



INDUSTRIAL HOSE PRODUCTS





Table of Contents

Warning	3
Service Life	4
Proper Hose Selection	5
Explanation of the symbols used in this document	6
Index of Industrial Hoses by Application	8
Industrial Hose Categories	9
Petroleum Transfer Hoses	9
Steam Hoses	21
Acid-Chemical Hoses	25
Food & Beverage Hoses	33
Water & Air Hoses	41
Material Handling Hoses	47
Terms and Conditions of sales	54
Care and Maintenance of Hose	58
Storage	60
Hose Finder	61
Gates Chemical Rating System	62
Chemical Resistance Table	63

Warning

Gates Europe N.V. recommends industrial hoses for normal service as described in this catalog. Other applications should be referred to your respective marketing representative.



In any application, there may be inherent risk of bodily injury or property damage and the user is responsible for implementation of adequate safety precautions. It is the responsibility of the person supplying the hose to advise the user of proper instructions for the adequate safe use and/or precautions and to warn the user of consequences of failure to heed such instruction. Should a hose assembly fail during use because of excessive pressure, injurious and/or damaging chemicals, elevated temperature materials, explosives or flammable materials, then serious bodily injury or destruction of property could result from impelled couplings, whipping hose, high pressure or high velocity discharge, chemical contact, high temperature materials, explosion or fire.

In known high risk areas, it is recommended that hose inspections be performed at frequent intervals related to the risk factor. Hose with obvious damage should be scrapped and replaced. These inspections should include tube and cover conditions, leaking or slipped couplings and proof test.

IMPORTANT

Gates recommends only those applications of products specified in Gates product literature. Gates disclaims any liability for use of its products in applications other than those for which they were designed.





Service Life

All rubber products, including Industrial Hose assemblies, have a limited life on a given application. Assuming the correct hose has been selected for the application, this service life can be adversely affected by many variable conditions. The major ones are:

- Exposure to severe external abuse such as kinking, bending, high end pull, crushing or abrasion.
- Exposure to higher-than-rated working pressures or to high surge pressures.
- Exposure to higher-than rated temperatures.
- Misapplication or exposure to corrosive liquids or gases outside the range of suitable applications.

1. **External abuse**—hoses should be placed where they will not be run over by equipment or subjected to high end pull. Hoses should not be bent below recommended minimum bend radius. This could result in kinking the hose or reducing its pressure resistance. Large diameter hoses also may require additional support to reduce external abuse.

2. **Hose & System Pressures**—In establishing and determining pressures related to hose and the systems to which they are applied, it is necessary to consider separately the characteristics of the hose and the system.

- The system (or device or application) can have several pressures depending on pressure sources and surges imposed by the operator or mechanical components.
- A given hose has a fixed characteristic with respect to the pressure it can withstand (and how it is applied) and still gives satisfactory life.

3. **High Temperatures**—the allowable temperature ranges for industrial hoses are shown on each data page. These are for product temperatures and should not be exceeded. High temperatures can degrade rubber stocks very quickly resulting in short service life. Where external temperatures are higher than normal ambient, contact your Gates field representative for recommendations.

4. **Misapplication**—All industrial hoses are designed for a certain specific application or related application. They should not be used for any other applications.

5. **Hose Information**—Refer to the following pages for details of hose construction and physical characteristics. These are shown in the data pages and include such items as rated working pressure, minimum bend radius and static conductivity ratings.

6. **Internal Abrasion**—For applications of a highly abrasive nature where the hose makes one or more bends, hose should be rotated 90° periodically to lengthen service life.

The hose manufacturer established, through design and testing, the recommended rated working pressure for the hose. It is the responsibility of the user to accurately determine the system pressure. Steady state pressure can be measured readily by gauges. Surges are difficult to measure and may require the use of electronic pressure pickup devices. Also, surge values depend on so many variables that a series of tests are usually required to obtain a valid set of readings. However, if there are extreme surges in the normal operation, or if there is the likelihood of abnormal operation of the system, the magnitude must be determined.

Considering the recommended rated working pressure of the HOSE and the various pressures of the SYSTEM, the hose is matched to the system using proper application engineering principles.



Proper hose selection

Proper hose selection is the first step in preventive maintenance. Selecting the best product for the application will allow you to obtain the maximum life expectancy from the product for the best value.

