JK Pioneer ISOBARIC - CONSTANT PRESSURE  
COMPACT HOSE SAE 100R17/ISO11237  
R17 WIRE BRAID HYDRAULIC HOSE  
FLAME RESISTANCE 'MSHA' COVER**



**Tube:** Specially compounded Oil resistance NBR-Black  
**Reinforcement:** One or, Two Braid of High Tensile Steel wire.  
**Cover:** Oil, Abrasion & Ozone resistance NBR/PVC –Black. (CR Cover available on request) MSHA Certified.  
**Working Temperature:** From -40 °C to +100 °C continuous operation. Intermittent +120°C  
 For Air max Temperature = +70 °C.

**MAIN APPLICATIONS** Medium pressure hydraulic line. Suitable for petroleum based hydraulic fluids, synthetic ester, biodegradable hydraulic fluids, water-glycol based fluids and lubricating oil Conforms to SAE 100R17/ISO11237 R17 Specifications.  
 Cover Finish available from 1/4" to 1" ID in smooth & Wrap finish.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 R17	1/4	6.3	12.50	10.50	3050.00	210.00	12200.00	840.00	50.00
5 R17	5/16	8.0	14.00	12.30	3050.00	210.00	12200.00	840.00	55.00
6 R17	3/8	9.5	16.40	14.40	3050.00	210.00	12200.00	840.00	65.00
8 R17	1/2	12.5	20.20	18.00	3050.00	210.00	12200.00	840.00	90.00
10 R17	5/8	15.9	24.90	22.90	3050.00	210.00	12200.00	840.00	100.00
12 R17	3/4	19.0	28.80	26.60	3050.00	210.00	12200.00	840.00	120.00
16 R17	1	25.0	36.90	34.50	3050.00	210.00	12200.00	840.00	150.00

**JK Pioneer Rhinotuff Cover ISOBARIC  
CONSTANT PRESSURE COMPACT HOSE  
SAE 100R17/ISO11237  
R17 WIRE BRAID HYDRAULIC HOSE  
FLAME RESISTANCE 'MSHA' COVER**



**Tube:** Specially compounded Oil resistance NBR-Black  
**Reinforcement:** One or, Two Braid of High Tensile Steel wire.  
**Cover:** High Abrasion resistance, Oil & Ozone resistance Synthetic Rubber- MSHA certified.  
**Working Temperature:** From -40 °C to +100 °C continuous operation. Intermittent +120°C  
 For Air max Temperature = +70 °C.

**MAIN APPLICATIONS** Medium pressure hydraulic line. Suitable for petroleum based hydraulic fluids, synthetic ester, biodegradable hydraulic fluids, water-glycol based fluids and lubricating oil Conforms to SAE 100R17/ISO11237 R17 Specifications.  
 Cover Finish available from 1/4" to 1" ID in smooth & Wrap finish.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 R17 Rhinotuff	1/4	6.3	12.50	10.50	3050.00	210.00	12200.00	840.00	50.00
5 R17 Rhinotuff	5/16	8.0	14.50	12.30	3050.00	210.00	12200.00	840.00	55.00
6 R17 Rhinotuff	3/8	9.5	16.40	14.40	3050.00	210.00	12200.00	840.00	65.00
8 R17 Rhinotuff	1/2	12.5	20.20	18.00	3050.00	210.00	12200.00	840.00	90.00
10 R17 Rhinotuff	5/8	15.9	24.90	22.90	3050.00	210.00	12200.00	840.00	100.00
12 R17 Rhinotuff	3/4	19.0	28.80	26.60	3050.00	210.00	12200.00	840.00	120.00
16 R17 Rhinotuff	1	25.0	36.90	34.50	3050.00	210.00	12200.00	840.00	150.00





**JK Pioneer ISOBARIC-CONSTANT PRESSURE  
COMPACT HOSE SAE 100R19/ISO11237 R19  
WIRE BRAID HYDRAULIC HOSE  
FLAME RESISTANCE 'MSHA' COVER**

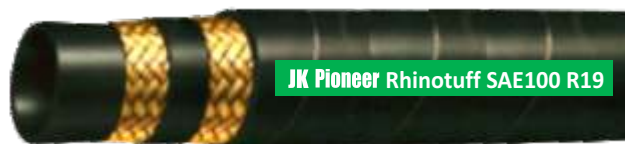


**Tube:** Specially compounded Oil resistance NBR-Black  
**Reinforcement:** Two Braid of High Tensile Steel wire.  
**Cover:** Oil, Abrasion & Ozone resistance NBR/PVC –Black. (CR Cover available on request) MSHA Certified.  
**Working Temperature:** From -40 °C to +100 °C continuous operation. Intermittent +120°C  
 For Air max Temperature = +70 °C.

**MAIN APPLICATIONS** Medium pressure hydraulic line. Suitable for petroleum based hydraulic fluids, synthetic ester, biodegradable hydraulic fluids, water-glycol based fluids and lubricating oil Conforms to SAE 100R17/ISO11237 R17 Specifications. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish.

PRODUCT	HOSE ID		NOM.HOSE OD MM	WIRE BRAID OD MM	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS MM
	INCH	MM			PSI	BAR	PSI	BAR	
4 R19	1/4	6.30	13.9	11.80	4050	280.00	16200.00	1120.00	50.00
5 R19	5/16	8.00	15.10	13.10	4050	280.00	16200.00	1120.00	55.00
6 R19	3/8	9.50	17.50	15.40	4050	280.00	16200.00	1120.00	65.00
8 R19	1/2	12.50	20.8	18.50	4050	280.00	16200.00	1120.00	90.00
10 R19	5/8	15.90	25.70	23.4	4050	280.00	16200.00	1120.00	100.00

**Rhinotuff Cover CONSTANT PRESSURE  
COMPACT HOSE SAE 100R19/ISO11237 R19  
WIRE BRAID HYDRAULIC HOSE  
FLAME RESISTANCE 'MSHA' COVER**



**Tube:** Specially compounded Oil resistance NBR-Black  
**Reinforcement:** Two Braid of High Tensile Steel wire.  
**Cover:** Oil, Abrasion & Ozone resistance NBR/PVC –Black. (CR Cover available on request) MSHA Certified.  
**Working Temperature:** From -40 °C to +100 °C continuous operation. Intermittent +120°C  
 For Air max Temperature = +70 °C.

**MAIN APPLICATIONS** Medium pressure hydraulic line. Suitable for petroleum based hydraulic fluids, synthetic ester, biodegradable hydraulic fluids, water-glycol based fluids and lubricating oil Conforms to SAE 100R17/ISO11237 R17 Specifications. Cover Finish available from 1/4" to 3/4" ID in smooth & Wrap finish.

PRODUCT	HOSE ID		NOM.HOSE OD MM	WIRE BRAID OD MM	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS MM
	INCH	MM			PSI	BAR	PSI	BAR	
4 R19 Rhinotuff	1/4	6.30	13.90	11.80	4050	280.00	16200.00	1120.00	50.00
5 R19 Rhinotuff	5/16	8.00	15.10	13.10	4050	280.00	16200.00	1120.00	55.00
6 R19 Rhinotuff	3/8	9.50	17.50	15.40	4050	280.00	16200.00	1120.00	65.00
8 R19 Rhinotuff	1/2	12.50	20.80	18.50	4050	280.00	16200.00	1120.00	90.00
10 R19 Rhinotuff	5/8	15.90	25.57	23.4	4050	280.00	16200.00	1120.00	100.00



**JK Pioneer ISOBARIC- CONSTANT PRESSURE  
COMPACT HOSE CP 350  
WIRE BRAID HYDRAULIC HOSE  
FLAME RESISTANCE 'MSHA' COVER**



- Tube:** Specially compounded Oil resistance NBR-Black
- Reinforcement:** Two Braid of High Tensile Steel wire.
- Cover:** Oil, Abrasion & Ozone resistance NBR/PVC –Black. (CR Cover available on request) MSHA Certified.
- Working Temperature:** -40 °C to +100 °C continuous operation. Intermittent +120°C For Air max Temperature +70 °C.
- MAIN APPLICATIONS** Medium pressure hydraulic line. Suitable for petroleum based hydraulic fluids, synthetic ester, biodegradable hydraulic fluids, water-glycol based fluids and lubricating oil Conforms to EN 18752 AC Specifications.

PRODUCT	HOSE ID		NOM.HOSE OD MM	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS BAR
	INCH	MM		PSI	BAR	PSI	BAR	
4 CP 350	1/4	6.30	13.90	5000	350.0	20000	1400.0	75.0
5 CP 350	5/16	8.00	15.10	5000	350.0	20000	1400.0	85.0
6 CP 350	3/8	9.50	18.0	5000	350.0	20000	1400.0	90.0
8 CP 350	1/2	12.50	21.0	5000	350.0	20000	1400.0	90.0

**JK Pioneer Rhinotuff Cover ISOBARIC  
CONSTANT PRESSURE COMPACT HOSE  
CP 350 WIRE BRAID HYDRAULIC HOSE  
FLAME RESISTANCE 'MSHA' COVER**



- Tube:** Specially compounded Oil resistance NBR-Black
- Reinforcement:** Two Braid of High Tensile Steel wire.
- Cover:** High, Abrasion Oil & Ozone resistance Synthetic Enibter MSHA Certified.
- Working Temperature:** -40 °C to +100 °C continuous operation. Intermittent +120°C For Air max Temperature +70 °C.
- MAIN APPLICATIONS** Medium pressure hydraulic line. Suitable for petroleum based hydraulic fluids, synthetic ester, biodegradable hydraulic fluids, water-glycol based fluids and lubricating oil Conforms to EN 18752 AC Specifications.

PRODUCT	HOSE ID		NOM.HOSE OD MM	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS BAR
	INCH	MM		PSI	BAR	PSI	BAR	
4 CP 350 Rhinotuff	1/4	6.3	13.80	5000	350	20000	1400	75
5 CP 350 Rhinotuff	5/16	8.0	15.0	5000	350	20000	1400	85
6 CP 350 Rhinotuff	3/8	9.50	18.0	5000	350	20000	1400	90
8 CP 350 Rhinotuff	1/2	12.5	21.0	5000	350	20000	1400	90



**JK Pioneer JACK HOSE IJ100  
Spec 2- WIRE BRAID HYDRAULIC HOSE  
FLAME RESISTANCE 'MSHA' COVER**



**Tube:** Specially compounded Oil resistance NBR-Black  
**Reinforcement:** Two Braid of High Tensile Steel wire.  
**Cover:** Oil, Abrasion & Ozone resistance NBR/PVC –Black. MSHA Certified.  
**Working Temperature:** From -40 °C to +100 °C continuous operation. Intermittent +120°C.  
 For Air max Temperature = +70 °C.  
**MAIN APPLICATIONS** Industrial Jack application Conforms to IJ100 R17 Specifications.  
 Cover Finish available in smooth & Wrap finish.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
4 JACK Hose	1/4	6.3	15.0	13.1	10500.00	725.00	21000.00	1450.00	100.00
6 JACK Hose	3/8	9.5	18.6	16.6	10500.00	725.00	21000.00	1450.00	125.00

**JK Pioneer SAE 100R6  
1-YARN BRAID  
HYDRAULIC HOSE SAE100 R6**



**Tube:** Specially compounded Oil resistance NBR-Black  
**Reinforcement:** One Braid of High tenacity yarn.  
**Cover:** Oil & Ozone resistance NBR/PVC –Black. (CR Cover available on request)  
**Working Temperature:** -40 °C to +100 °C continuous operation. Intermittent +120°C For Air max Temperature +70 °C.  
**MAIN APPLICATIONS** Hydraulic Applications in Low pressure lines, return lines & drain lines. Fuel oil, antifreeze solutions, air and water. Conforms to SAE100R6 Specification.

PRODUCT	HOSE ID		NOM.HOSE OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM		MM	PSI	BAR	PSI	
3 R6	3/16	4.8	11.3	500.0	34	2000	136	50.0
4 R6	1/4	6.30	12.40	400.0	28	1600	112	65.0
5 R6	5/16	8.00	14.00	400.0	28	1600	112	75.0
6 R6	3/8	9.50	16.0	400.0	28	1600	112	75.0
8 R6	1/2	12.50	19.70	400.0	28	1600	112	100.0
10 R6	5/8	15.90	23.20	350.0	24	1400	96	125.0
12 R6	3/4	12.50	26.40	300.0	21	1200	84	150.0
14 R6	7/8	22.00	29.80	215.0	15	860	60	165.0
16 R6	1	25.00	33.50	205.0	14	820	56	200.0



**JK Pioneer Hi Temp  
SAE 100R6 1-YARN BRAID  
HYDRAULIC HOSE**



**Tube:** Specially compounded Oil resistance NBR-Black  
**Reinforcement:** One Braid of High tenacity yarn.  
**Cover:** Oil & Ozone resistance NBR/PVC –Black. (CR Cover available on request)  
**Working Temperature:** From -40 °C to +135 °C continuous operation. For Air max T = +100 °C.  
**MAIN APPLICATIONS** Hydraulic Applications in Low pressure lines, return lines & drain lines. Fuel oil, antifreeze solutions, air and water. Conforms to SAE100R6 S Specification.

PRODUCT	HOSE ID		NOM.HOSE OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN.BEND RADIUS
	INCH	MM		PSI	BAR	PSI	BAR	
3 R6HT	3/16	4.8	11.3	500.0	34	2000	136	50.0
4 R6HT	1/4	6.30	12.80	400.0	28	1600	112	65.0
5 R6HT	5/16	8.00	14.00	400.0	28	1600	112	75.0
6 R6HT	3/8	9.50	15.90	400.0	28	1600	112	75.0
8 R6HT	1/2	12.50	19.50	400.0	28	1600	112	100.0
10 R6HT	5/8	15.90	23.00	350.0	24	1400	96	125.0
12 R6HT	3/4	19.50	26.20	300.0	21	1200	84	150.0
14 R6HT	7/8	23.00	29.80	215.0	15	860	60	165.0
16 R6HT	1	26.20	33.50	205.0	14	820	56	200.0

**JK Pioneer SAE 100R3  
2-YARN BRAID  
HYDRAULIC HOSE**



**Tube:** Specially compounded Oil resistance NBR-Black  
**Reinforcement:** Two Braid of High tenacity yarn.  
**Cover:** Oil & Ozone resistance NBR/PVC –Black. (CR Cover available on request)  
**Working Temperature:** From -40 °C to +100 °C continuous operation. For Air max T = +70 °C.  
**MAIN APPLICATIONS** Hydraulic Applications in Low pressure lines, return lines & drain lines. Fuel oil, antifreeze solutions, air and water. Conforms to SAE100R3 Specification.

PRODUCT	HOSE ID		NOM.HOSE OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN.BEND RADIUS
	INCH	MM		PSI	BAR	PSI	BAR	
4 R3	1/4	6.30	14.50	1250.00	86.00	5000.00	344.00	75.00
5 R3	5/16	8.00	17.80	1200.00	83.00	4800.00	332.00	100.00
6 R3	3/8	9.50	18.80	1125.00	78.00	4500.00	312.00	100.00
8 R3	1/2	12.50	23.70	1000.00	69.00	4000.00	276.00	125.00
10 R3	5/8	15.90	27.00	875.00	61.00	3500.00	244.00	140.00
12 R3	3/4	19.00	31.70	750.00	52.00	3000.00	208.00	150.00
16 R3	1	25.00	38.50	565.00	39.00	2260.00	156.00	200.00



## JK Pioneer Agrotrolley Hose 1- WIRE BRAID HYDRAULIC HOSE



Tube: Specially compounded Oil resistance NBR-Black  
 Reinforcement: One Braid of High Tensile Steel wire.  
 Cover: Oil & Ozone resistance NBR/PVC –Black.  
 Working Temperature: -40 °C to +100 °C continuous operation.  
 MAIN APPLICATIONS Tractor Trolley Application.

**CAUTION:** Don't use this hose as a replacement of SAE100R1 Hose.  
 Cover Finish available in smooth & Wrap finish.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
6 Ag Trolley 1-Wire	3/8	9.5	17.2	15.3	2450	170	7350	510	125
8 Ag Trolley 1-Wire	1/2	12.5	20.4	18.0	2000	140	6000	420	180

## JK Pioneer Agrotrolley Hose 2- WIRE BRAID HYDRAULIC HOSE



Tube: Specially compounded Oil resistance NBR-Black  
 Reinforcement: Two Braid of High Tensile Steel wire.  
 Cover: Oil & Ozone resistance NBR/PVC –Black.  
 Working Temperature: -40 °C to +100 °C continuous operation.  
 MAIN APPLICATIONS Tractor Trolley Application.

**CAUTION:** Don't use this hose as a replacement of SAE100R2 Hose.  
 Cover Finish available in smooth & Wrap finish.

PRODUCT	HOSE ID		NOM.HOSE OD	WIRE BRAID OD	MAX. WORKING PRESSURE		MIN. BURST PRESSURE		MIN. BEND RADIUS
	INCH	MM			MM	MM	PSI	BAR	
6 Ag Trolley 2-Wire	3/8	9.5	18.30	16.3	3500	245	8750	615	125
8 Ag Trolley 2-Wire	1/2	12.5	21.7	19.4	3500	245	8750	615	180

# JK Pioneer

## INDUSTRIAL HOSES



**SAND  
BLASTING**



**FUEL  
OUTLET**



**WELDING  
INDUSTRY**



**CNG  
FUELLING**



## JK Pioneer PNEUMATIC TOOL HOSE IS:446 TYPE 2



**Tube:** Synthetic Rubber -Modified SBR-Black  
**Reinforcement:** One or, Two Braid of High tenacity yarn.  
**Cover:** Weather & Abrasion resistance NBR-PVC –Black.  
**Working Temperature:** From -30 °C to +70 °C continuous operation.  
**MAIN APPLICATIONS** These Hoses are intended to be used on all types of Pneumatic Tools for compressed air in different Industries.  
 Meet Exceeds performance requirement of IS:446-Type 2

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
1/4	6.3	13.6	200	14	800	56	75
5/16	8.0	15.3	200	14	800	56	95
3/8	10.0	17	200	14	800	56	100
1/2	12.5	20.5	200	14	800	56	125
5/8	16.0	23.5	200	14	800	56	140
3/4	20.0	28.2	200	14	800	56	150
1	25.0	35.8	200	14	800	56	200
1 1/4	31.5	43.6	200	14	800	56	250
1 1/2	38.0	50.5	200	14	800	56	300
2	50.0	63	200	14	800	56	425

## JK Pioneer AIR WATER IS:444 TYPE 2



**Tube:** Synthetic Rubber -Modified SBR-Black  
**Reinforcement:** One or, Two Braid of High tenacity yarn.  
**Cover:** Weather & Abrasion resistance NBR-PVC –Black.  
**Working Temperature:** From -30 °C to +70 °C continuous operation.  
**MAIN APPLICATIONS** An economical Air and water hose, for a wide range of industrial, workshops, construction and agricultural & Irrigation etc.  
 Meet Exceeds performance requirement of IS:444 Type 2

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
1/2"	12.5	20.5	175	12	525	36	125
3/4"	20	28.5	175	12	525	36	150
1"	25	36.2	175	12	525	36	200
1-1/4"	31.5	43.0	175	12	525	36	250
1-1/2"	38	50	175	12	525	36	300
1-3/4"	45	61.0	175	12	525	36	300
2"	50	63.0	175	12	525	36	425



## JK Pioneer ROCKDRILL HOSE IS:446 Type 3



**Tube:** Synthetic Rubber -Modified SBR-Black  
**Reinforcement:** One or, Two Braid of High tenacity yarn.  
**Cover:** Weather & Abrasion resistance NBR-PVC –Black.  
**Working Temperature:** From -30 °C to +70 °C continuous operation.  
**MAIN APPLICATIONS** Used for Air supply in Industrial construction & mining in Air Drills.  
 Meet Exceeds performance requirement of IS:446 Type 3

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
1/2"	12.5	22	300	21	1200	84	125
3/4"	20	28.5	300	21	1200	84	150
1"	25	38	300	21	1200	84	200
1-1/4"	31.5	43.5	300	21	1200	84	250
1-1/2"	38	52	300	21	1200	84	300
2"	50	66	300	21	1200	84	300

## JK Pioneer HD AIRDRILL HOSE



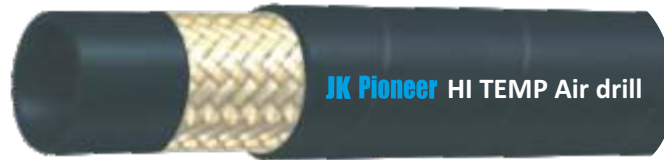
**Tube:** Synthetic Rubber -Modified SBR-Black  
**Reinforcement:** One Braid of Braid of Brass coated high tensile steel wire.  
**Cover:** Weather & Abrasion resistance NBR-PVC –Black. All sizes comes with perforated cover.  
**Working Temperature:** From -30 °C to +70 °C continuous operation.  
**MAIN APPLICATIONS** Used for High Pressure Air supply in Industrial construction & mines.  
 Meet Exceeds performance requirement of IS:446 Type 3

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
1/2"	12.5	22.6	575	40	2300	160	70
3/4"	20	28.8	575	40	2300	160	100
1"	25	37.0	575	40	2300	160	125
1-1/4"	31.5	44.0	575	40	2300	160	175
1-1/2"	38	50.0	575	40	2300	160	200
2"	50	63.5	575	40	2300	160	300





## JK Pioneer HI TEMP AIRDRILL HOSE



**Tube:** Oil Resistance Synthetic Rubber -Modified NBR-Black  
**Reinforcement:** One Braid of Braid of Brass coated high tensile steel wire.  
**Cover:** Weather & Abrasion resistance NBR-PVC –Black.  
 All sizes comes with perforated cover.  
**Working Temperature:** From -30 °C to +110 °C continuous operation.  
**MAIN APPLICATIONS** Used for High Pressure Air supply in Industrial construction & mines.  
 This Hose is designed to work at higher temperature in Waterwell Rig Segment.

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
1-1/4"	31.5	44	500	35	2000	140	200
1-1/2"	38	49.5	500	35	2000	140	250
2"	50	63.5	500	35	2000	140	350



## JK Pioneer CARBON FREE HOSE



Tube: Specially No carbon compounded NBR-Off White  
 Reinforcement: One or, two Braid of High tenacity yarn.  
 Cover: Weather & Abrasion resistance NBR-PVC –Green  
 Working Temperature: From -40 °C to +100 °C continuous operation.

**MAIN APPLICATIONS**

In Induction furnace cable cooling application in steel Industries and other non- conductive applications Specially developed Tube, Cover & Hose composite meets service requirement of Low leakage current (Less than 20 micro amps current @6000 Volt DC).

HOSE ID		HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
3/8	10.0	17.5	250.0	17.5	1000.0	70.0	75.0
1/2	12.5	21.5	250.0	17.5	1000.0	70.0	100.0
3/4	20.0	30.5	250.0	17.5	1000.0	70.0	150.0
1	25.4	36.6	250.0	17.5	1000.0	70.0	150.0
1 1/4	31.5	44.6	250.0	17.5	1000.0	70.0	195.0
1 1/2	38.0	52.0	250.0	17.5	1000.0	70.0	200.0
1 3/4	45.0	61.0	250.00	17.5	1000.0	70.0	300.0
2	51.0	65.5	250.0	17.5	1000.0	70.0	300.0
2 1/4	56.0	74.0	200.0	14.0	800.0	56.0	500.0
2 1/2	63.5	81.0	200.0	14.0	800.0	56.0	500.0
3	76.0	95.5	200.0	14.0	800.0	56.0	635.0
3 1/2	90.0	111.0	200.0	14.0	800.0	56.0	1000
4	100.00	124.0	145.0	10.0	580.0	40.0	1200



## JK Pioneer COMPRESSOR HOSE FOR HOT AIR



Tube: Oil Resistance Synthetic Rubber -CPE-Black  
 Reinforcement: Two Braid of Braid of Brass coated high tensile steel wire.  
 Cover: Heat, Weather & Abrasion resistance Synthetic Rubber –Black.  
 All sizes comes with perforated cover.  
 Working Temperature: From -40 °C to +135 °C continuous operation. (Intermittent +150 °C )  
 MAIN APPLICATIONS Used for High Pressure & High temperature air supply in Heavy Duty compressors used in Ground Drilling for construction, Mines & General Industry. Compounds are designed to withstand High Air Temperature up to 135 °C in Heavy Duty Drill Rig compressor up to 1100 CFM capacity.

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
1-1/2"	38	53.0	1250	86	5000	344	500
2"	50	66.0	1160	80	4640	320	600

## JK Pioneer HI STEAM HOSE



Tube: Extreme Heat resistance EPDM-Black  
 Reinforcement: One or, Two Braid of Brass coated high tensile steel wire.  
 Cover: Extreme Heat & Weather resistance EPDM –Black.  
 Working Temperature: From -40 °C to +205 °C continuous operation.  
 MAIN APPLICATIONS For Steam-Saturated & Super saturated up to 250 PSI & 205 °C application. It is used in refineries, shipyards, chemical plants, steel mills, foundries and heavy industrial applications , Tire curing bagomatic Press etc.

**NOTE:** **Don't alternate change between Steam & Hot Water.**  
 Meet Exceeds performance requirement of IS:10655 Type 3 & BS 5342 Type 2.

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
1/2	12.5	23.5	250.0	17.0	1000.0	170.0	150.0
3/4	20.0	30.5	250.0	17.0	1000.0	170.0	200.0
1	25.0	36.8	250.0	17.0	1000.0	170.0	250.0
1 1/4	31.5	45.5	250.0	17.0	1000.0	170.0	300.0
1 1/2	38.0	53.4	250.0	17.0	1000.0	170.0	400.0
2	50.0	66.5	250.0	17.0	1000.0	170.0	625.0



## JK Pioneer CAR WASH HOSE



Tube: Synthetic Rubber -Modified NBR-Black  
 Reinforcement: One or, Two Braid of High tenacity yarn.  
 Cover: Oil & Abrasion resistance Modified NBR-Black.  
 Working Temperature: From -30 °C to +70 °C continuous operation.  
**MAIN APPLICATIONS**  
 A light weight, economical high-pressure hose for carrying air, water for car washing & Pressure Washing applications in Garage, Service stations & Industries.  
 Meet Exceeds performance requirement of IS:444 Type-3B

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
3/8	10	19.5	500	28	1160	80	100
1/2	12.5	22.0	500	28	1160	80	125

## JK Pioneer AGRICULTURE SPRAY HOSE



Tube: Synthetic Rubber -Modified NBR-Black  
 Reinforcement: One or, Two Braid of High tenacity yarn.  
 Cover: Oil & Abrasion resistance Modified NBR-Black.  
 Working Temperature: From -30 °C to +70 °C continuous operation.  
**MAIN APPLICATIONS**  
 A lightweight, economical high-pressure hose for carrying air, water and water based pesticides spray solutions in agricultural applications:  
**NOTE:** **Not to be used for Paint spray applications.**  
 Meet Exceeds performance requirement of IS:1677 Type-C

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
3/8	10	20.2	798	55	3192	220	100
1/2	12.5	24.0	798	55	3192	220	125



## JK Pioneer MILD CHEMICAL HOSE



**Tube:** Specially Compounded Synthetic Rubber-Black  
**Reinforcement:** One or, Two Braid of High tenacity yarn.  
**Cover:** Weather & Abrasion resistance EPDM –Black.  
**Working Temperature:** From -30 °C to +100 °C continuous operation.  
**MAIN APPLICATIONS** For conveying dilute chemicals such as Hydraulic acid, Sulphuric acid, Alums liquor, Caustic Soda, Methyl /Ethyl/Butyl Alcohol, etc.