When selecting the correct hose, use the acronym **STAMPED** as your guide:

S = Size	I.D. (Inside Diameter) O.D. (Outside Diameter) Based on the machinery sizing.
T = Temperature	Consider exterior and interior temperature, as well as temperature impact on the material being conveyed.
A = Application	Where will the hose be used? How will the hose be used? How often will the hose be used (continuous, intermittent, seldom)? What are the environmental conditions? Special hose construction (crush resistance)? Conductivity requirements? Is the hose used in a critical application? Government or Industrial Standard requirements? Use hoses that are specifically designed for these applications: • Steam • LP Gas • Aircraft Ground refueling • Corrosive Chemicals
M = Material being conveyed	Chemical name(s) and state(s) – (liquid, solid or gas, concentration) Food Dry or powder Liquid
P = Pressure	What is the working pressure? What is the maximum surge pressure? Is there a vacuum?
E = End requirements	What type of thread ends?
D = Delivery	Identify how many items and when they need to be supplied. • Distributors – Call Customer Service. • End Users – Call Distributors.

Explanation of the symbols used in this document

Application icons



Food



Beer, Wine



Chemicals



Cold Water



Oil



Plaster, Concrete



Milk



Vapour


Water, Sea Water, Waste Water,
Mud, Slurry


Nitrogen



Radiator



Granulates, Powders



Blower hose



Cement powder, Sand



Gas

Explanation of symbols



Hose inside diameter



Minimum bend radius



Hose outside diameter



Weight



Wall thickness



Length



Maximum working pressure



Hose



Minimum burst pressure



Vacuum



Homologation icons



FDA (US Food and Drug Administration) is an agency within the Department of Health and Human Services and consists of centers and offices. The FDA is responsible for protecting the public health by assuring the safety, efficacy, and security of human and veterinary drugs, biological products, medical devices, our nation's food supply, cosmetics, and products that emit radiation.



The Federal Institute for Risk Assessment (BfR) is active in the field of consumer health protection. Its tasks include the assessment of existing and the identification of new health risks, the drawing up of recommendations on risk reduction, and the communication of this process.



The United States Pharmacopeia (USP) is a non-governmental, official public standards-setting authority for prescription and over-the-counter medicines and other healthcare products manufactured or sold in the United States. USP also sets widely recognized standards for food ingredients and dietary supplements. USP sets standards for the quality, purity, strength, and consistency of these products – critical to the public health.



A hose which is capable of discharge is a hose with a resistance of more than $10^3 \Omega/\text{m}$ and less than $10^6 \Omega/\text{m}$ and is indicated with an Ω icon. An object or device is capable of discharge if its surface resistance is between $10^4 \Omega$ and $10^9 \Omega$ measured at 23°C and 50% relative humidity. The characteristic of being able to discharge is also referred to as being "anti-static".



Animal Derived Ingredients (ADI) can cause the disease BSE and should therefore be avoided in products that may come into contact with products that are intended for human consumption. Hose liner material ingredients and process aids can contain ADI. GATES has therefore checked the compound portfolio and can now offer a broad selection of ADI free food and beverage hoses.



Index of industrial Hoses by Application

PETROLEUM TRANSFER HOSES	9
PREMIUM™ FUEL MASTER D - EN 12115/ EN 1761 FUEL TRANSFER 20 BAR Ω	10
PREMIUM™ FUEL MASTER SD - EN 12115/ EN 1761 FUEL TRANSFER 16 BAR Ω	11
ESSENTIAL™ OIL MASTER SD - 10 BAR Ω	12
ESSENTIAL™ OIL MASTER LITE SD - 10 BAR Ω	13
Longhorn® AF	14
ESSENTIAL™ REEL MASTER D - 10 BAR Ω	15
ESSENTIAL™ BUNKER MASTER D - 16 BAR Ω	16
PREMIUM™ GP MASTER - 25 BAR AIR_WATER_OIL - NBR - DN.. Ω	17
PREMIUM™ TAR MASTER SD - HOT TAR & ASPHALT Ω	18
Scorpion™ X-Treme	19
STEAM HOSES	21
PREMIUM™ STEAM MASTER - EN ISO 6134:2005-2A STEAM 18 BAR 210°C Ω - DRAIN AFTER USE	22
PREMIUM™ STEAM MASTER RED - EN ISO 6134:2005-2A STEAM 18 BAR 210°C - DRAIN AFTER USE	23
PREMIUM™ HEATER MASTER - STEAM OPEN SYSTEM 6 BAR 164°C Ω	24
ACID-CHEMICAL HOSE	25
PREMIUM™ CHEM MASTER XLPE SD - CHEMICAL TRANSFER 16 BAR	26
PREMIUM™ CHEM MASTER EPDM D - EN 12115 CHEMICAL TRANSFER 16 BAR Ω	27
PREMIUM™ CHEM MASTER EPDM SD - EN 12115 CHEMICAL TRANSFER 16 BAR Ω	28
PREMIUM™ CHEM MASTER UHMWPE SD - EN12115 CHEMICAL TRANSFER 16 BAR Ω	29
Stallion®	30
77B Paint Spray and Chemical	31
FOOD & BEVERAGES HOSE	33
PREMIUM™ DAIRY MASTER SD - FOOD 10 BAR	34
PREMIUM™ DAIRY MASTER LITE SD - FOOD 10 BAR	35
PREMIUM™ DAIRY MASTER CRUSH SD - FOOD 10 BAR	36
PREMIUM™ WASHDOWN MASTER - FDA 6 BAR - STEAM OPEN SYSTEM	37
PREMIUM™ MILK MASTER SD - FOOD 6 BAR	38
PREMIUM™ BEVERAGE MASTER D - BEER WINE 16 BAR	39
PREMIUM™ BEVERAGE MASTER CRUSH LITE SD - BEER WINE 16 BAR	40
WATER & AIR HOSES	41
ESSENTIAL™ WATER MASTER D - 10 BAR	42
ESSENTIAL™ WATER MASTER SD - 10 BAR	43
PREMIUM™ MULTI MASTER - 20 BAR - AIR_WATER - EPDM - DN.. Ω	44
33HB Divers' Air	45
MATERIAL HANDLING HOSES	47
ESSENTIAL™ SANDBLAST MASTER D - 12 BAR	48
ESSENTIAL™ CEMENT MASTER D - 8 BAR	49
ESSENTIAL™ CEMENT MASTER SD - 8 BAR	50
ESSENTIAL™ SILO MASTER D - FOOD 8 BAR	51
ESSENTIAL™ SILO MASTER SD - FOOD 8 BAR	52
ESSENTIAL™ CONCRETE MASTER D - 40 BAR	53

Petroleum Transfer Hoses





Petroleum Transfer Hoses

PREMIUM™ FUEL MASTER D



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
19	31	6	20	80	133	0.6	40	4110-12001
19	31	6	20	80	133	0.6	61*	4110-12002
25	37	6	20	80	175	0.8	40	4110-12003
25	37	6	20	80	175	0.8	61*	4110-12004
32	44	6	20	80	224	0.9	40	4110-12005
32	44	6	20	80	224	0.9	61*	4110-12006
38	51	6.5	20	80	266	1.2	40	4110-12007
38	51	6.5	20	80	266	1.2	61*	4110-12008
50	66	8	20	80	350	1.6	40	4110-12009
51	67	8	20	80	357	1.6	40	4110-12010
51	67	8	20	80	357	1.6	61*	4110-12011
63	79	8	20	80	441	2.1	40	4110-12012
75	91	8	20	80	525	2.4	40	4110-12013
76	92	8	20	80	532	2.5	40	4110-12014
76	92	8	20	80	532	2.5	61*	4110-12015
100	116	8	20	80	700	3.4	40	4110-12016
102	118	8	20	80	714	3.5	40	4110-12017
102	118	8	20	80	714	3.5	61*	4110-12018
150	170	10	20	80	1050	6.8	40	4110-12019

* 61m coils are made to order

RECOMMENDED FOR

Premium pressure hose (D) for mineral oil products and fuel mixtures with a maximum 50 % aromatic content. Ideal for offshore/onshore transfer applications involving discharge service for diesel oils and other similar petroleum products where an extremely lightweight, flexible hose with a high rated working pressure and a small minimum bend radius is required.

TUBE

Black NBR1 rubber, smooth and oil resistant

REINFORCEMENT

High tensile synthetic textile cord, two crossing anti-static wires

COVER

CR rubber, black, smooth with cloth impression, good resistance to weather and abrasion, chemical and oil resistance