**NOTE:** **Contact JK Fenner Representative for any particular chemical use.**  
 Meet Exceeds performance requirement of IS:7654 Type 1&2.

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
1/2	12.5	22.5	145.0	10.0	580.0	40.0	125.0
3/4	20.0	30.0	145.0	10.0	580.0	40.0	150.0
1	25.0	37.2	145.0	10.0	580.0	40.0	200.0
1 1/4	31.5	44.0	145.0	10.0	580.0	40.0	250.0
1 1/2	38.0	52.0	145.0	10.0	580.0	40.0	300.0
2	50.0	64.0	145.0	10.0	580.0	40.0	300.0

## JK Pioneer FIRE EXINGUISHER HOSE FOR CO2 APPLICATION-1 WIRE BRAID



**Tube:** Specially compounded EPDM -Black  
**Reinforcement:** One Braid of High Tensile Steel wire.  
**Cover:** Weather & Abrasion resistance EPDM Rubber –Black.  
**Working Temperature:** From -40 °C to + 100 °C continuous operation.  
**MAIN APPLICATIONS** Use in CO2 Based Fire extinguisher Application . Safety factor 1:2.5  
**CAUTION:** Don't use this hose as in Hydraulic or, Tractor trolley application.  
**Note:** Also available in NBR Tube & NBR Cover

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
3/8	10	17.2	2465	170	6160	425	125



## SAND BLAST HOSE



- Tube: Highly Abrasion resistant, Synthetic Rubber-Black
- Reinforcement: One or, Two Braid of High tenacity synthetic Yarn. Two Copper wire in opposite direction.
- Cover: Abrasion Resistant, NR-SBR -Black.
- Working Temperature: From -30 °C to +70 °C continuous operation.
- MAIN APPLICATIONS: For conveying abrasive material like Sand or, Shot blasting, Mineral ores & other abrasive materials. Extra thick tube of 5.00 mm plus ensures its long life in application. Two Copper flex wires added in braiding in cross direction ensures the static charge dissipation.  
Meet Exceeds performance requirement of IS:5894

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
3/4	20.0	38.5	145.0	10.0	435.0	30.0	200.0
1	25.0	45.0	145.0	10.0	435.0	30.0	300.0
1 1/4	31.5	52.6	145.0	10.0	435.0	30.0	400.0
1 1/2	38.0	59.0	145.0	10.0	435.0	30.0	450.0
2	50.0	73.0	145.0	10.0	435.0	30.0	500.0

## SUPREME SAND BLAST HOSE



- Tube: Highly Abrasion resistant, & Conducting Synthetic Rubber-Black
- Reinforcement: One or, Two Braid of High tenacity synthetic Yarn.
- Cover: Abrasion Resistant, NR-SBR -Black.
- Working Temperature: From -30 °C to +70 °C continuous operation.
- MAIN APPLICATIONS: These are compact Hoses for conveying abrasive material like Sand or, Shot blasting, Mineral ores & other abrasive materials where Working pressure requirement is 14 Bar.  
Tube is conducting in nature, so need for Copper wire is not required. Bend Radius is tighter than Sandblast Hose which ensures it remain more flexible compared to same size Sandblast Hose

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
3/4	20.0	33.5	200.0	14.0	800.0	56.0	175.0
1	25.0	40.2	200.0	14.0	800.0	56.0	225.0
1 1/4	31.5	48.5	200.0	14.0	800.0	56.0	250.0
1 1/2	38.0	55.8	200.0	14.0	800.0	56.0	300.0
2	50.0	67.5	200.0	14.0	800.0	56.0	400.0



## JK Pioneer CNG HOSE SAEJ30R6 & IS:15722



Tube: Specially compounded Oil resistance NBR-Black  
 Reinforcement: One Braid of High tenacity yarn.  
 Cover: Oil & Ozone resistance NBR/PVC-Black.  
 Working Temperature: From -40 °C to +100 °C continuous operation.  
 MAIN APPLICATIONS: These Hoses are intended to be used on motor vehicles, 2- wheeler, & construction equipment's ( CEV) as a flexible low pressure CNG Fuel system components having service Pressure not exceeding 21.5 Bar.

**CAUTION:** This is not to be used in Liquefied Natural gas (LNG) fuel system components located upstream of & in Vaporizer. Fuel containers. Stationary Gas Engines.  
 CNG Fuel systems for Marine craft Propulsion.  
 Conforms to SAE J30 R6 & IS 15722 specifications.

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
1/4	6.3	12.8	300.0	21.0	700.0	48.0	75.0
5/16	8.0	14.0	300.0	21.0	700.0	48.0	90.0
3/8	10.0	15.8	300.0	21.0	700.0	48.0	100.0
1/2	12.5	19.8	300.0	21.0	700.0	48.0	125.0
5/8	16.0	23.8	300.0	21.0	700.0	48.0	150.0
3/4	20.0	28.5	300.0	21.0	700.0	48.0	150.0
1	25.0	34.5	300.0	21.0	700.0	48.0	200.0

## WELDING HOSE (RED & BLUE COVER) IS: 447

Tube: Synthetic Rubber --Black  
 Reinforcement: One Braid of High tenacity yarn.  
 Cover: Synthetic Rubber-Blue & Red.  
 Working Temperature: From -30 °C to +70 °C continuous operation.  
 MAIN APPLICATIONS: A light weight, economical hose for use in Welding equipment carrying Oxygen & Acetylene Gas.  
 Red Cover is used for Acetylene or, other fuel gas & Blue for Oxygen or, other non combustible gas.  
 Meet Exceeds performance requirement of IS:447

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
5/16	8	15	250	17.5	1000	70	95
3/8	10	17	250	17.5	1000	70	100



## JK Pioneer HARD WALL PETROL/DIESEL DISPENSING HOSE



Tube:	Specially compounded Fuel resistance NBR-Black
Reinforcement:	One Braid of Brass coated high tensile steel wire.
Cover:	Weather, Oil & Abrasion resistance NBR-PVC –Black.
Working Temperature:	From -30 °C to +55 °C continuous operation.
MAIN APPLICATIONS	For Dispensing all Types of Petrol & Diesel Fuels at Service station Pumps. Heavy Duty wire braided construction does not collapse in reel use or, behind the Nozzle in demanding service conditions. Meet Exceeds performance requirement of EN 1360 Grade M, Type 3.

HOSE ID		NOM. HOSE.OD	MAX. WORKING PRESSURE		MIN.BURST PRESSURE		MINIMUM BEAND RADIUS
INCH	mm	mm	PSI	BAR	PSI	BAR	mm
3/4	19	28.2	250	17	750	51	100
1	25	34.5	250	17	750	51	150





## Chemical Resistance Ratings for JK Pioneer Hose & Coupling

The Chemical Resistance Table lists the relative resistance of hose and coupling materials to more common chemicals. These ratings do not cover all possible variations of all factors, such as temperature, concentration, degradation or fluid contamination, etc. Testing under actual conditions is the best way to ensure chemical compatibility for critical applications.

### Rating Scale

- “1” Excellent Resistance- Preferred for Constant Contact
- “2” Good Resistance , Acceptable for Intermittent Contact
- “X” Not Recommended
- “ \_ ” No Data available. Please Validate for the application.

### How to Use the Chemical Resistance Table

1. Chemicals are listed alphabetically. Search Chemicals from List same basis.
2. Identify hose(s) with compatible polymer(s) and Metals in the Chemical Resistance Chart.
3. Identify the hose, coupling and adapter material type that has a resistance rating of “1” or “2”(See Rating Scale).
4. O-Rings used with couplings also must be considered for chemical compatibility with the fluid to be conveyed.

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings				
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum
Absorption Oil	Liquid	1	2	2	X	X	1	X	X	2	X	1	2	1	1	-	-	-	-	1
Acetal	Colorless Liquid	1	1	1	1	1	-	-	-	-	1	X	-	1	-	-	-	-	-	1
Acetaldehyde	Colorless Liquid	1	1	1	1	1	X	2	2	X	1	X	X	1	2	X	1	1	1	1
Acetamide	Liquid above 176°F(80°C)	1	1	2	1	2	2	X	X	2	2	X	-	1	-	-	-	2	-	1
Acetic Acid (40% or less)	Clear Colorless Liquid	1	1	1	1	1	X	2	X	2	1	X	2	1	-	-	X	2	2	2
Acetic Acid (56% or less)	Clear Colorless Liquid	1	1	1	1	1	X	2	X	2	X	X	X	X	X	X	X	-	2	2
Acetic Acid (85% or less)	Clear Colorless Liquid	1	1	1	X	2	X	2	X	X	X	X	X	X	X	X	-	2	2	-
Acetic Acid (Glacial - 99.4%)	Clear Colorless Liquid	1	1	X	X	X	X	2	X	X	X	X	X	1	X	X	-	2	2	-
Acetic Acid, Anhydride	Clear Colorless Liquid	1	-	X	-	-	X	X	X	X	2	-	2	1	X	X	-	2	2	-
Acetic Anhydride (Acetic Oxide)	Colorless Liquid	1	1	1	1	1	X	X	X	-	2	X	2	1	X	X	X	2	2	2
Acetic Ether (Ethyl Acetate)	Colorless Liquid	1	1	1	2	2	X	X	X	X	2	X	X	2	1	X	1	1	1	1
Acetic Oxide (Acetic Anhydride)	Colorless Liquid	1	1	1	1	1	-	X	X	-	2	X	2	1	X	X	X	2	2	2
Acetone (Dimethylketone)	Colorless Liquid	1	1	1	1	2	X	X	X	X	2	X	X	1	1	X	1	1	1	1
Acetone Cyanohydrin	Colorless Liquid	1	1	2	2	2	-	X	X	-	2	-	-	2	-	-	-	-	-	-
Acetonitrile (Methyl Cyanide)	Colorless Liquid	1	1	2	1	X	X	2	2	2	2	-	2	1	-	1	-	-	-	-
Acetophenone	Colorless Liquid	1	2	2	2	1	X	X	X	X	1	X	-	-	-	-	-	-	-	-
Acetyl Chloride	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Acetyl Oxide (Acetic Anhydride)	Colorless Liquid	1	1	1	1	1	X	X	X	-	2	X	2	1	X	X	X	2	2	2
Acetyl-P-Toluidine, (In Ether or Alcohols)	In Alcohol or Ether	1	1	1	1	1	-	X	X	-	2	X	-	1	-	-	-	-	-	-
Acetylene	Gas	NO HOSE AVAILABLE														-	-	-	-	-
Acetylene Dichloride, (Dichloroethylene)	Colorless Liquid	1	X	X	X	X	-	X	X	-	X	1	-	X	1	X	-	-	-	-
Acetylene Tetrachloride, (Tetrachloroethane)	Colorless Liquid	1	X	X	X	X	-	X	X	-	X	1	-	X	1	X	-	-	-	-
Acrolein, (Hydroquinone Inhibited)	Colorless to Yellow Liquid	1	1	1	2	X	-	-	-	-	2	X	-	-	-	-	-	-	-	-
Acrylamide	Colorless Crystals	1	1	2	2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Acrylates (HEA or HPA)	Colorless Liquid	1	1	1	1	X	-	-	-	-	-	1	-	1	-	-	-	-	-	-
Acrylic Acid	Colorless Liquid	1	1	1	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Acrylic Acid (Glacial 97%)	Colorless Liquid	1	1	1	X	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-
Acrylic Emulsion	Liquid	1	1	1	X	X	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Acrylonitrile	Colorless Liquid	1	2	2	1	X	X	2	2	X	X	X	X	1	-	1	1	1	1	-
Adipic Acid (70°F)	White Crystals	1	1	X	1	1	X	X	1	X	-	1	-	-	X	X	-	-	-	-
Aeroshell 7A, 17 Grease	Liquid	1	-	-	-	-	1	-	-	2	-	-	-	-	-	-	1	1	1	1
Air, 212°F (100°C)	Colorless Gas	1	1	2	1	1	1	2	X	1	1	1	1	1	X	2	1	1	1	1
Air, 257°F (125°C)	Colorless Gas	1	1	X	1	1	X	X	X	2	1	1	1	1	X	X	-	-	-	-
Air, 300°F (149°C)	Colorless Gas	1	1	X	1	1	X	X	X	X	1	1	X	X	X	X	-	-	-	-
Air, Ambient	Colorless Gas	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Aircraft Hyd. Oil AA	Liquid	1	1	-	-	X	1	-	-	-	X	-	-	-	-	-	1	1	1	1
Alachlor (Lasso)	Colorless Crystals	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	1	-
Alkaline Liquid (NOS)	In Water Solutions	1	1	1	1	1	-	-	-	-	1	2	-	1	-	-	-	-	-	-
Alkyaryl Polyether Alcohol	-	1	1	1	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-
Alkyd Resin, (Thermosetting Polymer)	Varies	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alkylaryl Sulfonate, (Alkylbenzene Sulfonate)	Powder	1	1	1	-	-	1	-	1	-	-	1	X	1	-	-	1	1	-	-
Allomalaic Acid,																				

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings						
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	
(Fumaric Acid) Solution	Liquid	1	1	-	-	2	1	2	2	-	-	1	-	-	X	-	1	1	-	-		
Allyl Alcohol	Colorless Liquid	1	1	1	1	1	1	-	1	1	1	1	-	X	X	-	-	-	-	-		
Allyl Bromide	Colorless to Yellow Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Allyl Chloride	Colorless Liquid	1	1	X	X	X	X	X	X	X	1	-	2	1	X	-	1	1	-	-		
Alpha Methylstyrene	Colorless Liquid	1	2	2	X	X	X	X	X	X	1	-	X	1	X	-	-	-	-	-		
Alpha Olefin Sulfonate	Powder	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-		
Alpha Picoline	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Alum, (Aluminum Sulphate or Other)	White Crystals	1	1	-	1	1	1	-	1	1	-	-	-	-	-	X	X	2	X	X		
Alum, Potash (Al Potassium Sulfate)	White Crystals	1	-	-	-	-	-	-	1	-	-	-	-	-	-	X	2	2	X	X		
Alumina - Calcined, (Conveyed Pneumatically)	Granular	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-		
Alumina Trihydrate, (Conveyed Pneuematically)	White Crystalline Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-		
Aluminum Acetate	White Powder	1	1	-	-	-	-	1	1	-	-	-	-	-	-	-	1	1	-	X		
Aluminum Alkyl, (ie Triethylaluminum)	Colorless Liquid	X	X	X	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-	-		
Aluminum Bromide	White to Yellow Crystals	1	1	-	-	1	1	1	1	1	1	1	-	-	-	X	2	2	-	X		
Aluminum Chloride Solution	White to Yellow Solution	1	1	X	1	1	1	1	1	-	1	1	-	1	-	-	X	2	2	X	X	
Aluminum Chloride, Anhydrous	White to Yellow Crystals	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-		
Aluminum Chlorohydrate, Solution (Up to 50%)	White Solution	1	1	1	1	1	1	-	-	-	1	1	-	1	-	-	-	-	-	-		
Aluminum Fluoride	White Crystals	1	1	-	-	-	-	-	1	1	-	-	-	-	-	1	X	2	2	2	X	
Aluminum Formate, (Di & Tri In Water)	In Hot Water	1	1	1	1	1	1	X	X	-	1	1	-	1	-	-	-	-	-	-		
Aluminum Hydroxide, (Alumina Trihydrate)	In Mineral Acid or Caustic Soda	1	1	1	1	-	X	X	X	1	1	1	-	1	X	X	-	1	1	-	1	
Aluminum Nitrate	In Cold Water	1	1	1	1	1	1	1	1	1	1	1	1	1	-	1	X	1	1	2	-	
Aluminum Phosphate	In HCl or Solution	1	1	1	-	-	X	X	X	X	-	1	-	-	X	X	-	-	-	-	-	
	HNO3 (slightly soluble)	1	1	1	-	-	X	X	X	X	-	1	-	-	X	X	-	-	-	-	-	
Aluminum Salts	Varies	1	1	-	-	1	1	1	1	1	1	-	1	-	-	1	-	2	2	2	-	
Aluminum Sulfate	White Crystals	1	1	-	1	1	1	-	1	1	-	-	-	-	-	X	X	2	X	X		
Aluminum Sulfate Solution	In Water	1	1	1	1	1	1	1	1	-	1	1	-	1	-	-	X	X	2	X	X	
Aluminum Sulfate Solution, (49.7% H2O)	Liquid	1	1	1	1	1	1	1	1	1	1	1	-	1	1	1	X	X	2	X	X	
Amines, (A class of Organic Compounds)	Varies	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Amines, (Aromatic - IE P-Toluidine)	White Plates (Solid)	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	
Amines (Mixed)	Varies	1	2	1	-	2	2	2	2	2	2	X	-	-	-	-	-	1	-	X	X	
"Amines (Primary, Secondary, Tertiary, Etc)"	Varies	1	2	1	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	
Aminodiphenylamine	Purple Powder	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aminoethanol (Ethanolamine)	Colorless Viscous Liquid	1	2	1	1	2	2	2	2	2	2	X	X	1	1	2	1	1	1	-	1	
Aminoethylethanolamine	Liquid	1	2	1	2	2	-	-	-	-	1	-	-	1	1	-	-	-	-	-	-	
Ammonia (Anhydrous)	Gas or Liquid	NO HOSE AVAILABLE														-	-	-	-	-		
Ammonia (Aqueous up to 30% NH3)	Colorless Liquid	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	-	1	1	-	X	
Ammonia Liquor	Colorless Liquid	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ammoniated Fatty Acid (ie Ammonium Caprylate)	Liquid above 167°F(75°C)	1	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	
Ammonium Acetate	In Water	1	1	1	1	1	1	1	1	1	2	1	1	-	1	2	1	-	1	1	-	X

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Ammonium Bicarbonate	White Crystals	1	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	1	
Ammonium Bisulfate (50%)	Colour Liquid	1	1	1	1	1	-	-	-	-	1	1	-	1	-	-	-	-	-	-	
Ammonium Carbonate	Colorless to White Powder	1	1	-	-	-	X	-	1	2	-	-	-	-	1	1	1	1	-	-	
Ammonium Chloride	White Crystals	1	-	X	-	-	-	-	1	-	-	-	-	-	-	-	2	2	-	X	
Ammonium Chloride Solution	Liquid	1	1	-	-	1	2	1	1	X	1	-	1	1	X	1	-	2	2	-	X
Ammonium Flouride	White Crystals	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	
Ammonium Hydroxide (16%, 20%, 26%, & 30%)	Colorless Liquid	1	1	1	1	-	-	-	-	-	-	2	-	-	-	2	1	1	-	X	
Ammonium Hydroxide (up to 30% NH3)	Colorless Liquid	1	1	1	1	1	2	X	2	2	2	2	1	1	X	X	2	1	1	-	X
Ammonium Metaphosphate	White powder	1	1	-	-	1	2	2	2	2	1	-	2	-	-	2	1	1	1	X	-
Ammonium Nitrate	Colorless Crystals	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	1	2	X
Ammonium Nitrate Fertilizer (20.5% N, or 33.5% N)	Aggregate	1	-	-	-	-	-	-	1	-	-	-	-	-	-	1	1	1	2	X	
Ammonium Nitrate Prills and Oil	Aggregate	1	-	-	-	-	1	-	1	-	-	-	-	-	-	1	1	1	2	X	
Ammonium Nitrate Solution (up to 83%)	Liquid	1	1	1	1	1	1	-	1	1	-	1	1	1	-	1	1	1	2	X	
Ammonium Nitrite	Colourless Crystals	1	1	-	-	-	X	X	X	2	-	-	-	1	-	-	-	1	1	-	-
Ammonium Persulfate	Solution in Water	1	1	-	-	-	X	-	-	X	-	X	-	-	-	-	1	1	-	X	
Ammonium Phosphate	White Crystals or Powder	1	-	-	-	-	-	-	1	-	-	-	-	-	-	X	2	1	X	-	
Ammonium Phosphate Solutions	Liquid	1	1	1	1	1	1	1	1	1	1	1	1	-	1	X	2	1	X	-	
Ammonium Polysulfide Solution	Yellow Solution	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ammonium Sulfate	Gray to White Crystals	1	1	-	-	-	-	-	1	-	-	-	-	1	-	-	1	1	X	X	
Ammonium Sulfide	Yellow Crystals	1	1	-	-	-	-	-	1	-	-	-	-	-	-	1	1	1	X	X	
Ammonium Sulfide Solution (40-44% or less)	Liquid	1	1	-	-	1	2	1	1	-	1	1	1	-	1	1	1	1	X	X	
Ammonium Thiocyanate (50-60% or less)	In Water	1	1	1	1	1	1	1	1	1	-	1	1	1	-	1	1	1	-	-	
Amyl Acetate (Banana or Pearl Oil)	Colorless Liquid	1	1	1	-	2	X	X	X	X	2	X	X	X	1	X	X	1	1	X	1
Amyl Alcohol	Colorless Liquid	1	2	2	2	2	2	2	2	2	2	1	2	1	1	2	1	1	1	1	
Amyl Chloride (Chloropentane)	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	X	-	1	1	-	-	
Amyl Chlorides (mixed)	Straw to Purple Liquid	1	2	2	X	X	X	X	X	X	X	1	X	2	1	X	-	1	1	-	-
Amyl Chloronaphthalene	-	1	1	2	X	X	X	X	X	X	X	1	X	X	1	-	-	1	1	-	-
Amyl Naphthalene	-	1	1	-	-	X	X	X	X	X	1	X	X	-	-	-	1	1	-	-	
Amyl Phenol	Clear Straw, Colored Liquid	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	
Amylamine	Colorless Liquid	1	X	-	-	X	2	-	X	X	X	X	-	-	-	-	-	-	-	-	
Amylbenzene (sec amylbenzene)	Clear Liquid	1	2	2	X	X	2	X	X	2	X	1	-	-	-	-	-	-	-	-	
Anethole (anise camphor)	"White Crystals/Liquid > 73°F(23°C)"	1	2	-	-	-	X	X	X	X	X	1	X	X	X	-	2	1	1	2	X
Anhydrous Ammonia (R 717)	Gas or Liquid	NO HOSE AVAILABLE														-	-	-	-	-	
Aniline	Colorless Oily Liquid	1	2	X	1	2	X	X	X	X	2	1	X	2	X	-	2	1	1	2	X
Aniline Dyes	-	1	1	-	1	2	X	X	X	X	2	2	X	2	-	-	X	1	1	-	-
Aniline Hydrochloride	White Crystals	1	1	-	-	2	2	2	2	X	2	-	-	-	-	-	X	X	-	X	
Aniline Oil (Aniline)	Colorless Oily Liquid	1	2	X	1	2	X	X	X	X	2	1	X	2	X	-	2	1	1	2	X
Animal Fat (Lard)	White Solid/Liquid, > 108°F(42°C)	1	1	1	X	X	1	X	X	2	X	1	X	1	1	-	1	1	1	1	X
Animal Gelatin	-	1	-	1	-	-	1	-	-	1	-	-	-	-	1	-	1	1	-	-	

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Animal Grease, Inedible, Liquid	Liquid	1	-	-	-	X	1	-	X	2	X	1	2	-	-	-	-	-	-	-	-
Animal Oils	Solid to Liquid	1	-	-	2	-	1	-	-	2	-	-	1	1	1	1	1	1	1	1	-
Ant Oil (Furfural)	Colorless to Reddish Brown Liquid	1	1	-	2	X	X	X	X	2	X	2	2	1	-	X	2	1	1	1	1
Antifreeze (Glycol Base)	Liquid	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Antimony Chloride (50%)	White Powder	1	1	1	-	-	-	-	-	-	2	1	-	-	1	1	X	X	X	-	-
Antimony Pentachloride	Reddish-yellow Liquid	1	1	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Antimony Salts	White Crystal	1	1	-	-	1	2	-	-	-	1	1	-	-	-	1	-	-	-	-	-
"Aqua Ammonia (Ammonium Hydroxide) (30%)"	Colorless Liquid	1	1	1	1	1	2	2	2	2	2	2	1	1	X	X	2	1	1	-	X
Aqua Regia, (Nitrohydrochloric Acid)	Fuming Yellow Liquid	1	2	X	X	X	X	X	X	X	X	1	X	2	X	X	-	X	X	-	-
Argon, Compressed	Colorless Gas	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-
Aromatic Hydrocarbons	Typically Colorless Liquids	1	2	2	X	X	2	X	X	X	X	1	X	X	1	X	1	1	1	2	2
Arsenic Acid	In Water	1	1	1	2	2	-	X	X	-	2	1	-	1	-	-	2	-	1	2	-
Arsenic Trioxide	In Acid	1	1	1	2	2	2	X	X	2	X	1	X	-	-	1	-	-	-	-	-
Askarel (Transformer Oil)	Varies	1	2	2	X	X	X	X	X	X	X	1	X	1	1	X	1	1	1	-	1
Asphalt	Varies	1	2	X	X	X	2	X	X	-	X	1	-	-	X	X	1	1	1	-	1
Asphalt (Blown)	Black Solid	-	-	X	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Asphalt (Cut Back)	Black Liquid	1	X	X	X	X	2	X	X	2	X	1	X	X	2	X	1	1	1	-	1
Asphalt Emulsion	Black Liquid	-	-	X	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Asphalt Paint	Black Liquid	1	2	X	X	X	2	X	X	-	X	1	X	-	2	X	-	-	-	-	-
Asphaltene	In Carbon Disulfide	1	2	X	X	X	2	X	X	2	X	1	X	X	1	-	-	-	-	-	-
ASTM Oil No. 1	Brown Liquid	1	1	1	2	X	1	X	X	1	X	1	2	1	1	2	1	1	1	1	1
ASTM Oil No. 2	Brown Liquid	1	1	1	X	X	1	X	X	2	X	1	2	1	1	X	1	1	1	1	1
ASTM Oil No. 3	Brown Liquid	1	1	1	X	X	1	X	X	X	X	1	X	1	1	X	1	1	1	1	1
ASTM Reference Fuel A	Liquid	1	1	1	2	X	1	X	X	1	X	1	1	1	1	2	1	1	1	1	1
ASTM Reference Fuel B	Liquid	1	2	1	X	X	1	X	X	2	X	1	X	2	1	X	1	1	1	1	1
ASTM Reference Fuel C	Liquid	1	2	2	X	X	2	X	X	X	X	1	X	2	1	X	1	1	1	-	1
ATF, (Automatic Transmission Oil)	Liquid	1	1	1	X	X	1	-	-	-	X	1	-	1	-	-	-	-	-	-	-
Baltic Types 100, 150, 200, 300, 500	Liquid	1	1	-	-	X	1	-	-	-	X	-	-	-	-	2	-	-	-	-	-
Banvel (Ag Spray, Concentrated)	Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-
Bardol B	Dark colored Liquid	1	1	-	-	X	X	X	X	X	X	2	X	-	-	-	1	1	1	-	-
Barite (Natural Barium Sulfate)	White to Yellowish Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	1	-	2
Barium Carbonate	White Powder	1	1	-	-	X	1	X	1	1	X	1	X	X	-	1	2	1	1	-	1
Barium Chloride	Colorless Crystals	1	1	1	1	1	1	1	1	1	1	1	1	1	X	1	X	1	1	-	2
Barium Hydroxide	White Powder	1	1	1	-	1	1	X	1	1	1	-	1	-	X	-	2	1	1	-	-
Barium Sulfate	White to Yellowish Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	1	-	2
Barium Sulfide	"Yellowish Green to Gray Powder"	1	1	1	-	-	-	-	1	-	-	1	-	-	-	-	X	1	1	-	X
Basic Copper Arsenate	Blue to Green Powder	1	1	-	-	-	-	2	1	-	-	1	2	-	-	1	1	1	1	-	-
BBP (Butyl Benzyl Phthalate)	Clear Oily Liquid	1	-	-	-	-	X	-	X	-	1	X	X	-	-	-	-	-	-	-	-
Beer	Yellow Liquid	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beet Sugar Liquors	Colorless Solution	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	X	X	X	X	-
Bellows 80-20 Hydraulic Oil	Liquid	1	1	-	-	X	1	-	-	-	X	-	-	-	-	2	-	-	-	-	-
Benzaldehyde (Benzoic Aldehyde)	Colorless to Yellow Liquid	1	1	1	2	2	X	X	X	X	2	X	X	2	2	X	1	-	-	1	-
Benzene (Benzol)	Colorless to Yellow Liquid	1	2	2	X	X	X	X	X	X	X	1	X	X	1	X	1	1	1	1	1