TEMPERATURE

-30°C to +90°C

BURST PRESSURE

4 x WP

ELECTRICALLY CONDUCTIVE

$R < 10^6 \text{ Ohm}$

STANDARDS

EN 12115, EN 1761

BRANDING TRANSFER LABEL

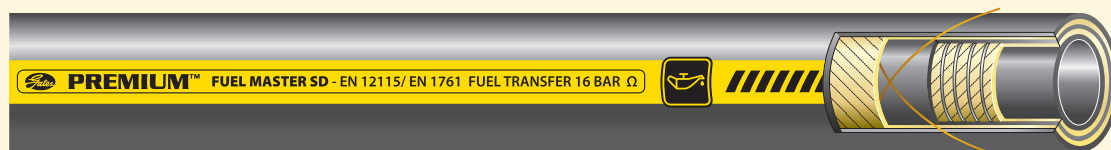
PREMIUM™ FUEL MASTER D - EN 12115/ EN 1761 FUEL TRANSFER 20 BAR Ω

BRANDING EMBOSSED LABEL

GATES PREMIUM™ FUEL MASTER D - EN 12115/ EN 1761 - NBR1 - DIAM mm - 20 BAR Ω- Q - year



PREMIUM™ FUEL MASTER SD



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
19	31	6	16	50	105	0.7	40	4688-14001
19	31	6	16	50	105	0.7	61*	4688-14002
25	37	6	16	50	138	0.8	40	4688-14003
25	37	6	16	50	138	0.8	61*	4688-14004
32	44	6	16	50	176	1.1	40	4688-14005
32	44	6	16	50	176	1.1	61*	4688-14006
38	51	6.5	16	50	209	1.3	40	4688-14007
38	51	6.5	16	50	209	1.3	61*	4688-14008
50	66	8	16	50	275	2.3	40	4688-14009
51	67	8	16	50	281	2.3	40	4688-14010
51	67	8	16	50	281	2.3	61*	4688-14011
63	79	8	16	50	347	2.9	40	4688-14012
75	91	8	16	50	413	3.3	40	4688-14013
76	92	8	16	50	418	3.3	40	4688-14014
76	92	8	16	50	418	3.3	61*	4688-14015
100	116	8	16	50	550	4.4	40	4688-14016
102	118	8	16	50	561	4.5	40	4688-14017
102	118	8	16	50	561	4.5	61*	4688-14018
125	145	10	16	50	688	6.9	40	4688-14019
150	172	11	16	50	825	9.6	40	4688-14020

* 61m coils are made to order

RECOMMENDED FOR

Premium vacuum and pressure hose (SD) for mineral oil products and fuel mixtures with maximum 50 % aromatic content. Ideal for offshore/onshore transfer applications involving suction and discharge service for diesel oils and other similar petroleum products where an extremely lightweight, hard wall, flexible hose with a high rated working pressure and a small minimum bend radius is required.

TUBE

Black NBR1 rubber, smooth and oil resistance

REINFORCEMENT

High tensile synthetic textile cord, steel wire helix and two crossing anti-static wires

COVER

CR rubber, black, smooth with cloth impression, good resistant to weather and abrasion, chemical and oil resistance

TEMPERATURE

-30°C to +90°C

BURST PRESSURE

> 50 bar

ELECTRICALLY CONDUCTIVE

R < 10⁶ Ohm

STANDARDS

EN 12115, EN 1761

BRANDING TRANSFER LABEL

PREMIUM™ FUEL MASTER SD - EN 12115/ EN 1761 FUEL TRANSFER 16 BAR Ω

BRANDING EMBOSSED LABEL

GATES PREMIUM™ FUEL MASTER SD - EN 12115/ EN 1761 - NBR 1 - DIAM mm - 16 BAR - Ω - Q - year





Petroleum Transfer Hoses

ESSENTIAL™ OIL MASTER SD



								
mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
19	29	5	10	30	95	0.5	40	4688-14051
25	35	5	10	30	125	0.6	40	4688-14052
32	42	5	10	30	160	0.9	40	4688-14053
38	48	5	10	30	190	1.0	40	4688-14054
50	60	5	10	30	250	1.4	40	4688-14055
65	77	6	10	30	325	2.3	40	4688-14056
75	88	6.5	10	30	375	2.7	40	4688-14057
100	114	7	10	30	500	3.9	40	4688-14058
125	141	8	10	30	625	6.0	40	4688-14059
150	166	8	10	30	750	7.9	40	4688-14060

RECOMMENDED FOR

Vacuum and pressure hose (SD) for transfer of fuel oil and other petroleum based products in home delivery, commercial and industrial service or in low pressure return lines. Transfer of refined fuels (commercial gasoline and diesel fuel), oils and other petroleum products. Ideal for oilfield service truck use. Service life of transfer hoses can be extended by draining hoses after use. Max 50% aromatic content.