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Benzenesulfonic Acid 151°F (66°C)"	"Liquid above 1	1	1	-	-	-	X	X	X	2	1	2	-	-	X	X	-	2	X	-	
Benzidine Paste	1	2	-	-	X	2	X	1	X	X	-	-	-	-	X	1	1	1	1	-	
Benzoic Acid	White Crystals	1	1	1	1	2	X	X	X	X	2	1	2	1	-	X	-	-	-	-	
"Benzoic Aldehyde (Benzaldehyde)"	Colorless to Yellow Liquid	1	1	1	2	2	X	X	X	X	2	X	X	2	2	X	1	-	-	1	-
Benzol (Benzene)	Colorless to Yellow Liquid	1	2	X	X	X	X	X	X	X	1	X	X	1	X	1	1	1	1	1	1
Benzophenone	White Powder	1	1	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-
Benzotrithloride	Colorless to Yellow Liquid	1	-	-	X	X	X	X	X	X	1	-	X	2	X	-	-	-	-	-	-
Benzyl Acetate	Water White Liquid	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzyl Alcohol	Water White Liquid	1	1	1	1	2	X	X	X	X	1	1	X	1	X	1	-	-	-	-	-
Benzyl Alcohol, Photo Inhibited	Water White Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-
Benzyl Benzoate	Water White Liquid	1	1	-	-	2	-	-	-	-	2	1	-	-	-	-	1	1	1	-	-
Benzyl Chloride	Colorless Liquid	1	2	2	X	X	X	X	X	X	1	-	X	2	X	1	-	-	-	-	-
Bicarbonate Of Soda	White Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Bio-Diesel (B100)	Liquid below 125°F (52°C)	1	2	2	-	-	2	-	-	-	-	1	2	2	1	X	2	2	1	1	2
Bio-Diesel (B100)	"Liquid 125°F (52°C) and above"	1	X	X	X	X	X	X	X	X	1	X	X	1	X	2	2	1	1	2	
Bismuth Carbonate	White Powder	1	-	-	-	-	-	-	1	X	-	-	-	-	-	-	1	1	1	-	-
Bisphenol A	White Flakes	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Bitumastic	Liquid	1	-	X	-	X	2	X	X	2	X	2	X	2	-	-	1	1	1	-	1
Black Liquor (RXN Product Pulpwood+NaOH)	Black Alkaline Liquid	1	1	1	1	2	2	X	X	2	2	1	2	2	-	1	1	1	1	-	-
Black Sulfate Liquor (See "Black Liquor")	Black Alkaline Liquid	1	1	1	1	2	2	X	X	2	2	1	2	2	-	1	1	1	1	-	-
Blast Furnace Gas (Cooled)	Gas	1	1	-	-	-	X	X	X	X	1	X	-	-	X	1	1	1	1	-	1
Bleach (Chlorinated Lime)	White Powder (35-37% Cl)	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Bleach Liquor (Calcium Hypochlorite/H2O)	Clear Solution	1	1	1	1	2	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-
Borax (Sodium Borate)	White Crystals	1	1	-	-	1	1	1	1	1	1	1	1	1	1	1	2	1	1	-	2
Bordeaux Mixture (Slaked Lime &Copper Sulfate)	In Water	1	1	1	1	1	1	2	2	2	1	1	-	-	-	1	-	1	1	-	-
Boric Acid	"White Powder or Colorless Scale"	1	1	1	1	1	1	1	1	1	1	1	1	1	X	1	X	2	1	1	X
Boric Oxide	Colorless Powder	1	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-
Brake Fluid (Petroleum Base)	Liquid	1	1	-	X	X	1	X	X	2	X	1	X	1	1	2	1	1	1	-	1
Brake Fluid (Synthetic) DOT2, DOT3, DOT4	Liquid	1	1	-	1	1	X	X	X	X	1	X	X	1	-	2	1	1	1	-	1
Brine (Salt)	Liquid	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	-	2
Bromine	"Dark Reddish Brown Liquid"	1	-	-	X	X	X	-	-	X	-	1	-	-	X	X	1	1	1	1	1
Bromobenzene	Colorless Liquid	1	-	-	X	X	-	X	X	-	X	1	-	-	-	X	-	-	-	-	-
Bromochloroethane	Colorless Liquid	-	-	X	X	X	-	X	X	-	X	X	-	X	X	-	-	-	-	-	-
Bromochloromethane (Chlorobromomethane)	Clear Liquid	1	2	X	X	X	X	X	X	X	X	X	X	X	X	X	1	1	1	-	1
Bromotoluene	Clear Liquid	1	-	-	X	X	-	X	X	-	X	1	-	X	-	-	-	-	-	-	-
Bubble Bath Compounds	Liquid	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bunker Oil	Liquid	1	2	2	X	X	1	X	X	2	X	1	X	-	1	X	1	1	1	1	1
Butadiene (1,3)	Gas	1	1	-	X	X	2	X	X	X	1	X	-	1	X	-	1	1	1	-	1
Butanal (Butyraldehyde)	Water White Liquid	1	2	-	-	X	X	X	X	X	X	X	X	2	-	-	-	-	-	-	1
Butandiol (Butylene Glycol)	Colorless Oily Liquid	1	1	2	-	-	-	-	-	-	-	1	-	-	X	-	-	-	-	-	-
Butane (Gas)	Colorless Gas	USE LPG HOSE ONLY														-	-	-	-	-	-
Butane (Liquid)	Liquid	USE LPG HOSE ONLY														-	-	-	-	-	-

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Butanol (Butyl Alcohol)	Colorless Liquid	1	1	1	1	1	1	1	1	2	1	1	2	1	1	1	1	1	1	1	1
Butter	Yellow to white semi-Solid to Liquid	-	-	-	2	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Butter Oil (Use FDA Hose)	Yellow to white Liquid	1	-	-	2	-	-	X	X	2	-	-	-	-	-	-	1	1	1	1	1
Butyric Acid	Colorless Liquid	1	1	1	1	2	-	2	2	X	2	1	X	1	X	-	-	-	-	-	-
Butyl Carbitol, (Diethylene Glycol Butyl Ether)	Colorless Liquid	1	1	-	2	2	2	X	X	2	2	1	-	1	-	-	1	1	1	1	1
Butyl Cellosolve (EG Monobutyl Ether)	Colorless Liquid	1	1	-	1	1	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-
Butyl "Oxitol™" for EG Monobutyl Ether	Colorless Liquid	1	1	-	1	1	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-
Butyl Acetate	Colorless Liquid	1	2	2	1	X	X	X	X	X	2	X	X	2	1	1	2	1	1	1	1
Butyl Acrylate	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
Butyl Alcohol (Butanol)	Colorless Liquid	1	1	1	1	1	1	1	1	2	1	1	2	1	1	1	1	1	1	1	1
Butyl Aldehyde	Water White Liquid	1	-	-	-	2	X	-	-	X	-	X	X	-	-	-	-	-	-	-	-
Butyl Benzyl Phthalate (BBP)	Clear Oily Liquid	1	-	-	-	-	X	-	X	-	1	X	X	-	-	-	-	-	-	-	-
Butyl Chloride	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Butyl Ether	Colorless Liquid	1	1	-	-	-	2	X	X	2	2	X	-	1	-	-	1	1	1	1	1
Butyl Ethyl Ether, (Ethyl--Butyl Ether)	Liquid	1	-	-	-	-	2	-	X	-	X	-	2	-	-	-	-	-	-	-	-
Butyl Formate	Colorless Liquid	1	-	-	-	-	X	-	X	X	-	-	-	-	-	-	-	-	-	-	-
Butyl Mercaptan (2-Methyl-2-Butanathiol)	Liquid	1	1	-	X	X	-	X	X	-	X	1	-	-	-	X	-	1	1	-	-
Butyl Methacrylate	Colorless Liquid	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Butyl Stearate	Colorless Liquid	1	1	-	-	X	2	X	X	X	X	1	-	2	-	1	1	1	1	1	1
Butylamine	Colorless Liquid	1	1	-	-	-	X	X	X	X	X	X	X	2	-	-	1	1	1	1	1
Butylene Glycol (Butandiol)	Colorless Oily Liquid	1	1	2	-	-	-	-	-	-	-	1	-	-	X	-	-	-	-	-	-
Butyraldehyde (Butanal)	Water White Liquid	1	2	-	-	X	X	X	X	X	X	X	X	2	-	-	-	-	-	-	1
Butyric Acid	Colorless Liquid	1	1	1	1	1	-	-	-	-	-	1	X	1	1	1	X	1	1	1	2
Butyric Anhydride	Water White Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium Acetate (Soluble in H2O & Alcohols)	In Water or Alcohol	1	-	-	-	-	X	-	X	-	1	X	-	-	-	-	-	-	-	-	-
Cake Alum (Aluminum Sulfate)	White Crystals	1	1	-	1	1	1	-	1	1	-	-	-	-	-	-	X	X	2	X	X
Cake Alum Solution (Al Sulphate up to 50%)	In Water	1	1	1	1	1	1	-	-	-	1	1	-	1	1	1	-	-	-	-	-
Calcine Liquor (Radioactive Waste)	In Water Solution	1	1	-	-	1	1	-	-	-	1	1	-	-	-	-	1	1	1	2	-
Calcium Acetate	Powder	1	1	-	-	1	X	2	2	X	1	X	X	1	-	-	1	1	1	1	1
Calcium Aluminate (Soluble in Acids)	In Acid	1	-	-	-	-	1	-	1	1	1	1	1	-	-	-	-	-	-	-	-
Calcium Aluminate (Tricalcium Aluminate)	Crystals or Powder	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Calcium Arsenate	In Dilute Acid	1	1	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-
Calcium Bisulfide (Calcium Hydrosulfide)	In Alcohol or Water	1	1	-	-	-	1	2	2	1	1	1	1	1	-	2	-	2	1	-	X
Calcium Bisulfite (Calcium Hydrogen Sulfite)	Yellow Liquid	1	1	-	-	-	1	2	2	1	1	1	1	1	-	1	-	1	1	-	-
Calcium Bromide Solution	In Water or Alcohol	1	1	1	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Calcium Carbonate	Solid White Powder	1	1	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Calcium Carbonate Slurry	Solid in H2O	1	-	-	-	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-
Calcium Chlorate	In Water or Alcohol	1	1	-	-	2	1	2	2	1	2	-	1	-	-	1	-	2	1	-	-
Calcium Chloride, Dry	White solid	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	X	2	1	-	2
Calcium Chloride, Liquid (Not For Food)	In Water or Alcohol	1	1	-	1	1	1	1	1	1	1	1	1	1	X	1	-	-	-	-	-

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Calcium Chloride, Liquid, Food Grade 33%	In Water	1	-	-	-	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	
Calcium Hydrogen Sulfite (Calcium Bisulfite)	Yellow Liquid	1	1	-	-	-	1	2	2	1	1	1	1	1	-	1	-	1	-	-	
Calcium Hydrosulfide (Calcium Bisulfide)	In Alcohol or Water	1	1	-	-	-	1	2	2	1	1	1	1	1	-	2	-	2	1	-	X
Calcium Hydroxide (Hydrated or Slaked Lime)	Solid White Powder	1	1	-	1	-	2	1	1	1	1	X	1	1	-	X	X	X	1	-	2
Calcium Hydroxide Solutions	In Glycerol or Acids	1	1	X	-	-	2	-	-	-	-	-	-	-	X	-	2	1	1	X	X
Calcium Hypochlorite	Solid White Crystals	1	2	X	-	-	-	X	X	X	2	-	2	1	X	2	-	-	-	-	-
Calcium Hypochlorite Solutions	In Water or Alcohol	1	1	X	-	-	-	X	X	X	2	-	2	1	-	1	-	X	2	X	X
Calcium Metasilicate (Calcium Silicate)	White Powder	1	1	-	-	-	2	2	1	-	2	1	2	1	-	1	1	1	1	1	1
Calcium Nitrate Solutions	"In Water, Alcohol, or Acetone"	1	1	-	-	1	1	1	1	1	1	1	1	1	-	1	1	1	1	1	1
Calcium Oxide (Lime, quick, unslaked)	White to Gray Lumps	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2	-	-	-
Calci Silicate (Calcium Metasilicate)	White Powder	1	1	-	-	-	2	2	1	-	2	1	2	1	-	1	1	1	1	1	1
Calcium Stearate	White Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Calcium Sulfate	White Powder or Crystals	1	1	-	-	1	1	-	1	1	1	1	1	1	-	-	1	1	1	-	1
Calcium Sulfide	Yellow to Gray Powder	1	1	-	-	-	1	2	1	2	1	2	1	1	-	2	1	1	1	2	-
Calcium Sulfite (Soluble In Sulfurous Acid)	In Acid	1	1	1	1	1	-	-	-	-	X	1	-	1	-	-	-	-	-	-	-
Caliche Liquors (Sodium Nitrate)	In Water	1	1	-	-	-	1	2	2	-	1	-	1	-	-	-	-	1	1	-	-
Camphene (Liquid above 115°F/46°C)	Liquid above 115°F (46°C)	1	-	-	X	X	-	-	-	-	-	1	X	-	-	-	-	-	-	-	-
Cane Sugar Liquors	In Water	1	1	-	1	2	1	2	2	1	2	-	1	1	-	1	1	1	1	1	2
Caproic Acid	Colorless or Yellow Liquid	1	1	1	1	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Caprolactam	White Flakes	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Caprolactam, Molten (Above 156°F/69°C)	Liquid	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
Caprylic Acid (Octanoic Acid)	Colorless, Oily Liquid	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Carbamates	Crystals	1	1	-	-	X	X	X	X	X	X	2	X	-	-	-	-	-	-	-	-
Carbolic Acid	Liquid above 109°F(43°C)	1	2	2	2	2	X	X	X	X	2	1	X	1	X	X	X	1	1	2	X
Carbolic Acid (Phenol)	White or Pink Crystals	1	2	-	2	2	X	X	X	X	2	1	X	1	X	X	X	1	1	2	X
Carbolic Acid (Phenol, 82-95% in Creosols)	Liquid	1	2	-	-	2	X	X	X	X	2	2	X	1	X	X	X	1	1	2	X
Carbon Dioxide (Dry)	Gas	1	1	-	-	1	1	1	1	1	1	1	1	-	-	1	1	1	1	1	1
Carbon Dioxide (Wet)	Gas with Water Vapor	1	1	1	-	2	1	2	2	1	2	1	1	-	-	1	1	1	1	1	1
Carbon Disulfide	"Clear to Faint Yellow Liquid"	1	2	1	-	X	2	X	X	X	X	1	X	2	1	X	2	1	1	2	2
Carbon Monoxide	Gas	1	2	1	-	1	2	X	X	2	X	1	1	-	-	1	1	1	1	1	1
Carbon Tetrachloride (Pyrene)	Colorless Liquid	1	2	X	X	X	X	X	X	X	X	1	X	2	1	X	X	2	2	X	2
Carbonic Acid	Liquid	1	1	1	1	1	1	1	1	1	1	1	1	1	-	X	X	1	1	2	X
Carbonyl Chloride (Phosgene)	Gas / Liquid	1	X	X	X	X	X	X	X	X	1	1	X	-	2	-	-	-	-	-	1
Casein (White amorphous solid)	In Concentrated Acid	1	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-
Castor Oil	Pale Yellow or Colorless Liquid	1	1	-	-	-	1	X	X	1	2	1	1	1	-	1	1	1	1	1	1



Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Caustic Potash, Dry (Potassium Hydroxide)	White pellets or flakes	1	1	-	-	2	X	2	1	2	1	1	1	1	X	X	-	-	-	-	-
Caustic Potash, Liquid (up to 45%)	Solution in Water	1	1	1	1	2	2	2	2	-	1	2	-	1	1	1	-	-	-	-	-
Caustic Soda, Dry (Sodium Hydroxide)	White beads or pellets	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Caustic Soda, Liquid (up to 73%)	Solution in Water	1	2	-	1	2	X	1	1	2	2	X	1	1	2	X	-	-	-	-	-
Cellosolve Acetate (Eg Ethyl Ether Acetate)	Colorless Liquid	1	1	-	-	2	X	-	-	-	-	X	-	1	-	1	1	1	1	-	-
Cellosolve Butyl (Eg Butyl Ether)	Colorless Liquid	1	1	-	-	2	X	-	-	-	-	X	-	1	-	1	1	1	1	-	-
Cellulose	Solid, many forms	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-
Cement, Portland	Gray Powder	1	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
China-Wood Oil (Tung Oil)	Yellow Oil	1	2	-	X	X	2	X	X	X	X	1	2	-	-	2	1	1	1	1	1
Chlordane	Colorless Viscous Liquid	1	1	-	-	X	X	-	-	X	-	1	X	-	1	2	-	-	-	-	-
Chlorinated Naphthalene (Chloronaphthalene)	Oily Liquid to Solid	1	-	-	-	X	X	X	X	X	X	1	X	-	-	-	-	-	-	-	-
Chlorinated Solvents (ie Tetrachloroethane)	Colorless Liquid	1	X	X	X	X	-	X	X	-	X	1	X	X	1	X	-	-	-	-	-
Chlorine Gas	NO HOSE AVAILABLE																				
Chlorine Liquid(Liquid @ 210 PSIG @ 120°F/38°C )	Clear Amber Liquid	1	-	-	-	X	-	-	-	-	-	1	-	-	X	X	-	-	-	-	-
Chlorine Trifluoride	Pale Green Liquid	1	-	-	-	X	-	-	-	-	-	1	-	-	-	X	-	-	-	-	-
Chlorine Water (.03%/300PPM Chlorine)	Clear, yellowish Liquid	1	1	1	-	X	-	-	-	-	-	1	-	-	-	-	-	X	X	-	-
Chloroacetic Acid (Monochloroacetic Acid)	Powder or White Crystals	1	1	X	X	X	X	X	X	X	X	1	2	-	-	-	-	-	-	-	-
Chloroacetic Acid (Under 100°F/38°C)	Solid	1	1	1	X	X	X	X	X	X	X	1	2	-	-	-	-	-	-	-	-
Chloroacetic Acid Solution	In Water, Alcohol, Ether	1	1	X	1	2	-	-	-	-	-	-	-	-	X	-	X	X	X	-	2
Chloroacetone	Colorless Liquid	-	-	-	-	1	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
Chloroacetyl Chloride	Water White Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Chloroaniline	Amber Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene (Phenyl Chloride)	Clear Liquid	1	2	-	X	X	X	X	X	X	X	1	X	X	X	X	1	1	1	1	1
Chlorobromomethane (Bromochloromethane)	Clear Liquid	1	2	X	X	X	X	X	X	X	X	X	X	X	X	X	1	1	1	1	1
Chlorodifluoromethane (Freon 22)	Gas	SPECIAL HOSE REQUIRED														-	-	-	-	-	
Chloroethane (Ethylene Dichloride)	Colorless Liquid	1	2	2	X	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-	-
Chloroform	Colorless Liquid	1	2	2	X	X	X	X	X	X	X	1	X	X	2	X	1	1	1	1	1
Chloronaphthalene (Chlorinated Naphthalene)	Oily Liquid to Solid	1	-	-	-	X	X	X	X	X	X	1	X	-	-	-	-	-	-	-	-
Chloropentane (n-amyl chloride)	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	1	1	-	-
Chlorophenol	In Benzene, Alcohol, Ether	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloropicrin Mixture	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
Chloropropylene Oxide (Epichlorohydrin)	Volatile Liquid	1	2	-	X	X	-	-	-	-	-	X	-	-	-	-	1	-	-	-	-
Chlorosulfonic Acid	Colorless to Light Yellow Liquid	NO HOSE AVAILABLE														-	-	-	-	-	
Chlorothene (TM for chlorinated solvents)	Colorless Liquid	1	1	X	-	-	X	-	-	X	-	2	-	-	-	-	-	1	1	-	1
Chlorotoluene	Colorless Liquid	1	-	-	X	X	X	X	X	X	X	1	X	X	-	X	1	1	1	1	1

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Chlorox	Colorless Liquid	1	2	1	-	-	-	2	2	2	2	-	2	1	1	1	-	2	1	-	-
Chocolate Syrup	Liquid	-	-	-	1	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
Chrome Alum (Chromium Potassium Sulfate)	In Water	1	1	-	-	1	1	1	1	1	1	1	-	1	1	-	-	-	-	-	
Chromic Acid (100%)	Dark Red Crystals	1	X	2	-	-	-	-	-	-	1	-	-	-	X	X	X	X	X	X	
Chromic Acid (25% Solution or less)	In Water	1	1	1	1	2	X	X	X	X	X	1	2	1	X	X	X	X	2	X	X
Chromic Acid (50% Solution with water)	In Water	1	1	1	1	2	X	X	X	X	X	1	2	1	X	X	X	X	2	X	X
Chromic Acid (Chromium Trioxide)	Purplish-Red Crystals	1	X	2	-	-	-	-	-	-	-	1	-	-	-	X	X	X	2	X	X
Chromic Chloride	In Water	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	
Chromium Trioxide (Chromic Acid)	Purplish-Red Crystals	1	X	2	-	-	-	-	-	-	-	1	-	-	-	X	X	X	2	X	X
Cider	Liquid	1	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	
Cinene (Dipentene)	Colorless Liquid	1	2	-	X	X	X	X	X	-	-	1	-	-	-	-	-	-	-	-	
Citgo FR Fuels	Liquid	1	1	-	-	1	X	-	-	-	1	-	-	-	-	2	-	-	-	-	
Citric Acid Solution	In water	1	1	1	1	1	X	2	2	1	2	1	1	-	X	1	X	X	1	1	X
Coal Gas (Coke Oven Gas, Max 49°C)	Gas	1	-	-	X	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	
Coal Tar	Black, viscous Liquid	1	-	-	X	X	2	X	X	2	X	1	X	2	X	X	1	1	1	1	1
Coal Tar Pitch (Roofing)	Liquid above 212°F (100°C)	1	-	-	X	X	2	X	X	2	X	1	2	2	-	X	-	-	-	-	
Cobalt Nickel Plating Solution	Liquid	1	1	-	-	-	-	-	-	-	-	-	-	X	-	-	-	2	-	-	
Cocoa Butter (Theobroma Oil)	Liquid above 95°F (35°C)	1	1	2	2	-	2	X	X	2	-	-	-	-	-	1	1	1	-	-	
Coconut Oil	Liquid above 77°F (25°C)	1	-	-	X	2	1	X	X	1	2	1	2	-	1	-	-	-	-	-	
Cod Liver Oil	Pale Yellow Liquid	1	1	-	2	2	X	X	X	X	2	1	X	-	-	1	1	1	1	1	
Coke Oven Gas (Under 300°F/149°C)	Gas	1	1	-	X	X	X	X	X	X	X	1	2	-	-	1	1	1	2	-	
Copper Arsenate (Cupric Arsenate)	In Dilute Acid	1	1	-	-	-	-	2	2	-	-	1	2	-	-	-	1	1	1	-	-
Copper Chloride (Cupric Chloride)	In Water	1	1	-	-	-	2	2	2	2	2	1	2	2	X	1	X	X	1	-	X
Copper Cyanide (Cupric Cyanide)	In Dilute Acids or Alkalies	1	1	-	-	2	2	2	2	2	2	1	2	-	-	1	-	1	1	-	X
Copper Nitrate (Cupric Nitrate)	In Water	1	1	-	-	1	1	2	2	1	1	1	1	1	-	1	X	1	1	-	X
Copper Sulfate (Cupric Sulfate)	In Water	1	1	-	-	2	1	2	2	1	2	1	1	1	X	1	X	1	1	-	-
Copper Sulfide (Soluble in Nitric Acid)	In Nitric Acid	1	-	-	-	-	1	-	X	-	1	1	1	-	-	-	-	-	-	-	
Corn Oil	Pale Yellow Liquid	1	1	-	2	2	2	X	X	2	2	1	X	2	-	1	1	1	1	1	1
Corn Syrup (Glucose Syrup)	Clear Liquid	1	2	-	1	2	2	2	2	2	2	2	2	-	-	-	1	1	1	1	-
Cottonseed Oil	Liquid, several colors	1	1	-	2	2	2	-	-	1	-	1	2	2	-	-	1	1	1	1	1
Creosote (high Napthalene/Anthracene)	Liquid	X	2	X	X	-	2	X	X	X	2	1	2	-	-	X	2	1	1	1	X
Cresol (Methyl Phenol)	Liquid above 95°F (35°C)	1	2	-	-	-	X	X	X	X	2	1	X	1	X	-	2	1	1	1	-
Cresylic Acid	Liquid	1	-	-	-	X	X	X	X	X	1	X	-	X	-	-	-	-	-	-	-
Crotonic Acid (Methylacrylic Acid)	White Crystalline Solid	1	1	1	1	2	2	X	X	-	1	1	-	1	X	-	1	X	-	-	-
Crude Oil (Crude Petroleum Oil)	Liquid	1	1	-	X	X	1	X	X	2	X	1	2	2	-	1	1	1	1	1	1
Crude Wax	Liquid above 200°F (93°C)	1	2	-	-	-	2	-	-	-	2	1	-	-	-	1	1	1	1	-	1
Cryolite (Greeland Spar)	In Sulfuric Acid	1	2	-	-	X	1	X	X	2	X	1	X	-	-	-	1	1	1	-	1
Cumene (Isopropyl Benzene)	Colorless Liquid	1	2	-	X	-	-	-	-	-	-	1	-	2	-	-	-	-	-	-	-