TUBE

Black NBR rubber, smooth and oil resistant

REINFORCEMENT

High tensile synthetic textile cord, steel wire helix, two crossing anti-static wires

COVER

CR rubber, black, smooth with cloth impression, good resistant to weather and abrasion, chemical and oil resistance

TEMPERATURE

-30°C to +100°C

BURST PRESSURE

> 30 bar

ELECTRICALLY CONDUCTIVE

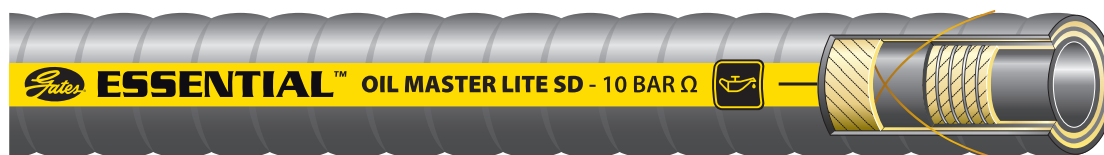
R < 10⁶ Ohm

BRANDING TRANSFER LABEL

ESSENTIAL™ OIL MASTER SD - 10 BAR Ω



ESSENTIAL™ OIL MASTER LITE SD



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
19	29	5	10	30	95	0.5	40	4688-14101
25	35	5	10	30	125	0.6	40	4688-14102
32	42	5	10	30	160	0.9	40	4688-14103
38	48	5	10	30	190	1.0	40	4688-14104
51	61	5	10	30	255	1.4	40	4688-14105
65	77	6	10	30	325	2.3	40	4688-14106
76	88	6	10	30	380	2.7	40	4688-14107
90	104	7	10	30	450	3.5	40	4688-14108
100	114	7	10	30	500	3.9	40	4688-14109
127	143	8	10	30	635	6.1	40	4688-14110
152	168	8	10	30	760	7.9	40	4688-14111

RECOMMENDED FOR

Very flexible corrugated vacuum and pressure hose (SD) for transfer of fuel oil and other petroleum based products in home delivery, commercial and industrial service or in low pressure return lines. Transfer of refined fuels (commercial gasoline and diesel fuel), oils and other petroleum products. Ideal for oilfield service truck use. Service life of transfer hoses can be extended by draining hoses after use. Max 50% aromatic content.

TUBE

Black NBR rubber, smooth and oil resistant

REINFORCEMENT

High tensile synthetic textile cord, steel wire helix and two crossing anti-static wires.

COVER

CR rubber, black, corrugated with cloth impression, good resistant to weather and abrasion, chemical and oil resistance.

TEMPERATURE

-30°C to 100°C

BURST PRESSURE

> 30 bar

ELECTRICALLY CONDUCTIVE

$R < 10^6 \text{ Ohm}$

BRANDING TRANSFER LABEL

ESSENTIAL™ OIL MASTER LITE SD - 10 BAR Ω





Petroleum Transfer Hoses

Longhorn® AF (Alternative Fuel)



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
25.4	38.1	6.35	10	40	76	0.9	30.5	4688-1700
31.8	44.5	6.35	10	40	102	1.0	30.5	4688-1702
38.1	51.3	6.6	10	40	102	1.3	30.5	4688-1704
50.8	64	6.6	10	40	152	1.6	30.5	4688-1706
63.5	77.5	7	10	40	203	2.2	30.5	4688-1708
76.2	89.7	6.75	10	40	229	2.8	30.5	4688-1710
101.6	116.1	7.25	10	40	305	3.8	30.5	4688-1712

RECOMMENDED FOR

Vacuum and pressure hose (SD) for alternative fuels such as bio-diesel, bio-diesel blends, ethanol and ethanol blends. It is ideal for tank truck, terminal loading and in-plant operations.

TUBE

Black NBR

REINFORCEMENT

High tensile synthetic textile cord, steel wire helix

COVER

Modified nitrile rubber, black

TEMPERATURE

-34°C to +82°C Warning: do not convey fuels over 49°C

BURST PRESSURE

> 30 bar

ELECTRICALLY CONDUCTIVE

$R < 10^6$ Ohm

STANDARDS

Tube: RMA (Class A) High oil resistance

Cover: - Meets MSHA 30 CFR 18.65. Flame resistance

- RMA (Class A) High oil resistance

BRANDING TRANSFER LABEL

GATES® LONGHORN® AF 150PSI (1.03 MPa) WP FLAME Resistance MSHA IC-4116 MADE IN U.S.A.



ESSENTIAL™ REEL MASTER D



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
25	35	5	16	48	175	0.7	61	4110-12051
32	43	5.5	16	48	224	0.8	61	4110-12052
35	46	5.5	16	48	245	0.9	61	4110-12053
38	50	6	16	48	266	1.1	61	4110-12054
40	52	6	16	48	280	1.1	61	4110-12055
51	65	7	16	48	357	1.9	61	4110-12056

RECOMMENDED FOR

Pressure domestic fuel reel hose for tank trucks and oil delivery in heavy duty reeling applications. Also suitable for tank cleaning.

TUBE

Black NBR rubber, smooth and oil resistance

REINFORCEMENT

High tensile synthetic textile cord and two crossing anti-static wires

COVER

CR rubber, black, smooth with cloth impression, good resistance to weather and abrasion, chemical and oil resistance

TEMPERATURE

-30°C to +70°C

BURST PRESSURE

48 Bar

ELECTRICALLY CONDUCTIVE

$R < 10^6 \text{ Ohm}$

STANDARDS

EN 1360, EN 1761

BRANDING TRANSFER LABEL

ESSENTIAL™ REEL MASTER D - 10 BAR Ω





Petroleum Transfer Hoses

ESSENTIAL™ BUNKER MASTER D



								
mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
76	94	9	16	48	532	3.0	40	4110-12101
102	120	9	16	48	714	4.0	40	4110-12102
127	145	9	16	48	889	4.9	40	4110-12103
152	170	9	16	48	1064	5.0	40	4110-12104
203	223	10	16	48	1421	8.5	40	4110-12105
254	276	11	16	48	1778	11.5	40	4110-12106

RECOMMENDED FOR

Ship-to-shore oil bunker delivery hose for crude oil and liquid petroleum products with a maximum of 50 % aromatics content, for tankers and bunkering vessels.

TUBE

Black NBR rubber, smooth and oil resistance

REINFORCEMENT

High tensile synthetic textile cord, two crossing anti-static wires

COVER

CR rubber, black, smooth with cloth impression, good resistance to weather and abrasion, chemical and oil resistance

TEMPERATURE

-30°C to +90°C

BURST PRESSURE

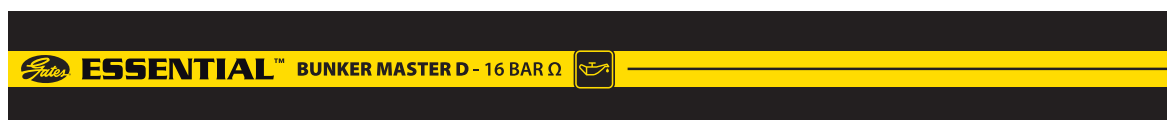
48 Bar

ELECTRICALLY CONDUCTIVE

$R < 10^6 \text{ Ohm}$

BRANDING TRANSFER LABEL

ESSENTIAL™ BUNKER MASTER D - 16 BAR Ω



PREMIUM™ GP MASTER



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
6	14	4	25	80	50	0.17	60	3205-0170
8	16	4	25	80	50	0.21	60	3205-0171
10	18	4	25	80	75	0.24	60	3205-0172
13	21	4	25	80	100	0.3	60	3205-0173
16	25	4.5	25	80	125	0.4	60	3205-0174
19	29	5	25	80	125	0.54	60	3205-0175
25	37	6	25	80	200	0.83	60	3205-0176

RECOMMENDED FOR

Applications requiring a premium grade spiraled hose with excellent flexibility and maximum resistance to compressor air, water, gasoline, fuel oil (to +48°C) and lubricant oils.

TUBE

Black NBR, smooth, conductive

REINFORCEMENT

Textile layers, spiraled

COVER

Modified NBR rubber, 1 extruded yellow longitudinal stripe

TEMPERATURE

-40°C to +95°C

BURST PRESSURE

> 3.15 x WP

ELECTRICALLY CONDUCTIVE

$R < 10^6 \text{ Ohm}$

INKJET LABEL

PREMIUM™ GP MASTER - 25 BAR AIR_WATER_OIL - NBR - DN.. Ω



PREMIUM™ GP MASTER - 25 BAR - AIR_WATER_OIL - NBR - DN 6 Ω



Petroleum Transfer Hoses

PREMIUM™ TAR MASTER SD



								
mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
25	39	7	18	72	175	1.1	40	4688-14151
32	47	7.5	18	72	224	1.4	40	4688-14152
38	54	8	18	72	266	1.8	40	4688-14153
51	67	8	18	72	357	2.5	40	4688-14154
63	81	9	14	56	441	3.4	40	4688-14155
76	95	9.5	14	56	532	4.2	40	4688-14156
102	123	10.5	14	56	714	6.1	40	4688-14157

RECOMMENDED FOR

Premium hose designed for the bulk transfer and delivery of hot petroleum products, such as tar, asphalt, and oil. This hose is designed for suction and discharge.