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Cupric Arsenate (Copper Arsenate)	In Dilute Acid	1	1	-	-	-	-	2	2	-	-	1	2	-	-	-	1	1	1	-	-
Cupric Chloride (Copper Chloride)	In Water	1	1	-	-	-	2	2	2	2	2	1	2	2	X	1	X	X	1	-	X
Cupric Cyanide (Copper Cyanide)	In Dilute Acids or Alkalies	1	1	-	-	2	2	2	2	2	2	1	2	-	-	1	-	1	1	-	X
Cupric Nitrate (Copper Nitrate)	In Water	1	1	-	-	1	1	2	2	1	1	1	1	1	-	1	X	1	1	-	X
Cupric Sulfate (Copper Sulfate)	In Water	1	1	-	-	2	1	2	2	1	2	1	1	1	X	1	X	1	1	X	X
Cutting Oil (Mineral Oil Base)	Liquid	1	2	-	-	X	1	X	X	2	X	1	X	-	-	-	1	1	1	-	1
Cutting Oil, Sulfur Base	Liquid	2	-	-	-	-	1	-	-	X	-	-	-	-	-	-	1	1	1	-	1
Cutting Oil, Water Soluble	Liquid	1	-	-	-	-	1	-	-	X	-	-	-	-	-	-	1	1	1	-	1
Cyanide, Copper (Cupric Cyanide)	In Dilute Acids or Alkalies	1	1	-	-	2	2	2	2	2	2	1	2	-	-	1	-	1	1	-	X
Cyanide, Mercuric	In Water	1	1	-	-	2	2	2	2	1	2	-	1	-	-	-	-	-	-	X	-
Cyanide, Potassium	In Water	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Cyanide, Silver	In Nitric Acid	1	1	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-
Cyanide, Sodium	In Water	1	1	-	-	1	1	1	1	1	1	1	1	1	1	1	2	1	1	X	X
Cyclohexane	Colorless Liquid	1	2	1	-	X	2	X	X	X	X	1	X	1	-	X	1	1	1	-	1
Cyclohexanol	Colorless, oily Liquid	1	2	-	-	X	2	X	X	2	X	1	2	1	-	X	-	-	-	-	-
Cyclohexanone	Colorless to yellow Liquid	1	1	-	-	X	X	X	X	X	X	X	2	-	X	-	1	1	2	-	-
Cyclohexylamine	Colorless Liquid	-	-	-	-	1	-	X	-	-	1	X	-	-	-	-	-	-	-	-	-
Cyclopentane	Colorless Liquid	1	-	-	-	X	2	-	X	2	X	1	X	-	-	-	-	-	-	-	-
Cyclopentanol	Colorless Liquid	1	-	-	-	-	2	-	X	-	X	2	X	-	-	-	-	-	-	-	-
Cyclopentanone	Water white Liquid	-	-	-	-	-	X	-	X	-	X	X	X	-	-	-	-	-	-	-	-
Cymene	Colorless Liquid	1	2	-	-	X	X	X	X	X	X	2	X	2	-	X	1	1	1	1	1
Cymene (Isopropyltoluene)	Colorless Liquid	1	-	-	-	-	-	-	-	1	-	1	-	-	1	-	1	1	1	1	1
Decalin (TM for decahydronaphthalene)	Colorless Liquid	1	2	2	X	X	2	X	X	-	X	1	X	2	1	-	-	-	-	-	1
Decanal (Decyl Aldehyde)	Colorless to yellow Liquid	1	-	-	-	-	X	-	X	-	X	X	X	-	-	-	-	-	-	-	-
Decanol (Decyl Alcohol)	Colorless, water white Liquid	1	-	-	-	-	1	-	X	X	X	2	2	-	-	X	-	-	-	-	-
Decyl Aldehyde (n-decanal)	Colorless to yellow Liquid	1	-	-	-	-	X	-	X	-	X	X	X	-	-	-	-	-	-	-	-
Deicing Fluid (ethylene or propylene glycol)	Orange Liquid	1	1	1	1	1	1	-	-	1	1	1	2	1	-	1	2	1	1	1	1
Denatured Alcohol	Colorless Liquid	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Detergent Sol. (Sodium dodcylbenzenesulfonate)	In Water	1	2	1	1	1	1	X	X	2	1	-	1	-	-	1	2	1	1	1	1
Developing Solutions (Hypos)	Liquid	1	1	-	-	-	-	2	2	2	2	-	2	-	-	1	-	1	-	-	-
Dextron	Brown Liquid	1	X	-	-	X	1	-	-	-	X	-	-	1	1	2	-	-	-	-	-
Dextrin (Starch gum)	Yellow or White Powder	1	1	-	-	1	1	-	-	1	X	1	-	-	1	1	-	1	-	-	-
Diacetone	Colorless Liquid	1	1	-	-	2	X	X	X	X	2	X	X	1	1	X	1	1	1	-	1
Diacetone Alcohol	Colorless Liquid	1	1	-	-	-	X	2	2	-	2	X	2	1	-	X	1	1	1	1	1
Diammonium Phosphate	In Water	1	1	-	-	1	1	1	1	1	1	-	1	-	-	1	X	2	1	X	-
Diazinon	In Petroleum Solvents	1	-	-	-	1	-	1	1	-	-	1	-	-	-	2	-	-	-	-	-
Dibenzyl Ether	Colorless Liquid	1	1	-	-	2	X	X	X	X	2	X	X	2	-	-	1	1	1	1	1
Dibutyl Ether	Colorless Liquid	1	1	-	-	-	X	X	X	X	2	X	X	1	-	-	1	1	1	1	1
Dibutyl Phthalate	Colorless Oily Liquid	1	1	-	-	1	X	X	X	X	2	2	X	2	-	1	1	1	1	1	1
Dibutylamine	Colorless Liquid	1	-	-	X	X	X	X	X	X	X	X	X	X	-	X	-	-	-	-	-
Dibutylsebacate	Clear Colorless Liquid	1	1	-	-	X	X	X	X	X	2	1	-	2	-	-	-	-	-	-	1
Dichloroacetic Acid	Colorless Liquid	1	-	-	-	-	X	-	2	-	X	X	X	-	-	-	-	-	-	-	-
Dichloroaniline	In Alcohol or Benzene	1	-	-	-	X	X	X	-	X	X	2	-	-	-	-	-	-	-	-	-
Dichlorobenzene (ortho)	Colorless Liquid	1	2	-	X	X	X	X	X	X	X	1	X	X	1	X	-	1	1	-	1
Dichlorobenzene (para)	White Crystals	1	2	-	-	X	X	X	X	X	X	1	X	X	1	X	-	1	1	-	1
Dichlorobenzyl Chloride	Colorless Liquid	1	2	-	X	X	X	X	X	X	X	1	X	X	-	X	-	-	-	-	-

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings				
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum
Dichlorodifluoromethane (Freon 12)	Gas, Liquid @ 140 PSIG @ 100°F (38°C)"	SPECIAL HOSE REQUIRED														-	-	-	-	-
Dichloroethane (Ethylene Dichloride)	Colorless Oily Liquid	1	2	2	X	X	X	X	X	X	X	2	X	X	X	-	-	-	-	-
Dichloroethyl Ether	Colorless Liquid	1	-	-	-	-	X	-	X	-	X	-	X	-	-	-	-	-	-	-
Dichloroethylene	Colorless Liquid	1	2	X	-	X	X	X	X	X	1	X	-	-	-	-	-	-	-	-
Dichloroethylene (Acetylene Dichloride)	Colorless Liquid	1	X	X	X	X	-	X	X	-	X	1	-	X	1	X	-	-	-	-
Dichloromethane (Methylene Chloride)	Colorless Liquid	1	1	2	X	X	X	X	X	X	2	X	X	X	X	1	1	1	-	1
Dichloropentane	Light Yellow Liquid	1	-	-	-	X	X	X	X	X	1	X	-	-	-	-	-	-	-	-
Dichloropropane	Colorless Liquid	1	-	-	-	X	X	X	X	X	2	X	-	-	-	-	-	-	-	-
Dicyclohexylamine	Colorless Liquid	1	-	-	-	X	-	X	X	X	X	X	-	-	-	-	-	-	-	-
DIDA (Diisodecyl Adipate)	Light Colored Oily Liquid	1	-	-	-	-	X	-	X	-	1	X	X	-	-	-	-	-	-	-
Diesel Fuel	Liquid	1	2	1	X	X	1	X	X	2	X	-	X	-	1	-	1	1	1	1
Diethanolamine (20%) In Water or Alcohol		1	-	-	1	2	2	2	2	X	1	1	2	1	1	2	1	1	1	1
Diethanolamine Liquid above 83°F (29°C)		1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1
Diethyl Ether (Ethyl Ether)	Colorless Liquid	1	2	-	1	X	X	X	X	X	2	X	X	1	-	2	2	1	1	1
Diethyl Ketone	Colorless Liquid	1	-	-	-	2	X	-	X	X	2	X	X	-	-	X	-	-	-	-
Diethyl Oxalate	Colorless Oily Liquid	1	-	-	-	X	X	-	X	X	X	-	X	-	-	X	-	-	-	-
Diethyl Phthalate (Ethyl Phthalate)	Water White Liquid	1	1	-	-	-	X	X	X	-	2	-	-	2	-	-	-	1	1	-
Diethyl Sebacate	-	1	1	-	-	-	X	X	X	X	2	2	X	2	-	-	-	1	1	-
Diethyl Sulfate	Colorless Liquid	1	-	-	-	1	X	1	X	1	2	X	X	-	-	-	-	-	-	-
Diethyl Sulfide (Ethyl Sulfide)	Colorless Oily Liquid	1	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
"Diethylacetaldehyde (Ethylbutyraldehyde)"	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diethylamine	Colorless Liquid	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-
Diethylbenzene	Colorless Liquid	1	1	-	-	X	-	X	X	-	X	1	-	2	-	-	-	-	-	-
Diethylene Dioxide (1,4 Dioxane)	Colorless Liquid	1	1	-	1	2	X	X	X	X	2	X	X	2	1	X	1	1	1	1
Diethylene Ether (Dioxane)	Colorless Liquid	1	1	-	1	2	X	X	X	X	2	X	X	2	1	X	1	1	1	1
"Diethylene Glycol (Dihydroxydiethyl Ether)"	Colorless Syrupy Liquid	1	1	-	1	1	1	1	1	1	1	-	1	1	1	1	1	1	1	1
Diethylene Glycol Methyl Ether (Methyl Cellosolve)	Colorless Liquid	1	1	-	1	1	-	X	X	-	X	1	X	1	-	-	-	-	-	-
Diethylene Glycol Monobutyl Ether	Colorless Liquid	1	1	-	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
"Diethylene Glycol Monobutyl Ether Acetate"	Colorless Liquid	1	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diethylene Glycol Monoethyl Ether	Colorless Liquid	1	1	-	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Diethylene Glycol Monomethyl Ether Acetate	Colorless Liquid	1	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diethylenetriamine	Yellow Liquid	1	1	1	-	1	-	X	-	X	1	X	X	-	-	-	-	-	-	-
Dihydroxyacetone In Water		1	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dihydroxydiethyl ether (Diethylene glycol)	Colorless Syrupy Liquid	1	1	1	1	1	1	1	1	1	1	1	-	1	1	1	1	1	1	1
Diisobutyl Ketone	Colorless Liquid	1	1	-	1	1	X	X	X	X	2	X	X	2	1	-	-	1	1	-
Diisobutyl Phenol (Octyl Phenol)	White Flakes	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Diisobutyl Phthalate	Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Diisobutylene	Colorless Liquid	1	1	-	X	X	2	X	X	X	X	1	X	1	-	-	-	1	1	-	1
Diisodecyl Adipate (DIDA)	Light Colored Oily Liquid	1	-	-	-	-	X	-	X	-	1	X	X	-	-	-	-	-	-	-	-
Diisooctyl Phthalate (DIOP)	Nearly Colorless Liquid	1	-	-	-	1	X	-	X	-	1	X	X	-	-	-	-	-	-	-	-
Diisopropanolamine	Liquid above 108°F(42°C)	1	-	-	-	-	2	-	2	-	1	-	-	-	-	-	-	-	-	-	-
Diisopropyl Ketone	Colorless Liquid	1	1	-	1	1	X	X	X	X	2	X	X	-	1	-	-	1	1	-	1
Diisopropylamine	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diisopropylbenzene (meta)	Colorless Liquid	1	2	2	X	X	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Diisopropylidene Acetone (Phorone)	Yellow Liquid	1	1	-	-	2	X	X	X	X	2	X	X	-	-	-	1	1	1	-	1
Dilauryl Ether	Liquid above 92°F (33°C)	1	1	-	1	1	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
Dimethyl Acetamide (DMAC)	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethyl Aniline	Yellow / Brown Oily Liquid	1	1	-	-	X	X	X	X	X	2	1	X	2	-	-	-	-	-	-	1
Dimethyl Ether	Liquid under Pressure	1	1	1	1	1	X	X	X	X	2	X	X	-	-	-	1	1	1	1	1
Dimethyl Formamide	Water White Liquid	1	1	-	1	2	-	-	-	-	-	X	-	-	-	-	1	1	1	-	-
Dimethyl Phthalate	Colorless Oily Liquid	1	1	-	1	2	X	X	X	X	2	1	X	1	-	-	-	-	-	-	1
Dimethyl Sulfate (Methyl Sulfate)	Colorless Liquid	1	1	-	-	X	X	X	X	X	2	X	X	-	1	1	-	-	-	-	-
Dimethyl Sulfide	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Dimethyl Sulfoxide	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Dimethyl Terephthalate	Colorless Crystals	-	-	-	-	-	X	X	-	X	X	1	-	-	-	-	-	-	-	-	-
Dimethylamine (DMA)	"Liquid @ 70 PSIG @ 120°F (49°C)"	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethylaminoethanol (Dimethylethanolamine)	Colorless Liquid	1	1	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethylaminomethyl Phenol (DMP)	Dark Red Liquid	1	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Dimethylbenzene (DMB)	Colorless Liquid	1	X	X	X	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-	-
Dimethylcarbinol (isopropyl alcohol)	Colorless Liquid	1	1	1	1	1	1	2	2	2	1	1	2	1	1	2	1	1	1	1	2
Dimethylcyclohexylamine	Water White Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethylformamide (DMF)	Water White Liquid	1	2	-	-	-	-	-	-	-	-	X	-	-	-	-	1	1	1	-	-
Dimethylketone (Acetone)	Colorless Liquid	1	1	X	1	2	X	X	X	X	2	X	X	1	1	X	1	1	1	1	1
Dimethylphenol (Xylenol)	White solid, liquid @20°C	1	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Dinitrobenzene (Soluble in Chloroform)	In Chloroform	1	2	-	X	X	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Dinitrogen Tetroxide (Nitrogen Dioxide)	Liquid @ 50 PSIG @ 49°C	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Dinitrotoluene, Solid	In Alcohol or Ether	1	1	1	1	1	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
Diocetyl Adipate di-(2-ethylhexyl) adipate	Light Colored Oily Liquid	1	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Diocetyl Phosphite, di-(2-ethylhexyl) phosphite	Colorless Liquid	1	1	-	1	X	-	-	-	-	-	1	-	-	-	X	-	-	-	-	-
Diocetyl Phthalate, di-(2-ethylhexyl) phthalate	Light Colored Liquid	1	1	-	1	X	X	X	X	X	X	1	X	2	-	-	1	1	1	1	1
Diocetyl Sebacate, di-(2-ethylhexyl) sebacate	Pale Straw Colored Liquid	1	1	-	1	-	X	X	X	X	2	1	X	X	-	-	-	-	-	-	-
Diocetylamine di-(2-ethylhexyl) amine	Water White Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DIOP (Diisooctyl Phthalate)	Nearly Colorless Liquid	1	-	-	-	1	X	-	X	-	1	X	X	-	-	-	-	-	-	-	-
Dioxane (Diethylene Dioxide)	Colorless Liquid	1	1	-	1	2	X	X	X	X	2	X	X	2	1	X	1	1	1	1	1
Dioxane (Diethylene Ether)	Colorless Liquid	1	1	-	1	2	X	X	X	X	2	X	X	2	1	X	1	1	1	1	1
"Dioxolane (Ethylene Glycol Formal)"	Water White Liquid	1	-	-	-	-	-	-	-	-	-	X	-	-	-	-	1	1	1	1	1
Dipentene (Cinene, Limonene)	Colorless Liquid	1	2	-	X	X	X	X	X	-	-	1	-	-	1	-	1	1	1	1	1

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings				
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum
Diphenyl Phthalate	Yellow White Powder	1	1	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Dipropyl Ketone	Colorless Liquid	1	1	-	1	1	-	-	-	-	-	X	-	-	-	-	-	-	-	-
Dipropylamine	Water White Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dipropylene Glycol	Colorless Liquid	1	1	1	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Dipropylene Glycol Monomethyl Ether (DPM)	Colorless Liquid	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dirco Oils	Liquid	1	1	-	-	X	1	-	-	-	X	-	-	-	1	-	1	1	1	1
Disodium Phosphate (DSP soluble in H <sub>2</sub> O)	Colorless or White Powder	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Disodium Phosphate Solution	In Water	1	1	1	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Distillate Fuel Oil	Clear to Brown Liquid	1	2	-	X	X	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Divinylbenzene (20-25% or 50-60% Grades)	Water White to Straw Liquid	1	2	-	X	X	X	X	X	-	X	1	-	-	-	-	-	-	-	-
DMA (Dimethylamine)	Gas	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DMAC (Dimethyl Acetamide)	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DMB (Dimethylbenzene)	Colorless Liquid	1	X	X	X	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-
DMF (Dimethylformamide)	Water white Liquid	1	2	-	-	-	-	-	-	-	-	X	-	-	-	-	1	1	1	-
DMP (Dimethylaminomethyl phenol)	Dark Red Liquid	1	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
"Dodecylbenzene (Detergent Alkylate)"	Liquid	1	2	-	X	X	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Dodecylphenol	Straw Colored Liquid	1	1	-	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Dolomite	Gray, Pink or White Powder	-	-	-	-	2	1	-	-	1	-	1	1	-	-	-	-	-	-	-
Dowtherm A (Biphenyl and Biphenyl Ether Mix.)	Liquid	1	1	-	1	1	X	X	X	X	X	1	X	2	-	X	1	1	1	1
Dowtherm SR-1 (Ethylene Glycol)	Liquid	1	1	1	1	1	1	-	-	-	1	1	-	1	-	-	2	1	1	1
DPM (Dipropylene Glycol Monomethyl Ether)	Colorless Liquid	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Duro Oils	Liquid	1	1	-	-	X	1	-	-	-	X	-	-	-	1	2	1	1	1	1
EDB (Ethylene Dibromide)	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
"EDTA (Ethylenediaminetetraacetic Acid)"	Colorless Crystals	1	1	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Emulsion (Oil in Water)	Water is Continuous Phase	1	1	1	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Enamels	Liquid	1	1	-	X	X	-	-	-	-	-	1	-	-	1	2	-	-	-	1
"Epichlorohydrin (Chloropropylene Oxide)"	Volatile Liquid	1	2	-	X	X	-	-	-	-	-	X	-	-	-	-	1	-	-	-
Epoxy Resin	Solid Pellet	-	-	-	-	1	-	-	-	1	2	X	-	-	-	-	-	-	-	-
Essential Oils	Liquid	1	2	-	X	X	1	X	X	2	-	1	-	-	-	2	1	1	1	1
Ethanol (Ethyl Alcohol)	Colorless Liquid	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2
Ethanolamine (Aminoethanol)	Colorless Viscous Liquid	1	2	1	1	2	2	2	2	2	2	X	X	1	1	2	1	1	1	-
Ethers	Liquids	1	1	X	1	1	2	X	X	X	2	X	2	1	-	2	1	1	1	1
Ethyl Acetate (Acetic Ether)	Colorless Liquid	1	1	1	2	2	X	X	X	X	2	X	X	2	1	X	1	1	1	1
Ethyl Acetoacetate	Colorless Liquid	1	1	-	-	2	X	X	X	X	2	X	X	1	-	-	1	1	1	1
Ethyl Acrylate	Colorless Liquid	1	2	-	2	2	X	X	X	X	X	X	X	2	-	X	1	1	1	-
Ethyl Acrylate, Inhibited	Colorless Liquid	1	2	-	2	2	X	X	X	X	X	X	X	2	-	X	1	1	1	-
Ethyl Alcohol (Ethanol)	Colorless Liquid	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2
"Ethyl Aluminum Dichloride (Above 90°F/32°C)"	Clear Yellow Liquid	1	-	-	-	-	X	-	X	X	X	2	X	-	-	-	-	-	-	-
Ethyl Bromide	Colorless Liquid	1	2	-	-	X	X	X	X	X	X	1	X	2	1	X	-	1	1	-
"Ethyl Butyl Ether (Butyl Ethyl Ether)"	Liquid	1	-	-	-	-	2	-	X	-	X	-	2	-	-	-	-	-	-	-

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Ethyl Butyrate	Colorless Liquid	1	1	-	-	-	X	X	X	X	2	-	-	-	-	-	1	1	1	-	2
Ethyl Chloride	Compressed Liquid	1	2	2	-	X	X	X	X	X	1	X	-	-	X	2	1	1	1	1	2
"Ethyl Chloroformate (Ethyl Chlorocarbonate)"	Water White Liquid	1	-	-	-	X	X	-	-	-	1	-	-	-	-	-	-	-	-	-	
Ethyl Ether (Diethyl Ether)	Colorless Liquid	1	2	X	1	X	X	X	X	X	2	X	X	1	2	X	2	1	1	1	1
"Ethyl Ether Acetate (Cellosolve Acetate)"	Colorless Liquid	1	1	-	-	2	X	-	-	-	-	X	-	1	-	1	1	1	1	-	
Ethyl Formate	Water White Liquid	1	-	-	-	2	X	-	-	-	-	1	-	-	-	-	-	-	-	-	
Ethyl Iodide	Colorless Liquid	1	-	-	-	X	X	-	X	X	2	X	-	-	-	-	-	-	-	-	
Ethyl Isobutyrate	Colorless Liquid	1	-	-	-	X	X	-	X	X	X	-	-	-	-	-	-	-	-	-	
Ethyl Mercaptan (Ethanethiol)	Colorless Pungent Liquid	1	1	-	-	X	X	X	X	X	1	X	-	-	X	2	-	-	-	-	
Ethyl Methyl Ketone (MEK)	Colorless Liquid	1	1	1	1	2	X	-	-	X	-	X	X	2	1	X	-	-	-	-	
Ethyl Oleate	Light Yellowish Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethyl Oxalate	Colorless Liquid	1	1	-	-	2	X	2	2	X	2	1	-	1	-	-	-	-	-	-	
Ethyl Pentachlorobenzene	-	1	1	-	-	X	X	X	X	X	1	X	-	-	-	2	1	1	-	1	
"Ethyl Phthalate (Diethyl phthalate)"	Water White Liquid	1	1	-	-	-	X	X	X	-	2	-	-	2	-	-	-	1	1	-	
Ethyl Propionate	Water White Liquid	1	-	-	-	X	X	-	X	X	X	-	-	-	-	-	-	-	-	-	
Ethyl Propyl Ketone (3-Hexanone)	Colorless Liquid	1	-	-	-	-	X	-	X	-	2	X	X	-	-	-	-	-	-	-	
Ethyl Silicate	Colorless Liquid	1	1	-	-	2	1	2	2	1	-	1	-	1	-	1	1	1	1	1	
Ethyl Sulfide (Diethyl Sulfide)	Colorless Oily Liquid	1	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
Ethylamine	Colorless Liquid or Gas	1	2	-	1	1	X	X	X	X	2	X	X	1	-	-	-	1	1	-	
Ethylbenzene	Colorless Liquid	1	2	-	-	X	X	X	X	X	1	X	2	-	-	1	1	1	-	1	
"Ethylbutanol (2-Ethylbutyl Alcohol)"	Colorless Liquid	1	1	1	1	1	1	-	-	1	1	1	2	1	1	1	-	-	-	-	
Ethylbutyl Alcohol (Ethylbutanol)	Colorless Liquid	1	1	1	1	1	1	-	-	1	1	1	2	1	1	1	-	-	-	-	
Ethylbutyl Amine	Water White Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethylbutyl Ketone	Clear Liquid	1	1	-	-	1	1	-	-	-	-	X	-	-	-	-	-	-	-	-	
"Ethylbutyraldehyde (Diethylacetaldehyde)"	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethylcellulose	Granular Solid	1	1	-	-	-	-	-	1	-	-	-	-	1	-	-	1	1	1	-	
Ethylene Chlorohydrin	Colorless Liquid	1	1	-	2	X	X	-	-	X	2	1	-	-	X	X	-	-	-	-	
Ethylene Cyanohydrin	Straw Colored Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethylene Dibromide (EDB)	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	
"Ethylene Dichloride (Chloroethane)"	Colorless Liquid	1	2	2	X	X	X	X	X	X	2	X	X	X	X	-	-	-	-	-	
Ethylene Glycol	Colorless Liquid	1	1	1	1	1	1	-	-	1	1	1	2	1	-	1	2	1	1	1	
"Ethylene Glycol Formal (Dioxolane)"	Water White Liquid	1	-	-	-	-	-	-	-	-	-	X	-	-	-	-	1	1	1	1	
Ethylene Glycol Monoethylether	Colorless Liquid	1	1	-	1	1	X	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethylene Glycol Monoethylether Acetate	Colorless Liquid	1	1	-	1	1	X	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethylene Glycol Monomethyl Ether	Colorless Liquid	1	1	-	1	2	X	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethylene Glycol N-Butyl Ether	Colorless Liquid	1	1	-	1	1	X	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethylenediamine	Colorless Liquid	1	2	-	-	2	1	-	-	-	2	X	-	-	-	-	1	1	-	1	
"Ethylenediaminetetraacetic acid (EDTA)"	Colorless Crystals	1	1	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
Ethylhexaldehyde	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethylhexanediol	Colorless Liquid	1	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Chemical	Form (at room temperature unless otherwise stated)	Hose Material													Couplings						
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
"Ethylhexanol (2-ethylhexyl alcohol)"	Colorless Liquid	1	1	1	1	1	1	1	-	1	1	-	1	1	-	-	-	-	-	-	
Ethylhexoic Acid	Liquid	1	1	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethylhexyl Acetate	Water White Liquid	1	1	-	-	1	X	-	-	X	-	X	X	-	1	-	-	-	-	-	
Ethylhexyl Acrylate	Liquid	1	2	-	2	-	X	-	-	-	-	X	-	-	-	X	-	-	-	-	
Ethylhexyl Alcohol (Ethylhexanol)	Colorless Liquid	1	1	1	1	1	1	1	1	-	1	1	-	1	1	1	-	-	-	-	
Fatty Acid Solid, Fatty Alcohol, Blend	Semisolid or Liquid "C8-11 Liquids, > C11 Solids"	1	2	2	2	2	2	X	X	2	2	2	X	2	-	2	2	1	1	1	2
Fatty Petroleum Alcohol	C11 or Less are Liquids	1	1	1	1	1	1	1	1	1	1	1	-	1	1	1	-	-	-	-	
Ferric Bromide	Red Crystals	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	
Ferric Chloride	Black-Brown Solid	1	1	-	-	-	2	-	1	2	1	1	2	1	1	1	X	X	X	X	X
Ferric Chloride solution	Liquid	1	1	-	-	-	2	-	1	2	1	1	2	1	1	1	X	X	X	X	X
Ferric Nitrate	Violet Crystals	1	1	-	-	-	-	2	1	2	2	-	2	1	-	-	X	1	1	-	-
Ferric Nitrate Solution	Liquid	1	-	-	-	1	1	-	1	1	1	1	1	-	1	-	X	1	1	-	-
Ferric Sulfate Gray Powder"	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	X	1	1	X	X	-
Ferric Sulfate Solution	Liquid	1	1	1	-	2	2	2	-	2	2	1	2	1	-	1	X	1	1	X	X
Ferrous Acetate Solution	Liquid in H2O or Alcohol	1	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Ferrous Chloride	Greenish-White Crystals	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	X	1	2	-	2
Ferrous Chloride, Solution	Liquid	1	1	-	-	-	-	-	-	-	1	1	2	1	-	1	X	1	2	-	2
Ferrous Nitrate	-	1	1	-	-	2	2	-	-	2	2	-	2	-	-	2	-	1	1	-	-
Ferrous Sulfate Solution	Liquid	1	1	1	-	2	2	2	-	2	2	1	2	1	-	1	X	1	1	X	X
Fertilizer (Liquid Manure)	Liquid	1	1	1	1	1	1	1	1	1	1	1	-	1	2	1	1	1	1	1	1
Finishing Oil	Liquid	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fire-Resistant Hydra-Fluid (Texaco)	Liquid	1	1	-	-	X	1	-	-	-	X	-	-	-	-	-	1	1	1	1	1
Firtec 290, MF	Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fish Oil	Liquid	1	-	1	X	X	1	-	-	2	-	1	-	-	-	-	-	-	-	-	-
Fixing Solution (Photo)	Liquid	1	1	-	-	-	-	2	2	2	2	-	2	-	1	1	-	1	1	-	-
Flint	Gray, Brownish, Black	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Floor Wax (Temperature Dependent)	Varies	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoboric Acid (48% Purity)	Colorless Liquid	1	1	1	1	2	-	2	2	2	-	-	2	1	-	X	-	1	1	-	-
Fluoboric Acid (up to 48%)	Colorless Liquid	1	1	-	-	1	-	2	2	2	-	1	2	1	-	X	-	1	1	-	-
Fluorine	Pale Yellow Gas	X	-	X	-	X	-	-	-	-	-	1	-	-	X	1	-	-	-	-	-
Fluorine (Liquid)	Yellow Liquid	NO HOSE AVAILABLE													-	-	-	-	-	-	
Fluosilicic Acid (50%)	Colorless Liquid	1	1	1	1	2	X	-	-	2	X	-	2	1	X	X	-	-	-	1	-
Formaldehyde	Gas	-	1	-	-	1	-	-	-	-	-	1	-	-	1	-	X	2	1	2	1
Formaldehyde Solution (up to 50%)	Liquid	1	2	1	1	1	2	X	X	2	2	1	2	1	1	1	X	2	1	2	1
Formalin (37-50% HCHO with 15% MeOH)	Liquid	1	1	-	1	1	2	X	X	2	2	1	2	1	1	1	-	-	-	-	-
Formamide	Colorless Oily Liquid	1	1	-	-	-	-	X	X	-	-	-	-	-	X	-	-	-	-	-	-
Formic Acid	Colorless Liquid (bp 100°C)	1	1	1	1	2	-	X	X	1	2	X	2	1	X	X	X	2	1	-	2
FR Fluid D	Liquid	1	1	-	-	X	1	-	-	-	X	-	-	-	-	-	-	-	-	-	-
FR Hydraulic Fluid	Brown Liquid	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Freon 12 (Dichlorodifluoromethane)	Gas or Liquid	SPECIAL HOSE REQUIRED																			
Freon 13	Gas or Liquid	SPECIAL HOSE REQUIRED																			



Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings						
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	
Freon 134a (HFC 134a) "Freon 22 (Chlorodifluoromethane)" Freon 23 Clear Liquid Fruit Juices Fuel Oil (ASTM 1-6) Brown Liquids" Fumaric Acid	Gas or Liquid	SPECIAL HOSE REQUIRED														-	-	-	-	-		
	Gas or Liquid SPECIAL HOSE REQUIRED Liquid "Water White to 1 Colorless Crystals	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	
"Fumaric Acid Solution (Allomalaic Acid)" Furan (Furfuran) Furfural (Ant Oil)	Liquid	1	1	-	-	2	1	2	2	-	-	1	-	-	-	X	-	1	1	-	-	
	Colorless to Brown Liquid "Colorless to Reddish Brown Liquid	1	1	1	-	X	X	X	X	X	X	X	-	-	1	-	X	1	1	1	1	1
Furfural Alcohol Furfuran (Furan)	Colorless to Brown Liquid	1	1	2	2	X	X	X	X	2	X	1	2	1	1	X	2	1	1	1	1	
	Colorless to Brown Liquid	1	1	1	-	X	X	X	X	X	X	-	-	1	-	X	1	1	1	1	1	
Furfuryl Alcohol  Fusel Oil(Amyl Alcohol, Grain Oil) Fyrguard 150, 200 "Fyrquel 15R&O, 220R&O, 550R&O" "Fyrquel 90, 150, 220, 300, 550,1000"	"Colorless to Reddish Brown Liquid	1	1	-	2	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	
	Colorless Liquid	1	1	1	1	2	2	2	2	2	2	1	2	1	1	1	1	1	1	1	1	
	-	1	1	-	-	1	1	-	-	-	1	-	-	-	-	-	-	1	1	1	1	1
	-	1	1	-	-	1	X	-	-	-	1	-	-	-	-	-	-	1	-	-	1	-
"Gallic Acid (3,4,5 Trihydroxybenzoic Acid)" Gallic Acid Solution "Gasohol (Gasoline blended with Ethanol)1" "Gasoline (Oxygenated - Blended With MTBE)1" "Gasoline (Unleaded Up to 50% Aromatics)1"	In Alcohol or Glycerol	1	1	1	1	1	X	2	2	X	2	1	-	1	X	X	X	1	1	-	-	
	In Alcohol Solution	1	1	-	1	-	X	2	2	X	2	1	-	1	X	X	X	1	1	-	-	
	Colorless Liquid	1	2	1	X	X	2	X	X	2	X	1	X	-	1	X	2	1	1	1	1	
	Colorless Liquid	1	2	1	X	X	2	X	X	2	X	1	X	-	1	X	2	1	1	1	1	
Gasoline (White)1 Gelatin Glacial Acetic Acid Glacial Methacrylic Acid (GMAA) "Glauber's Salt (Sodium Sulfate Decahydrate)"	Colorless Liquid	1	2	-	X	X	2	X	X	2	X	1	X	-	1	X	2	1	1	1	1	
	Flakes or Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1	-	-	-	-	-	
	Clear Colorless Liquid	1	1	1	X	2	-	-	-	X	X	X	-	X	X	X	-	-	-	-	-	
	White Crystals	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
"Gluconic Acid (Commercial 50% Aqueous)" Glucose Glucose Solution Glue Glycerine (Glycerol)	Aqueous Solution	1	-	-	-	-	X	-	X	-	X	-	2	-	-	-	-	-	-	-	-	
	Crystals to White Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	1	1	1	
	Liquid	1	1	-	1	1	1	1	1	1	1	1	1	-	-	1	1	1	1	1	1	
	Varies	1	1	-	-	X	2	X	X	2	X	1	1	-	2	1	2	1	1	1	X	
Glycerol (Glycerine) Glycerol Monolaurate Glycol FR Fluids Glycol Slurry Glycols (ie Ethylene Glycol)  GMAA (Glacial Methacrylic Acid) Graphite	Clear Viscous Liquid	1	1	-	1	1	1	1	1	1	1	1	1	1	-	1	2	1	1	1	1	
	Liquid above 80°F (27°C)	1	1	1	1	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	
	Liquid	1	-	-	-	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	
	Watery suspension	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Clear Colorless Liquid	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	1	1	1	1	1	
	White Crystals	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Powdered, Flake, Crystals	1	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Grease	Semi-Solid	1	1	2	2	X	1	X	X	2	X	1	2	-	-	1	1	1	1	1	1
"Halowax (Chlorinated Hydrocarbons)"	Oils to Waxy Solid	1	1	1	-	X	X	X	X	X	X	1	X	-	-	-	-	-	-	-	-
HEA (2-Hydroxyethyl Acrylate) Liquid	1	1	1	1	X	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-
"HEA Acid (2-Hydroxyethyl Acrylate)"	Liquid	1	1	1	1	X	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-
Hematite (Iron Ore)	Black to Brick Red	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
HEP (2-Hydroxypropyl Acrylate)	Liquid	1	1	1	1	X	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-
Heptachlor (In Xylene)	Liquid	1	2	-	X	X	2	X	X	X	1	-	-	1	X	-	-	-	-	-	-
Heptanal (Heptaldehyde)	Colorless Oily Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptane	Colorless Liquid	1	2	1	X	X	1	X	X	2	X	1	X	1	1	2	1	1	1	1	1
"Heptanedicarboxylic Acid (Azelaic Acid)"	Yellowish to White Powder	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Heptanoic Acid	Clear Oily Liquid	1	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Heptanol	Colorless Liquid	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-
Hexachlorocyclohexane	White to Yellowish Flakes	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	Yellow Liquid	1	-	-	X	X	-	X	X	-	X	1	-	-	-	-	-	-	-	-	-
Hexadecanoic Acid (Palmitic Acid)	White Crystals	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Hexahydrophthalic Anhydride	"Clear Colorless Viscous Liquid"	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexaldehyde	Colorless Liquid	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1
Hexamethylenediamine, Solution	"Colorless Flat Solid Leaflets"	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Hexamethyleneimine	Clear Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexane	Colorless Liquid	1	X	1	X	X	1	X	X	-	X	1	-	1	1	X	1	1	1	-	1
Hexanol (Hexyl Alcohol)	Colorless Liquid	1	1	-	-	X	1	-	-	2	-	1	X	1	-	-	1	1	1	1	2
Hexanone (Ethyl Propyl Ketone)	Colorless Liquid	1	-	-	-	-	X	-	X	-	2	X	X	-	-	-	-	-	-	-	-
Hexene	Colorless Liquid	1	-	-	X	X	2	X	X	-	X	1	-	1	-	-	1	1	1	-	1
"Hexyl "Cellosolve"" (EG monoethyl ether)"	Water White Liquid	1	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Hexyl Alcohol (Hexanol)	Colorless Liquid	1	1	-	-	X	1	-	-	2	-	1	X	1	-	-	1	1	1	1	2
Hexyl Methacrylate	Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexylamine	Water White Liquid	1	-	-	-	-	X	-	X	-	2	X	X	-	-	-	-	-	-	-	-
Hexylene (1-Hexene)	Colorless Liquid	1	-	-	X	X	2	X	X	-	X	1	-	1	-	-	1	1	1	-	1
Hexylene Glycol	Colorless Liquid	1	1	1	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Honey	Yellow Liquid	1	-	-	-	1	1	-	1	1	-	1	-	-	-	1	-	-	-	-	-
Houghto-Safe 1055, 1110, 1115, 1120, 1130	Liquid	1	1	-	-	1	X	-	-	-	1	-	-	-	-	-	1	1	1	1	1
"Houghto-Safe 271, 416, 520 & 616, 620"	Liquid	1	1	-	-	1	1	-	-	-	1	-	-	-	-	-	1	1	1	1	1
Houghto-Safe 5046	Liquid	1	1	-	-	X	1	-	-	-	X	-	-	-	-	-	1	1	1	1	1
Houghto-Safe 625, 640 & 525 (Under 100°F/38°C)	Liquid	1	1	-	-	1	1	-	-	-	1	-	-	-	-	-	1	1	1	1	1
"HPA Acid (2-Hydroxypropyl Acrylate)"	Liquid	1	1	1	1	X	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-
HPO (Sodium Thiosulfate)	White Powder	1	1	-	-	-	1	1	1	1	1	-	1	1	1	1	X	1	1	2	X
Hy-Chock Oil	Liquid	1	1	-	-	-	1	-	-	-	-	1	-	-	1	-	1	1	1	-	-
Hydrocyanic Acid (upto 98%)	Water White Liquid	1	X	-	-	-	-	-	-	-	-	1	-	-	-	-	X	1	1	1	X
"Hydrafluid 760 (Texaco and Houghton)"	Liquid	1	1	-	-	X	1	-	-	-	X	1	-	-	1	-	1	1	1	1	1

Chemical	Form (at room temperature unless otherwise stated)	Hose Material													Couplings						
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Hydrafluid AZR&O, A, B, AA, C Hydrasol A (Textile Dying)	Liquid -	1 1	1 1	- -	- -	X X	1 1	- -	- -	- -	X X	1 1	- -	- 1	- -	1 1	1 1	1 1	1 1	- -	
"Hydraulic Fluid (Phosphate Ester Base)"	Liquid	1	1	-	-	1	X	-	-	X	1	1	-	-	1	1	1	1	1	-	-
Hydraulic Fluid (Polyalphaolifin)	Liquid	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1	1	1	1
"Hydraulic Fluid (Std. Petroleum Oils)"	Liquid	1	1	-	-	X	1	X	X	2	X	1	2	1	1	1	1	1	1	1	1
"Hydraulic Fluid (Water Glycol Base)"	Liquid	1	1	-	-	-	1	2	2	1	1	1	-	-	1	1	1	1	1	1	1
Hydraulic Fluid HF-18, HF-20	Liquid	1	1	-	-	1	1	-	-	-	1	1	-	-	1	2	1	1	1	1	1
Hydraulic Fluid HF-31	Liquid	1	1	-	-	X	-	-	-	-	X	-	-	-	1	-	1	1	1	1	1
Hydrazine Colorless Fuming	Liquid	1	1	-	-	2	X	X	X	X	2	X	X	-	-	X	-	-	-	-	-
Hydrazine Hydrate	Colorless Fuming Liquid	1	1	-	-	2	X	X	X	X	2	X	X	-	-	X	-	-	-	-	-
Hydrazine Solution	Liquid	1	1	-	-	2	X	X	X	X	2	X	X	-	-	X	-	-	-	-	-
Hydro-Drive Oil (Houghton)	Liquid	1	-	-	-	X	1	-	-	-	X	-	-	-	-	X	-	-	-	-	-
Hydrobromic Acid (62% and less)	Colorless to Yellow Liquid	1	1	1	1	X	X	2	2	X	2	1	2	1	X	X	-	-	-	X	-
Hydrobromic Acid (to 48%)	Colorless to Yellow Liquid	1	1	1	1	1	X	2	2	X	2	1	2	1	X	X	-	-	-	X	-
Hydrochloric Acid (15%)	Colorless to Yellow Liquid	1	1	1	1	2	X	2	2	X	2	1	2	1	X	X	X	X	X	X	X
Hydrochloric Acid (37%)	Colorless to Yellow Liquid	1	1	1	1	X	X	2	2	X	2	1	2	1	X	X	X	X	X	X	X
Hydrochloric Acid, anhydrous	Colorless Fuming Gas	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	X	X	X	X	X
Hydrocyanic Acid (10% Solution with water)	Water White Liquid	1	1	1	-	-	X	2	2	X	-	1	2	-	-	X	X	1	1	1	X
Hydrocyanic Acid (98% or less) below 77°F(25°C)	"Water White Liquid 1"	-	-	-	-	-	-	-	-	-	1	-	-	-	X	-	-	-	-	-	-
Hydrocyanic Acid (up to 20%)	Water White Liquid	1	1	-	-	1	2	2	2	2	-	1	1	-	-	2	-	-	-	-	-
Hydrofluoric Acid (38% or less)	Colorless Liquid	1	1	1	1	2	X	X	X	2	2	1	1	1	X	X	X	X	X	X	X
Hydrofluoric Acid (47% or less)	Colorless Liquid	1	1	1	1	2	X	X	X	2	2	1	2	1	X	X	X	X	X	X	X
Hydrofluoric Acid (53 % or less)	Colorless Liquid	1	1	X	1	-	X	X	X	2	X	1	2	1	X	X	X	X	X	X	X
Hydrofluoric Acid (70%)	Liquid	1	1	X	1	X	X	X	X	X	-	1	2	-	X	X	X	X	X	X	X
Hydrofluoric Acid (Concentrated)	Colorless Liquid	1	1	X	2	X	X	X	X	X	X	2	2	1	X	X	X	X	X	X	X
Hydrofluosilicic Acid	In Water	1	1	1	2	2	X	X	X	X	X	1	1	X	X	X	X	X	X	-	1
Hydrogen (Gas)	Gas	NO HOSE AVAILABLE													-	-	-	-	-		
Hydrogen Bromide Liquefied (Anhydrous)	Liquid	1	-	-	-	1	X	X	X	-	X	1	-	-	-	-	-	-	-	-	-
Hydrogen Bromide Solution (HydroBromic Acid)	Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydrogen Bromide, Anhydride	Colorless Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydrogen Chloride	Colorless Fuming Gas	1	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-
"Hydrogen Dioxide (Hydrogen Peroxide)"	Liquid	1	-	-	-	2	X	-	-	2	-	1	1	-	-	-	-	-	-	-	-
Hydrogen Fluoride	Colorless Gas or Liquid	1	-	-	-	1	X	X	X	-	2	X	-	-	-	-	1	1	1	-	-

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Hydrogen Peroxide (35% or less)	Liquid	1	1	1	X	1	2	X	X	1	X	1	1	1	1	X	2	1	1	X	
Hydrogen Peroxide (50% or less)	Liquid	1	2	1	X	1	2	X	X	1	X	1	1	1	2	2	X	2	1	1	X
Hydrogen Peroxide (70% or less)	Liquid	1	2	1	X	2	X	X	X	2	-	1	1	1	X	2	X	2	1	1	X
Hydrogen Peroxide (90% or less)	Liquid	1	-	1	-	2	X	X	X	2	-	1	1	-	X	X	X	2	1	1	X
Hydrogen Sulfide	Colorless Gas	NO	HOSE AVAILABLE																		
Hydrogen Sulfide, Liquefied 120°F (49°C)"	"Liquid @ 410 PSI, 1	-	-	-	1	X	X	-	2	X	X	-	-	-	-	-	-	-	-	-	-
Hydrolube (Water Glycol)	Liquid	1	-	1	-	1	1	-	-	2	2	1	-	-	-	1	-	-	-	-	-
Hydrolubric Oil (Houghton)	Liquid	1	1	-	-	X	2	-	-	-	X	-	-	-	1	2	-	-	-	-	-
Hydroquinone	White Crystals	1	1	-	-	X	-	X	X	X	X	2	X	-	-	-	1	1	-	-	-
Hydroquinone Solution	Liquid	1	-	-	-	-	X	X	-	X	X	1	-	-	-	2	-	1	1	-	-
Hydroxyacetic Acid	Colorless Crystals	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Hydroxyacetic Acid Solution	Liquid	1	1	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydroxyethyl Acrylate (HEA)	Liquid	1	1	1	1	X	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-
"Hydroxyethyl Acrylate Acid (HEA Acid)"	Liquid	1	1	1	1	X	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-
Hydroxyethyl Methacrylate	Clear Liquid	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
"Hydroxyethyl Methacrylate Solution in Xylene"	Clear Liquid	1	2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
"Hydroxypropyl Acrylate Acid (HPA Acid)"	Liquid	1	1	1	1	X	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-
Hylene (Toluene Diisocyanate)	Yellow Liquid	1	-	-	-	2	X	X	X	X	2	X	X	-	-	-	-	-	-	-	-
"Hypochlorous Acid (only in dilute solutions)"	"Greenish-Yellow Aqueous Sol."	1	1	1	1	2	X	X	X	X	X	1	2	-	-	-	-	-	-	-	-
Ink (Printers)	Liquid	1	1	-	-	X	2	X	X	-	X	X	-	-	1	-	2	2	1	-	2
Ink Oil	Liquid	1	2	-	-	-	2	-	-	-	-	-	-	-	-	-	1	1	1	-	1
Insulating Oil (Transformer)1	Liquid	1	1	-	-	X	1	X	X	2	X	1	X	-	-	-	1	1	1	-	1
Iodine	Grayish Black Granules	1	-	-	-	-	-	-	1	X	-	-	-	-	-	X	X	X	X	-	-
Iodine Solution	Liquid	1	1	1	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Iodine, In Alcohol	Liquid	1	1	1	1	1	-	X	X	2	-	1	-	1	-	1	-	-	-	-	-
Iron Acetate Liquor (Black Liquor)	Black Liquid	1	1	1	1	2	2	X	X	2	2	1	2	2	-	1	1	1	1	-	-
Iron Hydroxide	Brown precipitate	1	-	-	-	1	1	-	X	1	1	1	1	-	-	-	-	-	-	-	-
Iron Ore (Hematite)	Black to Brick Red	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Iron Oxide (Black, Brown, Red or Yellow)	Solid	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Iron Oxide Slurry	Slurry	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Iron Salts	-	1	-	-	-	1	1	-	1	1	1	1	1	-	1	1	-	-	-	-	-
"Iron Sulfate Solution (Ferric Sulfate)"	Liquid	1	1	1	-	2	2	2	-	2	2	1	2	1	-	1	X	1	1	X	X
"Iron Sulfide Solution (Ferrous Sulfide)"	Liquid	1	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Isoamyl Acetate	Colorless Liquid	1	-	-	-	2	X	-	X	X	X	X	X	-	-	-	-	-	-	-	-
Isoamyl Alcohol (Isobutyl Carbinol)	Colorless Liquid	1	-	-	-	2	2	-	2	2	2	2	2	-	-	-	-	-	-	-	-
Isoamyl Bromide	-	1	-	-	-	X	X	-	X	X	X	2	X	-	-	-	-	-	-	-	-
Isoamyl Butyrate	Water White Liquid	1	-	-	-	-	X	-	X	-	X	X	X	-	-	-	-	-	-	-	-
Isoamyl Chloride	Colorless to Yellow Liquid	1	2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Isoamyl Ether	Colorless Liquid	1	-	-	-	-	X	-	X	-	X	X	X	-	-	-	-	-	-	-	-

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Isoamyl Phthalate	Colorless Liquid	1	-	-	-	-	X	-	X	-	2	X	X	-	-	-	-	-	-	-	
Isobutane	Colorless Gas	USE LPG HOSE ONLY														-	-	-	-	-	
Isobutane Liquid	"Liquid @ 98 PSIG, 120°F (49°C)"	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
Isobutanol (Isobutyl Alcohol)	Colorless Liquid	1	1	1	1	1	2	2	2	2	2	1	1	1	1	2	1	1	1	1	2
Isobutene (Isobutylene)	Gas	1	-	-	-	X	1	X	X	-	-	2	X	-	-	-	-	-	-	-	
Isobutyl Acetate	Colorless Liquid	1	-	-	-	X	X	-	X	X	X	X	X	-	-	-	-	-	-	-	
Isobutyl Alcohol (Isobutanol)	Colorless Liquid	1	1	1	1	1	2	2	2	2	2	1	1	1	1	2	1	1	1	1	2
"Isobutyl Aldehyde (Isobutyraldehyde)"	Colorless Liquid	1	-	-	-	2	X	-	X	X	X	X	X	-	-	-	-	-	-	-	
"Isobutyl Carbinol (Primary Isoamyl Alcohol)"	Colorless Liquid	1	-	-	-	2	2	-	2	2	2	2	2	-	-	-	-	-	-	-	
Isobutylamine	Colorless Liquid	1	-	-	-	-	X	-	X	-	2	X	X	-	-	-	-	-	-	-	
Isobutylene (Isobutene)	Gas	1	-	-	-	X	1	X	X	-	-	2	X	-	-	-	-	-	-	-	
"Isobutylene Liquid (Isobutene Liquid)"	"Liquid @ 88 PSIG, 120°F (49°C)"	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
"Isobutyraldehyde (Isobutyl Aldehyde)"	Colorless Liquid	1	-	-	-	2	X	-	X	X	X	X	X	-	-	-	-	-	-	-	
"Isocyanate (Toluene Diisocyanate)"	"Water White to Yellow Liquid"	1	2	1	X	X	X	X	X	X	X	1	-	-	1	-	1	1	1	-	-
Isooctane	Colorless Liquid	1	2	-	X	X	1	X	X	1	X	1	1	2	1	X	1	1	1	2	1
Isooctyl Adipate	Viscous Liquid	1	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
Isooctyl Alcohol	Clear Liquid	1	1	1	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
Isooctyl Thioglycolate	Water White Liquid	1	1	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
Isopentane	Colorless Liquid	1	2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
Isophorone	Water White Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Isophthaloyl Chloride	Liquid above 106°F(41°C)	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
Isopropanol (Isopropyl Alcohol)	Colorless Liquid	1	1	1	1	1	1	2	2	2	1	1	2	1	1	2	1	1	1	1	2
Isopropanolamine (MIPA)	Liquid	1	2	-	-	-	2	-	2	-	1	X	X	-	-	-	-	-	-	-	
Isopropyl Acetate	Colorless Liquid	1	1	1	1	2	X	X	X	X	2	-	X	-	1	X	1	1	1	1	1
Isopropyl Alcohol (Isopropanol)	Colorless Liquid	1	1	1	1	1	1	2	2	2	1	1	2	1	1	2	1	1	1	1	2
Isopropyl Benzene (Cumene)	Colorless Liquid	1	2	-	X	-	-	-	-	-	-	1	-	2	-	-	-	-	-	-	-
Isopropyl Chloride	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Isopropyl Ether	Colorless Liquid	1	1	1	-	X	X	X	X	X	2	X	X	-	1	X	1	1	1	1	1
Isopropylamine	Colorless Liquid	1	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isopropylbenzene (Cumene)	Colorless Liquid	1	2	-	X	-	-	-	-	-	-	1	-	2	-	-	-	-	-	-	-
Isopropyltoluene (Cymene)	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	1	-	-	1	-	1	1	1	1	1
Jet Fuel A and A1 <sup>2</sup>	Liquid	1	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Jet Fuel JP1 <sup>2</sup>	Liquid	1	1	-	X	X	1	X	X	2	X	1	X	-	1	X	-	-	-	-	-
"Jet Fuel Jp10 (Tetrahydroxy- dicyclopentadiene) <sup>2h</sup> "	Liquid	1	-	-	X	X	X	X	X	X	X	1	X	-	1	X	-	-	-	-	-
Jet Fuel JP4 <sup>2</sup>	Liquid	1	1	-	X	X	1	X	X	2	X	1	X	-	1	X	2	1	1	2	1
Jet Fuel JP5 <sup>2</sup>	Liquid	1	1	-	X	X	1	X	X	X	X	1	X	-	1	X	2	1	1	2	1
Jet Fuel JP8 <sup>2</sup>	Liquid	1	1	-	X	X	1	X	X	X	X	1	X	-	1	X	2	1	1	2	1
Kaolin Clay	White to Yellowish Powder	1	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Karo Syrup	Yellow Liquid	-	-	-	1	-	-	-	-	-	-	-	-	-	1	1	-	1	1	-	-
Kerosene	Water White Oily Liquid	1	1	-	X	X	1	X	X	X	X	1	X	1	1	2	1	1	1	1	1
Ketchup	Red Liquid	-	-	-	1	-	1	-	-	1	-	-	-	-	1	-	-	1	1	-	-
Ketoglutaric Acid	In Water or Alcohol	1	1	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
"Ketones(ie Acetone, MEK, Cyclohexanone)"	Generally Liquids	1	1	1	1	2	X	X	X	X	2	X	X	-	1	X	1	1	1	1	1