TUBE

Special NBR compound

REINFORCEMENT

High tensile synthetic textile cord, steel wire helix, static wire

COVER

CR based rubber, black, smooth with cloth impression, good resistance to weather and abrasion, chemical and oil resistance.

TEMPERATURE

Continuous to +160°C, intermittent up to +180°C

BURST PRESSURE

4 x WP

ELECTRICALLY CONDUCTIVE

$R < 10^6 \text{ Ohm}$

BRANDING TRANSFER LABEL

PREMIUM™ TAR MASTER SD - HOT TAR & ASPHALT



SCORPION™ X-TREME



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
38.1	51.3	6.6	41	165.2	305	1.6	15.24	3618-0306
50.8	66.6	7.9	41	165.2	406	2.2	15.24	3618-0307
63.5	79.3	7.9	41	165.2	457	2.7	15.24	3618-0308
76.2	95.8	9.8	41	165.2	508	4.2	15.24	3618-0309
101.6	121.7	10.1	41	165.2	650	5.9	15.24	3618-0310

RECOMMENDED FOR

High pressure and high temperature air hose used on industrial, construction, pneumatic mining and drilling applications requiring a wire braided hose with extremely high temperature hot air and hot oil resistance.

TUBE

Specially compounded elastomer HNBR

REINFORCEMENT

Braided, high tensile steel wire

COVER

Chlorinated Polyethylene CPE, all sizes perforated.

TEMPERATURE

-40°C to +149°C

BURST PRESSURE

41 Bar

STANDARDS

RMA (Class A) High oil resistance

BRANDING TRANSFER LABEL

GATES® SCORPION™ X-TREME HI-TEMP AIR DRILL 600PSI (4.13 MPa) WP MADE IN USA"



INDUSTRIAL HOSE PRODUCTS



Steam Hoses





Steam Hoses

PREMIUM™ STEAM MASTER



								
mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
13	25	6	18	180	91	0.5	40	3605-12001
16	30	7	18	180	112	0.7	40	3605-12002
19	33	7	18	180	133	0.8	40	3605-12003
25	40	7.5	18	180	175	1.1	40	3605-12004
32	48	8	18	180	224	1.5	40	3605-12005
38	54	8	18	180	266	1.8	40	3605-12006
51	67	8	18	180	357	2.3	40	3605-12007

RECOMMENDED FOR

Premium steam hose for the transport of pressurized saturated steam at 210°C up to a max. 18 bar working pressure or pressurized hot water.

TUBE

Black EPDM, smooth, conductive

REINFORCEMENT

Two high tensile steel braids

COVER

EPDM rubber, smooth, black, all sizes are pinpricked. Extremely weather resistance cover

TEMPERATURE

up to +210°C

BURST PRESSURE

180 bar

ELECTRICALLY CONDUCTIVE

$R < 10^6 \text{ Ohm}$

STANDARDS

EN ISO 6134:2005-2A

BRANDING TRANSFER LABEL

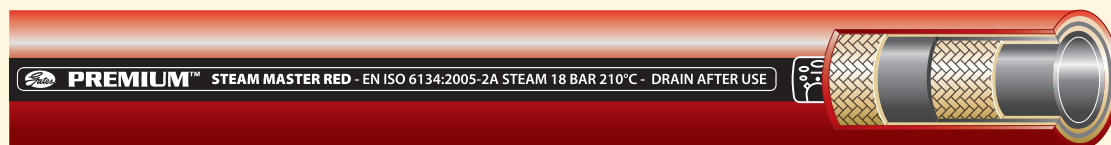
PREMIUM™ STEAM MASTER - EN ISO 6134:2005-2A STEAM 18 BAR 210°C Ω - DRAIN AFTER USE

BRANDING EMBOSSED LABEL

GATES PREMIUM™ STEAM MASTER - EN ISO 6134:2005-2A STEAM 18 BAR - DIAM mm - Ω - Q - year



PREMIUM™ STEAM MASTER RED



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
13	25	6	18	180	91	0.5	40	3602-12001
16	30	7	18	180	112	0.7	40	3602-12002
19	33	7	18	180	133	0.8	40	3602-12003
25	40	7.5	18	180	175	1.1	40	3602-12004
32	48	8	18	180	224	1.5	40	3602-12005
38	54	8	18	180	266	1.8	40	3602-12006
51	67	8	18	180	357	2.3	40	3602-12007

RECOMMENDED FOR

Premium steam hose for the transport of pressurized saturated steam at 210°C up to a max. 18 bar working pressure or pressurized hot water.