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Koch Acid	White Solid	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Lacquer - Alcohol or Acetate as Solvent	Solution	1	1	1	1	2	-	-	-	-	X	-	-	-	-	X	X	1	1	1	
Lacquer - Toluene or Xylene as Solvent	Solution	1	-	-	-	-	X	X	X	X	X	1	X	-	1	X	X	X	1	1	1
Lactic Acid (90% or less)	Colorless - Yellow Liquid	1	1	1	1	2	X	2	2	1	-	1	1	-	-	X	X	2	1	X	2
Lactic Acid, Food Grade- 50-80%	Colorless to Yellow Liquid	1	1	1	1	2	-	X	X	-	X	1	1	-	-	-	X	2	1	X	2
Lactic Acid, Plastic Grade- 50-80% or less	Colorless to Yellow Liquid	1	1	1	1	2	1	-	-	1	-	1	1	-	X	1	X	2	1	X	2
Lactic Acid, USP 85-90% or less	Colorless to Yellow Syrupy Liquid	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	X	2	1	X	2
Lactol	-	1	1	-	-	-	2	-	-	2	-	-	-	-	-	-	1	1	1	-	1
Lard (Fat of the Hog) (42°C)	Liquid above 108°F	1	1	1	X	X	1	X	X	2	X	1	X	1	1	-	1	1	1	1	X
Lard Oil	Colorless to Yellow Liquid	1	1	-	-	-	-	-	-	2	-	X	-	-	-	-	1	1	1	1	X
Lasso (Alachlor)	Colorless Crystals	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	1	-	-
Latex Paint	Liquid	1	1	1	1	1	1	2	2	-	2	1	-	-	1	1	1	1	1	1	1
Lauryl Peroxide	White Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Lauryl Alcohol	Liquid above 75°F (24°C)	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Lead Acetate	White Crystals	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2.2	1	1	-	1
Lead Acetate Solution	Solution	1	1	1	1	1	2	2	2	-	2	1	-	1	-	1	2	1	1	-	1
Lead Arsenate	White Crystals	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	1	-	-
Lead Arsenate Solution (In Nitric Acid)	Solution	1	1	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-
Lead Nitrate Solution (In Water or Alcohol)	Solution	1	1	1	1	1	1	2	2	2	2	1	-	1	-	1	1	1	1	-	-
Lead Silicate (basic)	White Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Lead Sulphate (Basic, Blue Basic, Tribasic)	White to Blue Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	1	-	-
"Lead, Tetraethyl (Tetraethyl Lead)"	Colorless Oily Liquid	1	2	-	-	X	2	X	X	X	X	1	X	-	2	1	-	-	-	-	-
"Lead, Tetramethyl (Tetramethyl Lead)"	Colorless Liquid	1	-	-	-	X	2	X	X	X	X	1	X	-	-	-	-	-	-	-	-
Lecithin	Light Brown Viscous Liquid-Solid	1	1	-	-	-	X	-	-	2	-	-	-	-	-	-	-	1	1	-	-
Ligroin	Clear Liquid	1	2	-	-	X	1	X	X	X	X	1	X	-	1	X	2	1	1	-	-
Lime (Calcium Oxide)	White to Gray Lumpy Solid	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-
Lime Sulfur Solution	Solution	1	1	1	1	2	X	X	X	1	X	1	2	-	-	2	2	1	1	X	X
Lime, Chlorinated (Bleaching Solution)	Solution	1	1	1	1	2	2	2	2	X	2	1	X	-	-	2	X	2	1	-	-
Lime, Chlorinated (normal 35-37% Chlorine)	White Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-
Lime, Hydraulic (Calcined Limestone)	Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Lime, Slaked (Calcium Hydroxide)	White Crystalline Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Limestone	Powder or Lumps	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Limonene	Colorless Liquid	1	2	1	X	X	X	X	X	-	-	1	-	-	1	-	1	1	1	1	1
Lindane (Ag Spray)	-	1	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	-
Linoleic Acid	Colorless to Straw Colored Liquid	1	1	1	-	X	2	-	-	X	X	1	-	-	-	1	-	-	-	-	-
Linseed/Flax Seed	"Yellow Amber to Brown Liquid"	1	1	X	2	2	2	X	X	2	-	1	1	1	1	1	2	1	1	1	2

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings				
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum
Liquid Soap	Liquid	1	1	1	-	2	-	2	2	-	2	-	-	-	2	1	1	1	1	1
Lithium Chloride	White Crystals	-	-	X	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Lithium Chloride (35-40% Brine)	Solution	X	1	X	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
"Lubricating Oil Diester (Under 135°F/57°C)"	Liquid	1	1	-	-	X	2	X	X	-	X	1	-	-	X	1	1	1	1	1
"Lubricating Oil (SAE 10, 20, 30, 40, & 50)"	Liquid	1	-	-	-	-	2	-	-	2	-	-	-	1	-	1	1	1	1	1
Lubricating Oil (Under 120°F/49°C)	Liquid	1	1	-	-	X	1	X	X	2	X	1	2	1	1	2	1	1	1	1
Machine Oil (Under 135°F/57°C)	Liquid	1	1	-	-	X	1	X	X	1	X	1	2	-	1	2	1	1	1	1
Magnesite	White to Brown Crystalline Solid	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Magnesium Magnesium Acetate	Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Magnesium Acetate Solution	Colorless Crystalline Aggregate	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Magnesium Carbonate	In Water or Alcohol	1	1	1	1	1	1	1	1	-	1	1	1	1	1	1	1	1	1	1
Magnesium Carbonate	White Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	1	-
Magnesium Carbonate Solution (in Acid)	Liquid Solution	1	1	1	1	-	-	-	-	-	-	1	-	-	-	-	1	1	1	-
Magnesium Chloride	Colorless to White Crystals	1	-	1	-	-	-	-	1	-	-	-	-	-	-	X	2	1	X	2
Magnesium Chloride Brine	Solution	1	1	1	1	1	1	-	1	-	-	1	-	-	-	-	-	-	-	-
Magnesium Chloride, Hydrated (in H <sub>2</sub> O or Alcohol)	Solution	1	1	1	1	1	-	-	1	-	-	1	-	-	-	-	-	-	-	-
Magnesium Hydroxide	White Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	1	X
Magnesium Hydroxide Solution (in Dilute Acid)	Liquid Solution	1	1	1	-	-	-	-	-	-	-	1	-	-	-	-	1	1	1	X
Magnesium Nitrate	White Crystals	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	1	X
Magnesium Nitrate Solution (in H <sub>2</sub> O or Alcohol)	Liquid Solution	1	1	1	1	1	1	-	-	-	-	1	-	-	-	-	1	1	1	X
Magnesium Oxide, Dry	White Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Magnesium Oxide, Slurry	-	1	1	-	-	1	2	-	2	1	-	1	-	-	-	-	-	-	-	-
Magnesium Sulfate Solution	Liquid Solution	1	1	1	1	1	1	1	1	2	1	1	1	1	-	1	2	1	1	-
Malathion (Ag Spray Dilute)	Clear to Amber Liquid	1	1	1	-	2	-	X	X	-	1	1	-	-	1	1	1	1	-	
Malathion (Ag Spray)	Clear to Amber Liquid	1	1	-	-	2	-	-	-	-	1	-	-	-	1	1	1	1	-	
Maleic Acid	Liquid	NO HOSE AVAILABLE														2	2	1	-	-
Maleic Acid Solution	Solution	1	1	1	1	1	2	2	2	X	-	1	-	-	-	X	2	2	1	-
Maleic Anhydride	Colorless Needles	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maleic Anhydride (Heated Liquid)	Liquid above 124°F(53°C)	1	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malic Acid (dl form)	Colorless Crystals	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Malic Acid Solution (in H <sub>2</sub> O or Alcohol)	Solution	1	1	1	1	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Malt Extract (Maltine)	Light Brown Viscous Liquid	1	1	1	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Malt, Dry	Yellow to Amber Grain	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Maltine (Malt Extract)	Light Brown Viscous Liquid	1	1	1	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Manganese Salts	-	1	1	-	-	-	1	X	X	-	-	1	1	-	-	1	-	-	-	-
Manganese Sulfate (Manganous Sulfate)	Pale Red Solid	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Manganese Sulfate Solution	Solution in Water	1	1	-	-	-	1	2	2	-	-	1	1	1	-	1	-	-	-	-
Manganese Sulfide (Manganous Sulfide)	Green Crystals	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Manganese Sulfite (Manganous Sulfite)	Black to Brownish Red Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings				
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum
MAPP Gas (Methylacetylene Propadiene)	Liquid	USE LPG HOSE ONLY														-	-	-	-	-
Maxmul (Penzoil Hydraulic Fluid)	Liquid	1	-	-	-	-	1	-	-	2	-	-	-	-	-	1	1	1	1	1
Mayonnaise	Semi-Liquid	1	1	-	2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
MBK (Methyl Butyl Ketone)	Colorless Liquid	1	1	-	-	2	X	X	X	X	2	X	X	2	-	X	1	1	1	1
MEK (Methyl Ethyl Ketone)	Colorless Liquid	1	2	1	1	2	X	X	X	X	2	X	X	2	1	X	1	1	1	1
Mercuric Chloride	White Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	X	1	1	X	X
Mercuric Chloride Solution (in H <sub>2</sub> O or Alcohol)	Solution	1	1	-	-	2	2	2	1	1	2	-	1	1	-	2	X	1	1	X
Mercuric Cyanide	Colorless Transparent Prisms	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	X	-
Mercuric Cyanide Solution (in H <sub>2</sub> O or Alcohol)	Solution	1	1	-	-	2	2	2	2	1	2	-	1	-	-	-	-	-	X	-
Mercurous Nitrate Solution	Solution	1	1	1	-	2	-	-	-	-	-	1	-	-	-	1	1	1	X	-
Mercury	Silver Liquid	1	1	1	-	-	2	2	2	1	2	-	1	1	-	1	1	1	X	X
Mercury Vapor	Gas	NO HOSE AVAILABLE														1	1	1	-	-
Mesityl Oxide (Methyl Isobutenyl Ketone)	Colorless Oily Liquid	1	1	1	-	2	X	X	X	X	2	X	X	2	-	X	1	1	1	1
Mesitylene (Trimethylbenzene)	Liquid	1	-	-	X	X	X	X	X	X	1	-	-	1	X	-	-	-	-	-
Metallic Soaps (Aluminium, Calcium, Zinc)	Solids @ Room Temperature	1	1	1	-	X	1	X	X	-	X	1	2	1	-	-	1	1	1	1
Methallyl Alcohol (Methylallyl Alcohol)	Colorless Liquid	1	-	-	-	-	1	-	2	-	2	2	-	-	-	-	-	-	-	-
Methane	Gas	1	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-
Methanol (Methyl Alcohol)	Colorless Liquid	1	1	1	1	1	1	1	1	1	1	X	1	1	1	2	1	1	1	2
Methionine	White Crystalline Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Methoxychlor Solution (in Alcohol)	Solution	1	1	-	-	-	-	-	-	-	-	-	-	1	-	1	1	1	-	-
Methyammine (Monomethylamine)	Liquid	1	-	-	-	-	-	-	-	-	-	-	-	1	X	1	1	1	-	-
Methyl Acetate	Colorless Liquid	1	2	-	-	2	X	X	X	X	2	X	X	1	1	X	1	1	1	1
Methyl Acetoacetate	Colorless Liquid	1	-	-	-	2	X	-	X	X	2	X	X	-	-	-	-	-	-	-
Methyl Acetone	Water White Liquid	1	-	-	-	1	X	-	X	-	2	X	X	-	-	1	-	-	-	-
Methyl Acrylate (Inhibited)	Colorless Liquid	1	2	-	2	2	X	X	X	X	X	X	X	-	-	-	1	1	1	1
Methyl Acrylate Acid (Methylacrylic Acid)	White Solid	1	1	1	1	2	2	X	X	-	1	1	-	1	X	-	-	-	-	-
Methyl Alcohol (100%) (Methanol)	Colorless Liquid	1	1	1	1	1	1	1	1	1	1	X	1	1	1	2	1	1	1	2
Methyl Bromide	Liquid @55 PSIG @120°F (49°C)	1	1	1	-	X	X	X	X	X	X	1	X	-	1	X	1	1	1	-
Methyl Bromoacetate	Colorless to Straw Colored Liquid	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl Butanathiol (Butyl Mercaptan)	Liquid	1	1	-	X	X	-	X	X	-	X	1	-	-	-	X	-	1	1	-
Methyl Butanol (2-Methyl-1-Butanol)	Colorless Liquid	1	1	1	1	1	1	-	-	-	1	1	-	1	1	1	-	-	-	-
Methyl Butyl Ketone (MBK)	Colorless Liquid	1	1	-	-	2	X	X	X	X	2	X	X	2	-	X	1	1	1	1
Methyl Carbitol (Diethylene Glycol Methyl Ether)	Colorless Liquid	1	1	-	1	1	-	X	X	-	X	1	X	1	-	-	-	-	-	-
Methyl Cellosolve (Diethylene Glycol Methyl Ether)	Colorless Liquid	1	1	-	1	1	-	X	X	-	X	1	X	1	-	-	-	-	-	-
Methyl Chloride	Liquid @ 160 PSIG @ 120°F (49°C)	1	2	-	X	X	X	X	X	X	X	1	X	X	-	X	1	1	1	-
Methyl Chloroform (1,1,1 Trichloroethane)	Colorless Liquid	1	2	-	X	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-



Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings				
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum
Methyl Chloroformate	Colorless Liquid	1	-	-	-	X	X	X	X	X	X	1	X	-	-	-	-	-	-	-
Methyl Cyanide (Acetonitrile)	Colorless Liquid	1	1	2	1	2	X	2	2	X	X	X	X	1	-	1	1	1	1	-
Methyl Cyclohexane	Colorless Liquid	1	-	-	X	X	1	X	X	-	X	1	X	2	1	-	-	-	-	-
Methyl Ethyl Ketone (MEK)	Colorless Liquid	1	2	1	1	2	X	X	X	X	2	X	X	2	1	X	1	1	1	1
Methyl Formate	Colorless Liquid	1	1	-	-	2	X	X	X	2	2	X	X	-	-	-	1	1	1	1
Methyl Hexanol	-	1	-	-	-	-	1	-	1	-	1	2	1	-	-	-	-	-	-	-
Methyl Hexanone (Methyl Isoamyl Ketone)	Colorless Liquid	1	-	-	-	-	X	-	X	-	2	X	X	-	-	-	-	-	-	-
Methyl Hexyl Ketone	Colorless Liquid	1	-	-	-	-	X	-	X	-	2	X	X	-	-	-	-	-	-	-
Methyl Isoamyl Ketone (Methyl Hexanone)	Colorless Liquid	1	-	-	-	-	X	-	X	-	2	X	X	-	-	-	-	-	-	-
Methyl Isobutenyl Ketone (Mesityl Oxide)	Colorless Oily Liquid	1	1	1	-	2	X	X	X	X	2	X	X	2	-	X	1	1	1	1
Methyl Isobutyl Ketone (MIBK)	Colorless Liquid	1	2	-	-	-	X	X	X	X	2	X	X	2	1	X	-	-	-	-
Methyl Isopropyl Ketone	Colorless Liquid	1	2	-	-	2	X	X	X	X	2	X	X	2	1	X	1	1	1	1
Methyl Methacrylate	Colorless Liquid	1	2	-	2	2	X	X	X	X	X	X	2	2	-	1	1	1	1	-
Methyl Methacrylate Monomer, Inhibited	Colorless Liquid	1	-	-	-	X	X	X	X	X	X	X	X	-	X	X	-	-	-	-
Methyl Phenol (Cresol)	Liquid above 95°F (35°C)	1	2	-	-	-	X	X	X	X	2	1	X	1	X	-	2	1	1	-
Methyl Propyl Carbinol (2 Pentanol)	Colorless Liquid	1	1	1	1	1	-	-	-	-	1	1	-	1	-	-	-	-	-	-
Methyl Propyl Ether	Colorless Liquid	1	-	-	-	-	X	-	X	-	X	-	2	-	-	-	-	-	-	-
Methyl Propyl Ketone (Pentanone)	Water White Liquid	1	-	-	-	2	X	-	X	X	2	X	X	-	-	X	-	-	-	-
Methyl Salicylate	Yellow to Red Liquid	1	1	-	-	2	2	-	-	2	2	-	-	-	-	1	1	1	1	1
Methyl Stearate	Liquid above 99°F (38°C)	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl Sulfate (Dimethyl Sulfate)	Colorless Liquid	1	1	-	-	X	X	X	X	X	2	X	X	-	1	1	-	-	-	-
Methyl-2-Pyrrolidone	Colorless Liquid	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl-n-Amyl Carbinol	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Methyl-n-Amylketone	Water White Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylacetylene Propadiene (MAPP Gas)	Liquid @ 107 PSIG @ 20°C	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Methylacrylic Acid (Crotonic Acid)	White Crystalline Solid	1	1	1	1	2	2	X	X	-	1	1	-	1	X	-	-	-	-	-
Methylal	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Methylallyl Alcohol (Methallyl Alcohol)	Colorless Liquid	1	-	-	-	-	1	-	2	-	2	2	2	-	-	-	-	-	-	-
Methylallyl Chloride	Colorless to Straw Colored Liquid	1	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Methylamine (30-40% in H <sub>2</sub> O)	Colorless Liquid	1	1	-	-	2	X	-	-	-	-	-	-	-	-	X	-	-	-	-
Methylamine (Anhydrous)	Liquid @ 120 PSIG @ 49°C	1	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
Methylamyl Acetate	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylamyl Alcohol	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Methylaniline	Colorless to Brown Liquid	1	1	1	1	2	X	-	-	X	-	1	2	-	X	X	-	-	-	-
Methyldiethanolamine	Colorless Liquid	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene Bromide	Clear Liquid	1	-	-	-	-	2	-	-	-	-	1	-	-	-	X	-	-	-	-
Methylene Chloride (Dichloromethane)	Colorless Liquid	1	1	2	X	X	X	X	X	X	X	2	X	X	X	X	1	1	1	1
Methylene Dichloride	Colorless Liquid	1	1	-	X	X	X	X	X	X	X	1	X	X	X	X	1	1	1	X
Methylene Dichloride (Methylene Chloride)	Colorless Liquid	1	1	2	X	X	X	X	X	X	X	1	X	X	X	X	1	1	1	X
Methylene Diphenyl Diisocyanate, MDI	Liquid above 99°F (37°C)	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylstyrene	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
MIBK (Methyl Isobutyl Ketone)	Colorless Liquid	1	2	-	-	-	X	X	X	X	2	X	X	2	1	X	-	-	-	-
Milk	White Liquid	USE FDA HOSE ONLY														-	-	-	-	-

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Mineral Oil	Colorless Liquid	1	1	1	X	X	1	X	X	1	X	1	1	1	1	1	1	1	1	2	1
Mineral Spirits (VM&P Naphtha)	Colorless Liquid	1	1	-	X	X	1	X	X	-	X	1	X	-	1	-	1	1	1	2	1
MIPA (Isopropanolamine)	Liquid	1	-	-	-	-	2	-	2	-	1	X	X	-	-	-	-	-	-	-	-
Mobile Therm 603	Liquid	1	1	-	-	-	1	-	-	-	-	1	-	-	-	-	1	1	1	1	1
Molasses	Brown Liquid	1	1	-	1	1	2	2	2	2	1	1	1	-	-	2	2	1	1	2	X
Monochloroacetic Acid	"Colorless to Light Brown Crystals"	1	1	X	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
Monochloroacetic Acid Solution (in H2O or Alcohol)	Liquid Solution	1	1	X	1	2	-	-	-	-	-	-	-	X	-	X	X	X	-	2	
Monochlorobenzene	Clear Liquid	1	2	-	X	X	X	X	X	X	1	X	X	X	X	1	1	1	-	1	
Monoethanolamine	Colorless Liquid	1	2	1	1	2	2	2	2	2	X	X	1	1	2	1	1	1	-	1	
Monoethylamine	Liquid @ 15 PSIG @ 49°C	1	2	-	1	1	X	X	X	X	2	X	X	1	-	-	1	1	-	1	
Monoethylamine Solution (70% or less)	Liquid Solution	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Monoglycerides	Liquid to Solid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Monomethylamine (Methyamine)	Liquid @ 120 PSIG @ 49°C	1	-	-	-	-	-	-	-	-	-	-	-	-	X	1	1	1	-	-	
Monopentaerythritol (Pentaerythritol)	White Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	
Monopentaerythritol Solution	Liquid Solution	1	1	1	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
Monosodium Phosphate (Monobasic)	White Powder	1	1	-	-	2	-	2	2	X	2	-	-	1	1	1	-	1	1	X	X
Morpholine	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mortar, Inorganic	Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	
Motor Oil	Liquid	1	1	-	X	X	1	X	X	2	X	1	2	1	1	2	1	1	1	1	
Mould Oil	Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	
Mouth Wash	Liquid	1	-	1	1	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	
MTBE (Methyl Tertiary Butyl Ether)	Colorless Liquid	-	2	-	2	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	
Muriatic Acid (Hydrochloric)	Colorless to Yellow Liquid	1	1	1	1	X	X	2	2	X	2	1	2	1	X	X	X	X	X	X	
Mustard	Liquid	1	-	-	2	-	-	1	1	1	1	-	1	-	-	X	1	1	-	-	
n-Hexaldehyde	Colorless Liquid	1	1	-	-	2	X	X	X	2	1	-	-	-	-	-	-	-	-	-	
n-Methyl-2-Pyrrolidone	Colorless Liquid	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
n-Octane Colorless Naphtha (Low Aromatic Content)	Liquid	1	2	1	X	X	1	X	X	-	X	1	X	1	1	X	-	-	-	-	
Naphthalene	Liquid	1	1	-	X	X	2	X	X	X	1	X	1	-	X	2	1	1	-	1	
Naphthalene	White Crystalline Flakes	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	1	1	1	1	
Naphthenic Acid	Commercial Grade.	1	1	-	2	-	2	-	-	-	-	1	-	-	-	1	-	-	-	-	
Neohexane	Colorless Liquid	1	-	-	-	X	1	-	-	2	-	1	-	-	1	-	-	-	-	-	
Neutral Oil	Liquid	1	1	-	X	2	X	X	2	X	1	-	-	1	-	1	1	1	-	1	
Nickel Acetate	Green Crystals	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	1	1	1	1	
"Nickel Acetate Solution (In Water or Alcohol)"	Solution	1	1	1	1	2	-	2	2	-	1	-	-	-	-	1	1	1	1	1	
Nickel Carbonate	Green to Brown Crystals/Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	
Nickel Chloride	Brown Deliquescent Scales	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	X	2	2	X	
Nickel Chloride Solution (In Water or Alcohol)	Solution	1	1	-	-	2	2	2	2	2	2	1	2	1	-	1	X	2	2	X	
Nickel Nitrate	Green Deliquescent Crystals	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2	X	-	
Nickel Nitrate Solution (In Water or Alcohol)	Solution	1	1	-	-	2	2	2	2	2	2	1	2	1	-	2	-	-	2	X	
Nickel Plating Solution	Liquid	1	1	-	-	-	2	2	2	-	-	-	2	-	-	X	-	1	1	-	
Nickel Salts	-	1	1	-	-	1	1	1	1	1	1	1	1	-	1	2	-	-	-	-	

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Nickel Sulfate Nickel Sulfate Solution	Yellow Green to Blue Crystals Solution	- 1	- 1	- -	- -	- 2	- 2	- 2	1 2	- 2	- 2	- 1	- 2	- 1	- -	- 1	- 2	1 1	X 1	X 1	X X
Nicotine Salts (ie Nicotine Hydrochloride) Niter Cake (Sodium Bisulfate)	Colorless Oil Colorless Crystals to White Lumps	1 1	1 1	- -	- -	- 1	- 1	- 1	- 1	- 1	- 1	- 1	- 1	- 1	- 1	1 1	1 X	X 1	2 1	- X	- X
Niter Cake Solution Nitric Acid (25% or less) Nitric Acid (10%)	Solution Colorless Liquid Transparent or Yellowish Liquid	1 1 1	1 1 1	1 1 1	1 2 1	2 2 X	- X X	X X X	X X X	- X X	2 2 2	1 1 1	1 2 2	1 1 1	- X X	- X X	- X X	- X X	- 2 2	- 2 2	- - X
Nitric Acid (25%)  Nitric Acid (35% or less, 26 Degrees Baume) Nitric Acid (52% or less, 36 Degrees Baume) Nitric Acid (61% or less, 40 Degrees Baume) Nitric Acid (63.5% or less)	Transparent or Yellowish Liquid  Colorless Liquid  Colorless to Yellow Liquid  Colorless to Yellow Liquid Transparent or Yellowish Liquid	1  1 1 1 1	1  1 2 2 X	1  1 2 2 X	2 2 X X X	X X X X X	X X X X X	X X X X X	X X X X X	2 2 X X X	1 1 1 1 1	2 1 2 2 X	1 X X X X	X X X X X	X X X X X	X X X X X	X X X X X	2 2 2 2 2	2 2 2 2 2	- - - - -	X X X X X
Nitric Acid (67% or less, 42 Degrees Baume) Nitric Acid (95% or less, 48.5 Degrees Baume) Nitric Acid (Red Fuming) Nitrobenzene Nitroethane	Colorless to Yellow Liquid  Yellow Liquid Red Liquid Yellow Liquid @ 43°F (6°C) Colorless Liquid	1 1 1 1 1	X X X 2 1	X X X 1 -	X X X 2 2	X X X X X	X X X X X	X X X X X	X X X X X	X X X X X	1 1 1 2 -	X X X X 2	X X X X X	X X X X -	X X X X -	X X X X -	X X X X -	2 2 - - 1	2 2 - - 1	- - - - -	X X - - 1
Nitrogen (Cryogenic Liquid) Nitrogen (Gas) Nitrogen Dioxide (Nitrogen Tetraoxide)  Nitrogen Fertilizer (Ammonia, Urea) Nitrogen Oxide (Nitrous Oxide)	Liquid Colorless Gas  Liquid @50 PSIG @120°F (49°C)  Solutions in Water  Gas	NO 1 1 1 1	HOSE 1 1 1 1	AVAILA 1 1 1 1	BLE 1 1 1 2											1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	
Nitrogen Tetraoxide (Nitrogen Dioxide)  Nitromethane Nitropropane Nitrosyl Chloride Nitrous Acid (Up to 10%)	Liquid @ 50 PSIG @120°F (49°C) Colorless Liquid Colorless Liquid Yellow-Red Liquid or Gas Light Blue Liquid	1 1 1 1 1	- - 1 1 1	- - - - -	- 2 2 - -	- X X - -	- - X - -	- 2 X - -	- X X - -	- 2 X - -	1 X X -	- X X -	- - - -	- 1 1 -	- X X 1	- - - X	- - - X	- 1 1 1	- 1 1 1	- - - X	- 1 1 X
Nitrous Oxide (Nitrogen Oxide) Nitrous Oxide, Compressed Liquid  Nonene (1-nonylene) Nonyl Alcohol (Octyl Carbinol) Nonylene (Nonene)	Gas  Liquid @ 800 PSIG @68°F (20°C) Colorless Liquid  Colorless Liquid Colorless Liquid	1 1 1 1	1 - - 1	- - - 1	1 - - 1	2 - - 1	X - - -	X - - -	X - - -	X - - -	1 - - 1	1 - - 1	1 - - -	1 - - -	X - - -	X - - -	1 - - -	1 - - -	1 - - -	X - - -	- - - -
Octadecanoic Acid (Stearic Acid) Octanoic Acid (Caprylic Acid)	Colorless Waxy Solid Colorless Oily Liquid	1 1	1 -	1 -	1 -	2 -	2 -	2 -	2 -	2 -	2 -	1 -	2 1	1 -	1 -	1 -	X -	2 -	1 -	X -	X -

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Octanol (Octyl Alcohol)	Colorless Liquid	1	1	-	-	-	2	2	2	2	-	1	-	1	1	2	1	1	1	1	2
Octene	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Octyl Acetate	Colorless Liquid	1	-	-	-	-	X	-	X	-	X	1	-	-	-	-	-	-	-	-	-
Octyl Alcohol (Octanol)	Colorless Liquid	1	1	-	-	-	2	2	2	2	-	1	-	1	1	2	1	1	1	1	2
Octyl Aldehyde	Colorless Liquid	1	-	-	-	-	X	-	X	-	X	X	-	-	-	-	-	-	-	-	-
Octyl Carbinol (Nonyl Alcohol)	Colorless Liquid	1	1	1	1	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Octyl Phenol (Diisobutyl Phenol)	White Flakes	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Octylamine	Water White Liquid	1	-	-	-	-	X	-	X	-	2	X	X	-	-	-	-	-	-	-	-
Oil (SAE Motor Oils)	Liquid	1	1	-	X	X	1	X	X	2	X	1	2	1	1	2	-	-	-	-	-
Oil of Turpentine	Liquid	1	2	2	-	X	1	X	X	2	X	1	X	-	1	1	-	-	-	-	-
Oils, Animal (High Fatty Acid Content)	Solid to Liquids	1	2	-	2	X	1	X	X	2	2	1	X	1	-	2	1	1	1	1	1
Oils, Mineral (Aliphatic or Aromatic) Liquid	1	2	-	X	X	2	X	X	X	X	1	2	2	1	X	-	-	-	-	-	-
Oils, Vegetable (Soybean, Coconut, Corn)	Liquid	1	1	-	X	X	1	X	X	-	X	1	X	-	1	-	-	-	-	-	-
Oleic Acid (fatty acid)	Yellow to Red Oily Liquid	1	2	2	2	2	2	X	X	2	2	2	X	2	-	2	2	2	1	1	2
Oleum (Fuming Sulfuric, 30% SO3 or less)	Clear to Off White																				
Fuming Liquid"	1	X	X	X	X	X	X	X	X	X	1	X	X	X	X	-	-	1	-	-	-
Olive Oil	Yellow to Green Liquid	1	1	1	2	2	2	X	X	X	2	1	X	2	1	2	2	1	1	1	2
Ortho-Dichlorobenzene (also meta and para)	Colorless Liquid	1	2	-	X	X	X	X	X	X	X	1	X	X	1	X	-	1	1	-	-
Ortho-xylene (1,2 Dimethylbenzene)	Clear Colorless Liquid	1	X	X	X	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-	-
OS 45 Hydraulic Fluid (Silicate Ester Base)	Liquid	1	-	-	-	X	2	X	X	1	X	1	2	-	-	-	-	-	-	-	-
Oxalic Acid	Transparent Crystals	1	-	2	-	-	-	-	1	-	-	-	-	-	-	-	X	2	1	2	X
Oxalic Acid (50%)	Crystals in H2O	1	2	1	2	2	X	X	X	X	2	1	2	1	X	X	-	-	-	-	-
Oxygen	Colorless Gas	1	1	-	1	1	2	2	2	-	1	1	1	1	-	-	-	-	-	-	-
Oxygen, Refrigerated Liquid @ -231°F (-146°C)"	Liquid @ 200 PSIG NO HOSE AVAILABLE																				
Ozone	Gas	1	2	2	1	1	X	X	X	2	2	2	2	1	2	1	1	1	1	1	1
Paint (Emulsion or Latex)	Liquid	1	1	1	1	2	2	-	-	-	-	1	-	-	1	1	-	-	-	-	-
Paint (Inorganic)	Liquid	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1
Paint (Oil or Solvent Based)	Liquid or Paste	1	1	-	X	X	2	X	X	-	X	1	X	-	1	-	-	-	-	-	-
Paint Remover	Liquid or Paste	1	2	-	X	X	X	X	X	X	X	1	X	-	X	-	-	-	-	-	-
Paint Resin	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Palm Oil	Yellow to Brown Solid	1	1	-	-	-	1	X	X	2	2	-	2	-	-	-	1	1	1	1	1
Palmitic Acid (Hexadecanoic Acid)	Crystals in Hot Alcohols	1	1	1	2	2	2	X	X	2	2	1	X	1	-	-	1	2	1	1	X
"Papermakers Alum (Aluminum Ammonium Sulfate)	In Water	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paraffin (Aliphatic Hydrocarbon)	Varies from Gas to Waxy Solid	1	1	1	X	X	1	X	X	2	X	1	X	1	-	-	2	1	1	1	1
Paraformaldehyde	White Solid- Flakes or Powder	1	-	-	-	-	2	-	1	2	-	-	-	-	-	1	-	1	1	1	-
Paraldehyde	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paranox (Detergent, Disperser; Exxon)	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parapol (Liquid Polyisobutylene; Exxon)	Liquid	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Peanut Oil	Yellow to Green Liquid	1	1	-	2	-	1	-	-	2	X	-	-	-	-	2	1	1	1	1	1
Pelargonic Acid	Colorless to Yellow Oil	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Pentachloroethane	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol In Oil	In Oil (Wood Preservative)	1	1	1	X	X	X	X	X	X	1	1	-	-	-	X	-	-	-	-	-
Pentaerythritol (Monopentaerythritol)	White Powder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Pentane	Colorless Liquid	1	X	X	X	X	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-
Pentanol (Methyl Propyl Carbinol)	Colorless Liquid	1	1	1	1	1	-	-	-	-	1	1	-	1	-	-	-	-	-	-	-
Pentanone (Methyl Propyl Ketone)	Water White Liquid	1	-	-	-	2	X	-	X	X	2	X	X	-	-	X	-	-	-	-	-
Pentanol (Amyl alcohols, primary and secondary)"	Liquid	1	2	2	2	2	2	2	2	2	2	1	2	1	1	2	1	1	1	1	1
Perchloric Acid (70%)	70% or Less with H2O	1	2	1	2	-	-	2	2	2	2	1	2	-	X	X	-	2	1	-	-
Perchloroethylene	Colorless Liquid	1	2	1	X	X	X	X	X	X	X	1	X	2	2	X	1	1	1	-	X
Petroleum Coke	Solid Pellets	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Petroleum Distillate	Liquid	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Petroleum Ether (Naptha)	Liquid	1	1	-	X	X	2	X	X	X	X	1	X	1	-	X	2	1	1	-	1
Petroleum Naphtha (Toluene/Cyclohexane/Xylene)	Liquid	1	X	X	X	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-	-
Petroleum Naphtha Flash Point Over 200 Degrees	Liquid	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Petroleum Oils (Refined)	Liquid	1	1	1	X	X	1	X	X	2	X	1	2	-	1	1	-	-	-	-	-
Petroleum Oils (Sour)	Liquid	1	1	1	X	X	1	X	X	2	X	1	X	-	-	2	-	-	-	-	-
Petroleum Paraffin Wax	Solid with low Melt Points	1	2	2	X	X	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Phenol (Carbolic Acid)	White or Pink Crystals	1	2	-	2	2	X	X	X	X	2	1	X	1	X	X	X	1	1	2	X
Phenol Acid	95% or less with H2O	1	2	2	2	2	X	X	X	X	2	1	X	1	X	X	X	1	1	-	X
Phenolates	-	1	-	-	-	-	X	-	-	X	-	2	X	-	2	-	-	-	-	-	-
Phenolsulfonic Acid	Yellow to Brown Liquid	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Phenothiazine	Greenish Powder or Flakes	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Phenyl Acetate	Water White Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenyl Chloride (Chlorobenzene)	Clear Volatile Liquid	1	2	-	X	X	X	X	X	X	X	1	X	X	X	X	1	1	1	1	1
Phenylenediamine (ortho)	Colorless to Red Solid Needles	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Phorone (Diisopropylidene Acetone)	Yellow Liquid	1	1	-	-	2	X	X	X	X	2	X	X	-	-	-	1	1	1	-	1
Phosgene (Carbonyl Chloride) @ 120°F (49°C)"	Gas, Liquid 60 PSI	X	X	X	X	X	X	X	X	2	1	X	-	2	-	-	-	-	-	-	-
Phosphate Ester Hydraulic Fluid	Liquid	1	1	1	-	1	X	X	X	X	2	-	X	-	2	-	-	-	-	-	-
Phosphate Rock	Solid	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Phosphate, Trisodium	In Water	1	1	1	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Phosphoric Acid (100%)	Crystals	1	2	2	2	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Phosphoric Acid (35% or less)	Colorless Liquid	1	1	1	1	1	2	2	2	2	2	1	1	1	-	X	1	1	X	2	2
Phosphoric Acid (50%)	Colorless Liquid	1	1	1	1	1	2	2	2	2	2	1	1	1	X	X	X	1	1	X	2
Phosphoric Acid (75%)	Colorless Liquid	1	2	1	2	2	-	-	-	-	-	1	1	1	X	X	X	2	2	X	X
Phosphoric Acid (85%)	Syrupy Liquid	1	2	1	2	2	X	X	X	X	X	1	1	1	X	X	X	2	2	X	X
Phosphoric Acid (90%)	Syrupy Liquid	1	2	1	2	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Phosphoric Acid, Spent	Liquid	1	1	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Photographic, Developers	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Photographic, Emulsions	Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Photographic, Fixing Solutions	Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Phthalic Acid	Colorless Crystals	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Phthalic Acid (50%)	Colorless Liquid	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phthalic Anhydride, Molten	White Crystalline Solid	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Picric Acid (Solution)	In Water	1	2	2	2	2	-	-	-	-	-	1	-	-	-	X	1	1	X	X	
Picric Acid (Trinitrophenol)	Yellow Crystals	1	2	2	2	2	2	2	2	2	2	1	2	-	X	1	X	1	1	X	X
Pine Oil	Colorless to Amber Liquid	1	1	-	-	X	2	X	X	-	X	2	X	2	-	-	-	-	-	-	-
Pine Tar	Viscous Brown to Black Liquid	1	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Pinene	Colorless Transparent Liquid	1	1	-	X	X	2	X	X	X	X	1	-	2	1	X	1	1	1	-	-
Potassium Dichromate	White Crystalline Powder	1	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-	-	-	-	-
Potassium Ferrocyanide	Yellow Crystal or Powder	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Potassium Fluoride	White Crystalline Powder	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Potassium Hydrate	White Solid	1	-	-	-	2	2	2	2	2	1	X	1	-	2	2	-	-	-	-	-
"Potassium Hydroxide (45% Caustic Potash)"	Colorless to Cloudy Liquid	1	1	1	1	2	2	2	2	2	1	2	-	X	2	2	-	-	-	-	-
Potassium Hydroxide, Liquid >50%	Colorless to Cloudy Liquid	1	1	-	-	1	2	2	2	2	1	X	2	X	X	2	-	-	-	-	-
Potassium Iodide	White Solid	1	-	-	-	1	1	-	-	1	-	1	1	-	-	1	-	-	-	-	-
Potassium Nitrate	Colorless to white Solid	1	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-
Potassium Permanganate	Dark purple Crystal	1	1	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-	-
Potassium Persulfate	White Crystal	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Potassium Phosphate	Colorless to white Crystal	1	-	-	-	1	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-
Potassium Silicate, Other Than Dry	-	1	1	-	-	1	1	2	-	1	-	1	-	-	-	-	-	-	-	-	-
Potassium Sulfate	White Crystal or Powder	1	-	-	1	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-
Potassium Sulfide	Red or yellow Crystal or Solid	1	1	-	-	1	1	-	-	1	1	1	2	-	-	-	-	-	-	-	-
Potassium Sulfite	White Crystal or Powder	1	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-	-	-	-	-
Potassium Thiosulfate	Colorless crystal	1	-	-	-	1	-	-	-	1	-	1	1	-	-	1	-	-	-	-	-
Primatol A, S, P (Ag Spray)	Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Propane Gas	Colorless Gas	NO HOSE AVAILABLE														-	-	-	-	-	-
Propanediol	Colorless Liquid	1	1	-	-	1	1	-	-	X	1	1	2	-	-	-	-	-	-	-	-
Propanol (Propyl Alcohol)	Colorless Liquid	1	1	1	1	1	-	-	-	-	1	1	-	1	1	2	-	-	-	-	-
Propionic Acid	Colorless Oily Liquid	1	1	1	1	2	X	2	2	X	2	1	2	-	-	-	1	1	-	-	-
Propyl Acetate	Colorless Liquid	1	1	1	1	-	-	-	-	-	-	X	-	2	-	-	-	-	-	-	-
Propyl Alcohol (Propanol)	Colorless Liquid	1	1	1	1	1	-	-	-	-	1	1	-	1	1	2	-	-	-	-	-
Propyl Aldehyde	White-water Liquid	1	-	-	-	-	X	-	X	-	2	X	X	-	-	-	-	-	-	-	-
Propyl Chloride	Colorless Liquid	1	-	-	-	-	X	-	X	-	X	2	X	-	-	-	-	-	-	-	-
Propylene	Colorless Gas	1	-	-	-	X	X	X	X	X	X	1	X	-	-	-	-	-	-	-	-
Propylene Diamine	Colorless Liquid	1	-	-	-	-	2	-	2	-	2	-	X	-	-	-	-	-	-	-	-
Propylene Dichloride (Dichloropropane)	Colorless Liquid	1	-	-	-	X	X	X	X	X	X	2	X	-	-	-	-	-	-	-	-
Propylene Glycol	Liquid	1	1	-	1	1	1	1	1	1	1	1	1	1	2	1	-	-	-	-	-
Propylene Oxide	Colorless Liquid	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Purina Insecticide	-	1	1	-	-	2	X	-	-	X	2	2	-	-	2	-	1	1	1	1	2
Puropale RX Oils	Liquid	1	1	-	-	X	1	-	-	-	X	-	-	-	1	2	1	1	1	1	1
Pydraul 10E, 29E-LT, 30E, 60, 65E, 115SE	Liquid	1	1	-	-	2	X	-	-	-	2	-	-	2	-	X	1	1	1	1	1
Pydraul 135	Liquid	1	1	-	-	-	X	-	-	-	2	1	-	2	2	-	1	1	1	-	-
Pydraul 150	Liquid	1	1	-	-	2	X	X	X	X	2	1	X	2	2	X	1	1	1	1	1
Pydraul 280	Liquid	1	1	-	-	2	X	X	X	X	2	2	X	2	2	X	1	1	1	-	-
Pydraul 312	Liquid	1	1	-	2	X	X	X	X	X	X	1	-	2	1	X	1	1	1	-	-
Pydraul 50E	Liquid	1	1	-	-	2	-	-	-	-	2	2	-	2	1	X	-	-	-	-	-
Pydraul 540	Liquid	1	1	-	-	X	X	X	X	X	X	1	X	2	X	X	1	1	1	-	-
Pydraul 625	Liquid	1	1	-	-	2	X	X	X	X	2	1	X	2	2	X	1	1	1	-	-
Pydraul A-200	Liquid	1	1	-	-	X	X	X	X	X	X	1	X	2	2	X	1	1	1	-	-
Pydraul F-9	Liquid	1	2	-	-	2	X	X	X	X	2	1	X	2	2	-	1	1	1	-	-
Pyrene (Carbon Tetrachloride)	Colorless Liquid	1	2	X	X	X	X	X	X	X	1	X	2	1	X	X	2	2	X	2	2
Pyrethrum	Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Pyridine (50%)	-	1	2	-	2	-	-	-	-	X	-	X	X	-	-	X	-	1	1	1	1

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings				
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum
Pyrogard 160, 230, 630	Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-
Pyrogard 51, 53, 55	Liquid	1	1	-	-	2	X	-	-	-	-	-	-	-	-	1	1	1	-	-
Pyrogard C, D	Liquid	1	1	-	-	X	1	-	-	-	X	-	-	1	2	1	1	1	1	1
Pyronal (Transformer Oil)	Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Piperazine Hydrochloride Solution (34%)	In Water	1	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Pitch	In Aromatic Hydrocarbons	1	2	X	X	X	2	X	X	X	X	1	X	-	1	X	-	-	-	-
"Plating Solution Chrome (Under 120°F/49°C)"	Liquid	1	1	-	-	2	-	-	-	-	2	2	-	-	X	X	-	X	X	-
Pluronic (Block Polymer with Hydroxyl by BASF)	Liquid	1	1	1	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Polyester Plastic	-	1	1	-	-	-	-	-	-	-	-	2	-	-	2	-	-	-	-	-
Polyethylene Glycol glassy Solid"	"Colorless Liquid to 1	-	-	-	1	2	-	1	1	1	1	1	-	2	2	-	-	-	-	-
Polyethylene Plastic	Solid Beads	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Polypropylene Glycol	Liquid	1	1	-	1	1	1	-	1	1	1	1	1	-	-	-	-	-	-	-
Polypropylene Plastic	Solid Beads	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Polystyrene Plastic	Solid Beads	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
"Polyurethane Foam (Under 125°F/52°C)"	-	1	1	-	-	2	-	-	-	-	2	2	-	-	-	-	-	-	-	-
Polyvinyl Acetate - Emulsions	Emulsion	1	1	1	1	1	1	-	1	2	1	-	1	1	-	1	-	-	-	-
Potash (Potassium Carbonate) Aqueous Solution	Liquid	1	1	-	1	1	-	1	1	1	1	1	1	-	1	1	2	1	1	-
Potassium Acetate	White Powder	1	1	-	-	2	2	2	2	2	2	X	2	1	-	1	-	1	1	-
Potassium Bicarbonate	"Colorless crystal or white Powder"	1	1	-	-	1	1	1	1	1	1	1	1	-	1	1	-	-	-	-
Potassium Bisulfate	Colorless Crystal	1	1	-	-	1	1	1	1	1	1	1	1	1	-	1	-	-	-	-
Potassium Bromate	White Crystal or Powder	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Potassium Bromide	White Crystal or Powder	1	1	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-
Potassium Carbonate	White granular Powder	1	1	-	-	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1
Potassium Carbonate, Liquid	Colorless to Cloudy Liquid	1	1	-	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	-
Potassium Chlorate	Colorless to white Powder	1	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-
Potassium Chloride	Colorless to white Solid	1	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-
Potassium Chloride, Dry	White Solid	1	1	-	1	1	1	1	1	1	1	1	1	-	1	1	-	-	-	-
Potassium Chromate	Yellow Crystal	1	2	-	-	2	X	X	X	2	2	1	2	1	2	1	-	-	-	-
Potassium Cuprocyanide	White Crystalline Solid	1	-	-	-	1	1	1	1	1	1	1	1	-	2	1	-	-	-	-
Potassium Cyanide	White Crystal	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Quenching Oil	Liquid	1	-	-	-	-	2	-	-	2	-	-	-	-	-	-	1	1	1	-
Quintolubric 822	Liquid	1	1	-	-	2	1	-	-	2	X	1	-	-	1	-	1	1	1	1
Ramrod (Ag Spray)	-	1	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1	1	1
Rando Oils	Liquid	1	1	-	-	X	1	-	-	-	X	-	-	-	1	-	1	1	1	1
Rape Seed Oil (Canola Oil)	Brownish to yellow Liquid	1	1	-	2	2	2	-	-	2	2	-	X	-	2	-	1	1	1	1
Red Oil (Commercial Oleic Acid) (MIL-5606)	Liquid	1	2	2	2	2	1	X	X	2	2	2	X	2	1	2	2	2	1	2
Refined Wax (Petroleum)	-	1	1	-	-	-	1	X	X	2	-	1	-	-	1	-	1	1	1	-
Regal Oils R&O	Liquid	1	1	-	-	X	1	-	-	-	X	-	-	-	1	2	1	1	1	1
Richfield "A" Weed Killer	-	1	1	-	-	X	2	X	X	X	X	2	X	-	-	2	-	-	-	-
Road Paving Compound	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Road Tar -	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Round Up (Glyphosate)	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Rubilene Oils	Liquid	1	1	-	-	X	1	-	-	-	X	-	-	-	1	2	-	-	-	-
Salicylic Acid	White Powder	1	1	1	1	2	X	2	2	-	2	2	-	-	1	1	-	1	1	2
Salt Water (Sea Water)	Liquid	1	1	-	1	1	2	2	X	2	1	1	2	-	1	1	2	1	1	-

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Sauerkraut	-	1	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	
Sea Water Colorless	Liquid	1	1	-	1	2	2	X	2	1	1	2	-	1	1	2	-	1	-	2	
Sevin	-	1	2	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-	
Sewage	Sludge	1	1	1	1	1	2	2	X	2	-	-	2	1	1	2	X	1	1	2	1
Shampoo	Liquid	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shellac	Orange to colorless flake	1	-	X	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Shortening	-	1	-	-	-	X	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silicate of Soda	Brownish or yellow Liquid	1	1	-	-	1	1	-	1	1	1	1	1	-	-	-	-	-	-	-	-
Silicone Greases	Liquid	1	2	-	-	-	2	-	-	2	-	2	2	-	1	2	1	1	1	-	1
Silicone Oils	Liquid	1	2	-	-	-	2	-	-	2	-	2	2	-	1	2	1	1	1	-	1
Silver Cyanide	White Powder	1	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-
Silver Nitrate	Colorless crystal	1	1	-	-	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	2
Skydrol 500A & 7000	Liquid	1	1	-	1	1	X	X	X	X	2	X	X	2	1	X	1	1	1	1	-
Soap Oil	Liquid	1	1	2	-	-	X	-	-	X	-	-	X	-	-	-	1	1	1	-	-
Soap Solutions	Liquid	1	1	1	-	1	1	X	X	2	1	1	1	1	1	1	1	1	1	1	1
Soap, Liquid	Liquid	1	1	-	-	1	1	2	2	1	2	1	1	-	2	2	1	1	1	-	-
Soda Ash (Sodium Carbonate)	Grayish Powder	1	1	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	X	2
Soda Water	Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-
Sodium Acetate	Colorless crystal	1	1	-	-	2	X	2	2	X	2	X	X	1	1	1	1	1	1	1	1
Sodium Aluminate Solution	Colorless to cloudy Liquid	1	1	-	-	1	1	2	2	1	1	1	1	-	2	2	-	-	-	-	-
Sodium Benzoate	White Crystals or Powder	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Sodium Bicarbonate	White Crystals or Powder	1	1	-	-	1	1	1	1	1	1	1	1	1	1	1	2	1	1	-	2
Sodium Bichromate Solution	Red to clear Liquid	1	1	-	-	1	2	2	2	2	1	1	2	-	2	2	-	-	-	-	-
Sodium Bisulfate (Niter Cake)	"Colorless Crystals to White Lumps"	1	1	-	-	1	1	1	1	1	1	1	1	1	1	X	1	1	X	X	X
Sodium Bisulfite	White Crystals or Powder	1	1	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-
Sodium Borate (Borax)	White Crystals	1	1	-	-	1	1	1	1	1	1	1	1	1	1	2	1	1	-	2	-
Sodium Carbonate (Soda Ash)	Grayish Powder	1	1	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	X	2	2
Sodium Chlorate	Colorless Crystals	1	-	-	-	1	1	1	1	2	2	1	1	-	1	1	-	-	-	-	-
Sodium Chloride	Colorless to white Crystals	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	X	X	X
Sodium Chlorite Solution	Colorless to cloudy Liquid	2	-	-	-	X	X	2	2	X	2	X	2	-	X	2	-	-	-	-	-
Sodium Chromate	Yellow, translucent Crystals	1	-	-	-	-	1	2	2	1	2	1	X	-	2	2	-	-	-	-	-
Sodium Cyanide	In Water	1	1	-	-	1	1	1	1	1	1	1	1	1	1	2	1	1	X	X	X
Sodium Cyanide	White Crystalline Powder	1	1	-	-	1	1	1	1	1	1	1	1	1	1	2	1	1	X	X	X
Sodium Dichromate	Red to red - orange Crystals	1	-	-	-	1	1	2	2	2	1	1	2	1	-	1	-	-	-	-	-
Sodium Ferricyanide	Ruby-red Crystals	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Sodium Ferrocyanide	Yellow, transparent Crystals	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Sodium Fluoride (70%)	White Liquid	1	1	1	-	2	-	2	2	-	2	-	-	-	1	-	-	2	-	-	-
Sodium Hydrate	White Solid	1	2	-	-	1	2	2	2	2	2	2	2	-	2	2	-	-	-	-	-
Sodium Hydrochlorite	Pale greenish Liquid	1	2	-	-	2	X	2	X	X	2	1	1	-	2	2	-	-	-	-	-
Sodium Hydrosulfide	Colorless needles	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Sodium Hydrosulfite	"Lemon colored Powder or flake"	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Sodium Hydroxide (10%)	Colorless Liquid	1	1	1	1	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-
Sodium Hydroxide (40%)	Colorless Liquid	1	1	1	1	2	2	1	1	1	2	1	1	X	-	2	1	1	X	X	X
"Sodium Hydroxide (50%) (Under 212°F/100°C)"	Colorless Liquid	1	1	2	1	2	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
"Sodium Hydroxide (50%) (Under 115°F/46°C)"	Colorless Liquid	1	1	2	1	2	X	1	1	2	1	X	1	1	X	-	2	2	2	X	X
"Sodium Hydroxide (50%) (Under 180°F/82°C)"	Colorless Liquid	1	1	2	1	2	X	X	X	2	2	X	2	1	X	-	X	2	2	X	X
Sodium Hydroxide (60%)	White Liquid	1	2	1	-	2	X	2	2	2	2	X	2	1	X	-	X	2	2	X	X
Sodium Hydroxide (25%)	Colorless Liquid	1	1	1	1	2	2	1	1	1	2	1	1	X	-	X	X	2	X	X	X
Sodium Hypochlorite (20%)	White Liquid	1	2	1	-	1	X	X	X	X	-	X	1	1	2	1	X	X	2	X	X



Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Sodium Hypochlorite (5%)	White Liquid	1	2	1	-	1	X	X	X	-	-	1	1	1	1	X	X	2	X	X	
Sodium Hyposulfate	Large, transparent Crystals	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	
Sodium Metallic	Silver Solid	2	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sodium Metaphosphate	"Colorless Crystals to white Powder"	1	1	-	-	2	2	2	2	2	2	2	1	1	1	X	1	1	1	X	
Sodium Nitrate	Colorless crystal	1	1	-	-	2	X	X	X	X	2	-	2	1	1	1	2	2	2	2	
Sodium Perborate	White, amorphous Powder	1	1	-	-	2	X	X	X	X	2	-	X	-	2	-	X	1	1	1	X
Sodium Peroxide	Yellowish white Powder	1	1	2	-	-	-	-	-	1	1	1	2	X	1	X	1	1	1	X	
Sodium Phosphate	"Colorless Crystals to white Powder"	1	1	-	-	2	-	2	2	X	2	-	-	1	1	1	-	1	1	X	X
Sodium Silicate	Lumps of greenish glass	1	1	-	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	
Sodium Sulfate	White Crystals or Powder	1	1	-	-	1	1	2	2	1	1	1	1	1	1	-	-	-	-	-	
Sodium Sulfate Decahydrate (Glauber's Salt)	Crystals or Powder	1	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	
Sodium Sulfhydrate	Colorless to cloudy Liquid	1	2	-	-	1	2	X	2	2	2	2	-	2	2	-	-	-	-	-	
Sodium Sulfide	"Yellow/Brick red flakes or Crystals"	1	1	-	-	1	1	2	2	1	1	1	1	1	1	-	-	-	-	-	
Sodium Sulfide Solution	Colorless to cloudy Liquid	1	2	-	-	1	2	-	2	2	1	2	2	-	X	-	-	-	-	-	
Sodium Sulfite	White Crystals or Powder	1	1	-	-	2	2	2	2	2	2	-	2	1	1	1	1	1	-	-	
Sodium Sulfite Solution	Colorless to cloudy Liquid	1	2	-	-	1	2	-	2	2	1	2	2	-	X	-	1	1	1	-	-
Sodium Sulphhydrate	Colorless needles	1	2	-	-	1	2	-	-	2	1	2	2	-	2	2	-	-	-	-	
Sodium Thiocyanate Solution	Colorless to cloudy Liquid	1	1	-	-	1	1	2	-	1	2	1	2	-	-	-	-	-	-	-	
Sodium Thiosulfate (HPO)	White Powder	1	1	-	-	-	1	1	1	1	1	-	1	1	1	X	1	1	2	X	
Sodium Tripolyphosphate (STPP)	White Powder	1	2	-	-	-	-	-	-	-	2	X	-	-	-	-	1	1	X	X	
Solnus Oils	Liquid	1	1	-	-	X	1	-	-	-	X	-	-	-	1	1	1	1	1	1	
Sour Crude Oil	Liquid	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	
Soybean Oil	Pale yellow oil	1	1	1	2	X	2	X	X	2	2	1	2	-	1	2	1	1	1	-	-
Spent Acid	Liquid	1	2	2	X	X	X	X	X	X	X	1	2	X	X	X	-	1	1	-	-
Stannic Chloride	Colorless, fuming Liquid	1	1	-	-	-	2	2	2	2	X	1	X	1	X	2	X	-	-	X	
Stannic Sulfide	Yellow to brown Powder	1	2	-	-	-	2	-	2	-	2	-	2	-	-	-	-	-	-	-	
Stannous Chloride (Under 150°F)	White Mass	1	1	-	-	2	1	1	1	1	1	1	1	X	1	-	-	-	-	-	
Starch	White amorphous Powder	1	1	-	1	1	2	1	1	2	-	1	1	-	1	1	-	-	-	-	
Starch gum (Dextrin)	Yellow or White Powder	1	1	-	-	1	1	-	-	1	X	1	-	-	1	1	-	1	1	-	-
Stauffer Jet 1	Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1
Stauffer Jet 2	Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1
Steam	Gas	USE STEAM HOSE ONLY														-	-	-	-	-	
Stearic Acid (Octadecanoic Acid)	Colorless Waxy Solid	1	1	1	1	2	2	2	2	2	2	1	2	1	1	1	X	2	1	X	X
Stearin	Colorless crystal or Powder	1	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	
Stoddard Solvent	Clear petroleum distillate	1	2	-	2	X	2	X	X	-	X	1	-	1	1	2	2	1	1	-	1
STPP (Sodium Tripolyphosphate)	White Powder	1	2	-	-	2	-	2	2	-	2	X	-	-	-	-	-	2	1	X	X
Straight Synthetic Oils	Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-
Styrene (Monomer)	Colorless Oily Liquid	1	2	-	X	X	X	X	X	-	X	2	-	2	2	-	2	X	2	X	2
Sucrose Solutions	Liquid	1	1	-	1	-	1	1	1	1	1	-	1	-	-	-	1	1	1	-	-
Sugar, Liquid, Blended	Liquid	1	1	-	1	1	1	1	1	1	1	1	2	-	-	-	-	-	-	-	-
Sugar, Syrup	Liquid	1	1	-	1	1	1	1	1	1	1	1	2	-	-	-	-	-	-	-	-
Sulfamic Acid	In Water	1	1	1	1	2	X	X	X	-	2	1	2	1	X	X	-	-	-	-	-
"Sulfamic Acid (10%) (Under 170°F/77°C)"	Colorless Liquid	1	X	-	-	-	-	X	X	-	-	2	2	1	-	-	-	-	-	-	-
Sulfate Liquors (Under 150°F/66°C)	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-
Sulfur (Under 200°F/93°C)	Yellow Crystals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfur Chloride	Yellow Oily Liquid	1	2	-	-	-	X	X	X	X	X	1	2	-	2	2	X	X	2	-	X

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Sulfur Dioxide	Colorless Gas or Liquid	-	-	-	1	2	X	X	-	-	2	X	-	-	-	-	-	-	-	-	-
Sulfur Dioxide (Dry)	-	1	2	-	-	2	X	X	X	X	X	1	2	-	X	1	2	1	1	1	1
Sulfur Dioxide (Liquid)	Colorless Liquid	1	-	1	-	1	X	X	X	2	2	X	2	-	-	X	-	-	-	-	-
Sulfur Dioxide (Moist)	-	1	-	1	-	1	X	X	X	2	1	2	2	-	-	X	-	-	-	-	-
Sulfur Hexafluoride (Gas)	Colorless Gas	1	1	-	-	1	2	2	2	1	1	2	2	-	1	2	-	-	-	-	-
Sulfur Trioxide (Dry)	Solid	1	2	-	-	2	X	X	X	X	X	1	X	X	-	1	2	2	2	2	-
Sulfuric Acid (10%)	Colorless Water Solution	1	1	1	1	1	2	1	1	1	1	1	1	X	-	-	X	X	2	X	X
Sulfuric Acid (100%)	Colorless Liquid	1	X	X	X	X	X	X	X	X	2	X	X	-	-	2	X	2	X	2	X
Sulfuric Acid (30%)	Colorless Water Solution	1	1	1	1	1	2	2	1	1	1	1	1	X	-	X	X	2	X	X	X
Sulfuric Acid (50%)	Colorless Water Solution	1	1	1	1	1	X	X	X	2	1	1	1	X	-	X	X	2	X	X	X
Sulfuric Acid (60%) (48.5 deg Baume)	Colorless Liquid	1	1	1	1	1	X	X	X	X	1	1	1	1	X	-	X	X	2	X	X
Sulfuric Acid (75%)	Colorless to Brown Solution	1	1	1	1	2	X	X	X	X	2	1	2	2	X	-	X	X	2	X	X
Sulfuric Acid (88%) (64.7 deg Baume)	Colorless Liquid	1	2	1	2	X	X	X	X	X	1	X	X	X	-	X	X	2	X	X	X
Sulfuric Acid (93%)	Colorless to Brown Oily Liquid	1	X	1	2	X	X	X	X	X	1	X	X	X	-	X	X	2	X	X	X
Sulfuric Acid (96%)	Colorless Liquid	1	X	1	2	X	X	X	X	X	1	X	X	X	-	X	X	2	X	X	X
Sulfuric Acid (98%)	Colorless to Brown Oily Liquid	1	X	1	2	X	X	X	X	X	1	X	X	X	-	X	X	2	X	X	X
Sulfuric Acid, Fuming (Oleum)	Colorless to Dark Brown Oily Liquid	1	X	X	X	X	X	X	X	X	1	X	X	X	X	-	-	1	-	-	-
Sulfurous Acid (10%)	Colorless Liquid	1	1	1	1	1	X	X	X	-	2	1	1	1	-	1	-	X	2	1	X
Sulfurous Acid (75%)	Colorless Liquid	1	1	1	1	1	X	X	X	X	1	1	1	X	-	X	X	2	X	X	X
Sun R&O Oils	Liquid	1	1	-	-	1	1	-	-	-	X	1	-	-	1	2	1	1	1	1	1
Suntac HP Oils	Liquid	1	1	-	-	X	1	-	-	-	X	1	-	-	1	2	1	1	1	1	-
Suntac WR Oils	Liquid	1	1	-	-	X	1	-	-	-	X	1	-	-	1	2	1	-	1	1	-
Sunvis Oils 700, 800, 900	Liquid	1	1	-	X	X	1	-	-	-	X	1	-	-	1	2	1	1	1	-	-
Synthetic Oil (Citgo)	Liquid	1	1	-	-	X	-	-	-	-	X	-	-	-	1	2	1	1	1	-	-
Syrup	Viscous Liquid	1	1	-	1	-	-	1	1	2	-	1	-	-	-	-	-	1	1	-	-
Tall Oil	Black liquid	1	2	-	X	X	1	X	X	X	2	X	-	-	X	-	X	2	-	-	-
Tall Oil (Under 150°F/66°C)	Liquid	1	1	-	2	X	2	X	X	2	X	1	X	-	-	-	X	2	-	-	-
Tallow	White to clear Solid or Liquid	1	1	-	2	2	2	-	-	2	2	-	-	-	1	2	2	2	2	1	2
Tannic Acid	Faint Yellow Powder	1	1	1	1	1	X	2	2	2	1	1	2	1	1	1	2	1	1	2	X
Tannic Acid (10%)	Yellow Liquid	1	1	-	-	-	X	2	2	2	X	1	2	1	1	1	2	1	1	2	X
Tar (Bituminous) (Under 100°F/38°C)	-	1	1	2	X	X	2	X	X	2	X	1	-	X	-	-	1	1	1	1	2
Tar Oil	Yellow to dark brown Liquid	1	-	-	X	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-
Tartaric Acid	White Crystalline Powder	1	1	1	1	1	2	2	2	2	1	1	1	1	-	-	-	2	2	2	-
TEA (Triethanolamine)	Colorless Viscous Liquid	1	1	-	-	1	2	2	2	2	2	X	2	1	-	2	-	1	1	-	1
TEL (Tetraethyl Lead)	Colorless Oily Liquid	1	2	-	-	X	2	X	X	X	1	X	-	2	1	-	-	-	-	-	-
Tellus Oils Liquid	1	1	-	-	X	1	-	-	-	X	1	-	-	1	2	1	1	1	1	1	-
Tenol Oils Liquid	1	1	-	-	X	1	-	-	-	X	1	-	-	1	2	1	1	1	-	-	-
Tergitol (Ethoxylates and Ethoxysulfates of Alcohol)	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	1	-	2
Terpineol	Colorless Liquid or Crystal	1	1	-	-	-	-	X	X	-	X	-	2	1	2	2	-	-	-	-	-
Tertiary Butyl Alcohol	Colorless Liquid or Crystal	1	2	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Tetrachlorobenzene	White Crystal	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
Tetrachloroethane (Acetylene Tetrachloride)	Colorless Liquid	1	X	X	X	X	-	X	X	-	X	1	X	X	1	X	-	-	-	-	-
Tetrachloroethylene	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Tetrachloromethane	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Tetrachloronaphthalene	Oily Liquid to Crystalline Solid	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
Tetradecanol	White Solid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetraethyl Lead (TEL)	Colorless Oily Liquid	1	2	-	-	X	2	X	X	X	1	X	-	2	1	-	-	-	-	-	-
Tetraethylene Glycol	Colorless Liquid	1	2	-	-	-	2	-	2	-	1	2	2	-	-	-	-	-	-	-	-

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Tetrahydrofuran (THF)	Colorless Liquid	1	X	-	-	2	X	X	X	X	2	1	X	-	1	X	2	-	-	-	-
Tetrahydroxydi-cyclopentadiene (JP 10) <sup>2</sup>	-	-	-	-	X	X	X	X	X	X	1	X	-	1	X	-	-	-	-	-	-
Tetralin	Colorless Liquid	1	-	-	X	X	X	X	X	X	1	X	-	2	-	-	-	-	-	-	-
Theobromo Oil (Cocoa Butter)	Liquid above 95°F (35°C)	1	1	2	2	-	2	X	X	2	-	-	-	-	-	1	1	1	-	-	
THF (Tetrahydrofuran)	Colorless Liquid	1	X	-	-	2	X	X	X	2	1	X	-	1	X	2	-	-	-	-	-
Thiopen	-	1	-	-	-	X	X	X	X	2	2	-	-	-	-	-	-	-	-	-	-
Tin Tetrachloride	Colorless Liquid	1	-	-	-	-	2	-	2	X	-	2	-	-	-	-	-	-	-	-	-
Titanium Tetrachloride	Colorless Liquid	1	-	-	-	X	X	-	-	X	X	2	-	-	-	-	1	2	2	X	X
Toluene (Toluol) (Methyl Benzene)	Colorless Liquid	1	2	2	X	X	X	X	X	X	1	X	X	1	X	1	1	1	1	1	1
Toluene Diisocyanate (Hylene)	Yellow Liquid	1	-	-	-	2	X	X	X	2	X	X	-	-	-	-	-	-	-	-	-
Toluene Diisocyanate (Isocyanate)	Water White to Yellow Liquid	1	2	1	X	X	X	X	X	X	1	-	-	1	-	1	1	1	1	-	-
Toluidine	Yellow Liquid or White Crystal	1	-	-	-	-	X	-	X	-	X	2	X	-	-	-	-	-	-	-	-
Toluol (Toluene)	Colorless Liquid	1	2	2	X	X	X	X	X	X	1	X	X	1	X	1	1	1	1	1	1
Transformer Oil (Askarel Types) <sup>1</sup>	Liquid	1	2	2	X	X	X	X	X	X	1	X	1	1	X	1	1	1	-	1	1
Transformer Oil (Petroleum Type) <sup>1</sup>	Liquid	1	1	-	-	X	1	X	X	2	X	1	X	1	1	2	1	1	1	1	1
Transmission Fluid (Type A)	Liquid	1	1	-	-	X	1	X	X	2	X	1	-	1	2	-	1	1	1	-	1
Tributoxyethyl Phosphate	Yellow Liquid	1	1	X	-	2	X	X	X	-	2	-	X	X	2	-	1	-	-	X	-
Tributyl Phosphate	Colorless Liquid	1	1	X	-	X	X	X	X	X	1	X	2	-	-	1	-	-	X	-	-
Tricalcium Aluminate (Calcium Aluminate)	Crystals or Powder	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorobenzene	White Crystal or colorless Liquid	1	2	-	-	-	X	X	X	X	2	X	-	-	-	-	-	-	-	-	-
Trichloroethane 1,1,1 (Methyl Chloroform)	Colorless Liquid	1	X	-	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-	-	-
Trichloroethylene	Colorless Liquid	1	1	X	X	X	X	X	X	X	1	X	2	2	-	X	-	1	X	1	1
Trichloropropane	Colorless Liquid	1	-	-	-	-	2	-	X	2	X	1	X	-	-	-	-	-	-	-	-
Tricresyl Phosphate	Colorless Liquid	1	-	X	-	1	X	X	X	2	1	X	1	1	-	1	-	2	X	-	-
Triethanolamine (TEA)	Colorless Viscous Liquid	1	1	-	-	1	2	2	2	2	2	X	2	1	-	2	-	1	1	-	1
Triethylamine	Colorless Liquid	1	-	-	-	2	2	X	X	-	X	2	-	-	-	-	-	-	-	-	-
Triethylene Glycol	Colorless Liquid	1	-	-	-	-	2	-	2	-	2	2	2	-	-	-	-	-	-	-	-
Trihydroxybenzoic Acid (Gallic Acid)	In Alcohol or Glycerol	1	1	1	1	1	X	2	2	X	2	1	-	1	X	X	X	1	1	-	-
Trimethyl Phosphite	Colorless Liquid	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trimethylbenzene (Mesitylene)	Liquid	1	-	-	X	X	X	X	X	X	1	-	-	1	X	-	-	-	-	-	-
Trinitrophenol (Picric Acid)	Yellow Crystals	1	2	2	2	2	2	2	2	2	1	2	-	X	1	X	1	1	X	X	X
Trioctyl Phosphate	Liquid	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Triphenyl Phosphate	Colorless Powder	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tripolyphosphate (STPP), (Sodium)	White Powder	1	2	-	-	2	-	2	2	-	2	X	-	-	-	-	-	2	1	X	X
Trisodium Phosphate (TSP)	Colorless crystal	1	-	-	-	1	2	2	X	2	2	1	X	-	-	-	-	-	-	-	-
Tung Oil	Yellow drying oil	1	2	-	X	X	2	X	X	X	1	2	-	-	2	1	1	1	1	1	1
Turpentine	Liquid oil	1	X	1	X	X	2	X	X	X	1	X	2	1	1	-	1	1	1	1	2
"Ucon Hydrolube Types 150CP, 200CP"	Liquid	1	1	-	-	1	1	-	-	-	1	-	-	1	2	1	1	1	1	1	1
"Ucon Hydrolube Types 275CP, 300CP, 550CP"	Liquid	1	-	-	-	-	1	X	X	-	X	1	-	-	2	2	-	-	-	-	-
Ucon M1	Liquid	1	1	-	-	1	1	-	-	-	1	-	-	1	2	1	1	1	1	1	1
Undecanol (Undecyl Alcohol)	Colorless Liquid	1	-	-	-	-	1	-	2	-	-	2	2	-	-	-	-	-	-	-	-

Chemical	Form (at room temperature unless otherwise stated)	Hose Material														Couplings					
		FEP / PTFE	XLPE	UHMWPE	Sanitron	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	CSM	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass
Undecyl Alcohol (Undecanol)	Colorless Liquid	1	-	-	-	-	1	-	2	-	-	2	2	-	-	-	-	-	-	-	-
Union Hydraulic Tractor Fluid	Brown Liquid	1	1	-	-	X	1	-	-	-	X	-	-	1	2	1	1	1	1	1	1
Urea Solution (100%)	Liquid	1	1	1	1	1	2	1	1	1	2	-	1	1	1	2	1	1	1	-	-
Varnish	-	1	2	-	X	X	X	X	X	X	2	X	-	1	-	2	1	1	-	2	-
Vegetable Oils	Liquids	1	-	1	2	2	-	X	X	2	X	-	1	1	1	2	1	1	1	1	-
Versilube F-50, F-44	Liquids	1	-	-	-	2	2	2	2	2	1	2	-	1	2	1	1	1	1	1	-
Vinegar	Brownish to colorless Liquid	1	1	-	1	-	2	2	2	2	1	X	2	-	1	X	2	1	X	X	-
Vinyl Acetate	Colorless Liquid	1	1	X	2	X	X	X	X	2	X	X	1	-	-	-	1	2	1	1	2
Vinyl Chloride (Monomer)	-	1	2	-	-	X	X	X	X	X	2	X	X	-	X	2	1	1	1	1	X
Vinyl Fluoride	Colorless Gas	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Vinyl Trichloride (Trichloroethane)	Colorless Liquid	1	-	-	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-	-	-
Vitrea Oils	Liquid	1	1	-	-	X	1	-	-	-	X	-	-	1	2	1	1	1	-	-	-
VM&P Naptha (Mineral Spirits)	Colorless Liquid	1	1	-	X	X	1	X	X	-	X	1	X	-	1	-	1	1	1	2	1
Waste Paint	Liquid to semi-Solid paste	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water	Liquid	1	1	1	1	1	1	1	1	1	1	-	1	1	1	2	1	1	1	1	1
Water (Brine)	Liquid	1	1	-	1	1	2	1	1	2	1	1	-	1	1	-	-	-	-	-	-
Water (Deionized)	Liquid	1	-	1	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Water (Distilled)	Liquid	1	1	1	1	1	1	1	1	2	1	-	1	-	1	1	-	-	-	-	-
Water (Potable)	Liquid	USE FDA HOSE ONLY														-	-	-	-	-	-
Water Glycols	Liquid	1	1	1	1	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
Water in Oil Emulsions	Liquid	1	1	1	2	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
White & Bagley No.2190 Cutting Oil	Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wines	Liquid	1	2	-	1	X	X	X	X	X	1	X	1	1	-	2	2	2	1	-	-
Wood Oil	Liquid	1	1	-	-	X	1	X	X	2	X	1	2	1	1	1	-	-	-	-	-
Xylene (Dimethylbenzene)	Colorless Liquid	1	2	X	X	X	X	X	X	X	1	X	X	1	X	-	-	-	-	-	-
Xylenol (Dimethylphenol)	White solid, liquid @ 68°F (20°C)	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Zeric	-	1	1	-	-	X	1	-	-	-	X	-	-	2	2	-	-	-	-	-	-
Zinc Acetate	White Crystal	1	1	-	-	2	X	2	2	X	2	X	X	-	X	1	1	1	1	1	1
Zinc Chloride Solutions	Colorless to cloudy Liquid	1	1	-	1	-	1	2	2	1	2	1	1	1	1	2	X	2	1	X	X
Zinc Chromate	Yellow Solid	1	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-	1	1	-	-
Zinc Hydrate	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Zinc Oxide	White or gray Powder	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Zinc Sulfate Solutions	Colorless to cloudy Liquid	1	1	-	-	2	2	X	X	2	2	-	2	1	2	2	X	2	1	X	X



## CONVERSION TABLE

	UNIT		CONVERSION UNIT		FACTOR	
	UNIT	CONVERSION UNIT	UNIT	CONVERSION UNIT	UNIT	FACTOR
<b>PRESSURE</b>	1 pound per square-inch	bar	0.06895			
	1 bar	psi	14.5035			
	1 pound per square-inch	MPa	0.006895			
	1 mega pascal	psi	145.035			
	1 kilo pascal	bar	0.01			
	1 bar	kPa	100			
	1 mega pascal	bar	10			
	1 bar	MPa	0.1			
	1 inch	mm	25.4			
	1 millimetre	in	0.03934			
<b>LENGTH</b>	1 foot	m	0.3048			
	1 metre	ft	3.28084			
	1 square-inch	cm <sup>2</sup>	6.4516			
<b>AREA</b>	1 cubic centimetre	cubic in	0.0610			
	1 gallon (UK)	ltr	4.54596			
<b>VOLUME</b>	1 litre	gal (UK)	0.219976			
	1 gallon (US)	ltr	3.78533			
	1 litre	gal (US)	0.264177			
<b>WEIGHT</b>	1 pound	kg	0.453592			
	1 kilogramme	lb	2.204622			
	1 gallon per minute (UK)	l / min	0.54596			
<b>FLOW RATE</b>	1 litre per minute	gal / min. (UK)	0.219976			
	1 gallon per minute (US)	l / min.	3.78533			
	1 litre per minute	gal / min. (US)	0.264178			
<b>VELOCITY</b>	1 foot per second	m / s	0.3048			
	1 metre per second	ft / s	3.280840			
<b>TEMPERATURE</b>	Fahrenheit degree	°C	5/9 (°F-32)			
	Celsius degree	°F	°C 9/5+32			

PSI TO METRIC			
Pounds per Square Inch (psi)	Kilo Pascals (KPa)	Mega Pascals (MPa)	Bar (Bar)
10	68.9	0.07	0.7
20	137.9	0.14	1.4
30	206.8	0.21	2.1
40	275.8	0.28	2.8
50	344.7	0.34	3.4
60	413.7	0.41	4.1
70	482.6	0.48	4.8
80	551.6	0.55	5.5
90	620.5	0.62	6.2
100	689	0.7	6.9
200	1,379	1.4	13.8
300	2,068	2.1	20.7
400	2,758	2.8	27.6
500	3,447	3.4	34.5
600	4,137	4.1	41.4
700	4,826	4.8	48.3
800	5,516	5.5	55.2
900	6,205	6.2	62.1
1,000	6,895	6.9	68.9
2,000	13,790	13.8	137.9
3,000	20,684	20.7	206.8
4,000	27,579	27.6	275.8
5,000	34,474	34.5	344.7
6,000	41,369	41.4	413.7
7,000	48,263	48.3	482.6
8,000	55,158	55.2	551.6
9,000	62,053	62.1	620.5
10,000	68,948	68.9	689
20,000	137,895	137.9	1,379
30,000	206,843	206.8	2,068
40,000	275,790	275.8	2,758

METRIC TO PSI			
Kilo Pascals (KPa)	Mega Pascals (MPa)	Bar (Bar)	Pounds per Square Inch (psi)
100	0.1	1	14.5
200	0.2	2	29.0
300	0.3	3	43.5
400	0.4	4	58.0
500	0.5	5	72.5
600	0.6	6	87.0
700	0.7	7	101.5
800	0.8	8	116.0
900	0.9	9	130.5
1,000	1.0	10	145.0
2,000	2.0	20	290.1
3,000	3.0	30	435.1
4,000	4.0	40	580.2
5,000	5.0	50	725.2
6,000	6.0	60	870.2
7,000	7.0	70	1,015.3
8,000	8.0	80	1,160.3
9,000	9.0	90	1,305.3
10,000	10.0	100	1,450
20,000	20.0	200	2,901
30,000	30.0	300	4,351
40,000	40.0	400	5,802
50,000	50.0	500	7,252
60,000	60.0	600	8,702
70,000	70.0	700	10,153
80,000	80.0	800	11,603
90,000	90.0	900	13,053
100,000	100	1000	14,504
200,000	200	2000	29,008
300,000	300	3000	43,511

## Notes:

JK Pioneer

## Notes:

JK Pioneer

## THE STATE OF THE ART PLANT AND FACILITIES



MADURAI - TN

Belts & Hoses



NILAKOTTAI - TN

Belts



PATANCHERU - HYD

Belts & Oil Seals



SRIPERUMBUDUR - TN

Oil Seals



PASHAMAILARAM - HYD

Engineering Product



SRIPERUMBUDUR - TN

R & D Centre



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- Bangalore:** No. 109, 1st Floor, Brigade Rubix, Plot No.5, H.M.T. Main Road, Opp BFW, Bangalore - 560 013. Ph: 080-26756333,
- Indore:** 58, New Dewas Road, Vallabh Nagar, Above SBI Branch, Malwa Mill Square, Indore - 452 003. Ph: 0731 4205048 / 4285048, 9981507191.
- Jaipur:** 511, Neelkanth Tower, C Scheme, Opposite Sahkar Bhawan, Jaipur - 302001. Ph: +91-141-2220410, 4160510. Mob: 9799394727.
- Kanpur:** 1st Floor, 13/391, Civil Lines, Kanpur-208001. U.P. Mob: 09793999997
- Kochi:** 48/559, B15, 3 rd Floor, Asthapan Arcade, Near Gold Souk Grande Mall, Service Road, NH-66, Vytilla, Kochi, Kerala - 682 019. Ph: 0484-6003888, 98950 71066.
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- Ludhiana:** Oberoi Towers, Building No. BXV/85, First Floor, G.T.Road, Miller Ganj, Ludhiana - 141 003. Ph: 0161-2410214.
- Madurai:** 117/6E, Madurai - Usilampatti Road, Meenakshipuram, Madurai - 625 016. Ph: 0452-2383920,
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