TUBE

Black EPDM, smooth, conductive

REINFORCEMENT

Two high tensile steel braids

COVER

EPDM rubber, smooth, red, all sizes are pinpricked. Extremely weather resistance cover

TEMPERATURE

up to +210°C

BURST PRESSURE

180 bar

ELECTRICALLY CONDUCTIVE

Liner $R < 10^6$ Ohm

STANDARDS

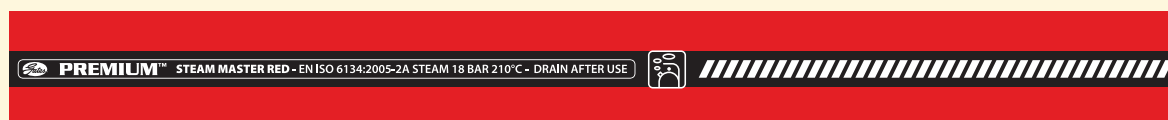
EN ISO 6134:2005-2A

BRANDING TRANSFER LABEL

PREMIUM™ STEAM MASTER RED - EN ISO 6134:2005-2A STEAM 18 BAR 210°C - DRAIN AFTER USE

BRANDING EMBOSSED LABEL

GATES PREMIUM™ STEAM MASTER RED - EN ISO 6134:2005-2A STEAM 18 BAR - DIAM mm - Ω - Q - year





Steam Hoses

PREMIUM™ HEATER MASTER



			 steam	 water					
mm	mm	mm	Bar	Bar	Bar	mm	Kg/m	m	REF.
13	25	6	6	20	60	91	0.5	40	3213-11001
16	30	7	6	20	60	112	0.6	40	3213-11002
19	33	7	6	20	60	133	0.8	40	3213-11003
25	40	7.5	6	20	60	175	0.9	40	3213-11004
32	48	8	6	20	60	224	1.2	40	3213-11005
38	54	8	6	20	60	266	1.4	40	3213-11006
51	67	8	6	20	60	357	1.8	40	3213-11007

RECOMMENDED FOR

Premium hot water (20 bar up to 90°C) delivery and steam hose up to 164°C, 6 bar working pressure in general industrial applications.

TUBE

Black EPDM, smooth

REINFORCEMENT

High tensile textile cord

COVER

EPDM rubber, smooth, black. Extremely weather resistance cover

TEMPERATURE

-20 °C to +164°C

BURST PRESSURE

60 Bar

ELECTRICALLY CONDUCTIVE

$R < 10^6$ Ohm

STANDARDS

Exceeds BS 5122/A2

BRANDING TRANSFER LABEL

PREMIUM™ HEATER MASTER - STEAM OPEN SYSTEM 6 BAR 164°C Ω



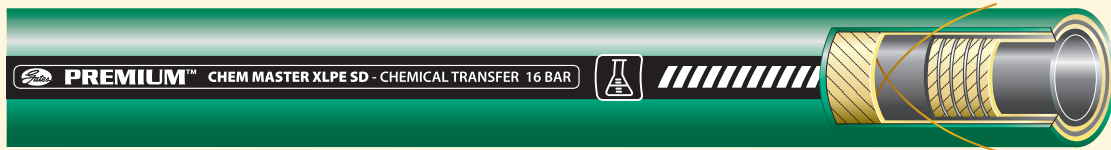
Acid-Chemical Hoses





Acid-Chemical Hoses

PREMIUM™ CHEM MASTER XLPE SD



								
mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
19	31	6	16	48	95	0.7	40	4695-13001
25	37	6	16	48	125	0.8	40	4695-13002
32	44	6	16	48	160	1.0	40	4695-13003
38	51	6.5	16	48	190	1.2	40	4695-13004
50	66	8	16	48	250	2.1	40	4695-13005
51	67	8	16	48	255	2.2	40	4695-13006
65	81	8	16	48	325	2.6	40	4695-13007
75	91	8	16	48	375	3.1	40	4695-13008
76	92	8	16	48	380	3.1	40	4695-13009
100	116	8	16	48	500	4.1	40	4695-13010

RECOMMENDED FOR

Premium hose for tank truck, barge, ship, or storage tank transfer applications of a variety of chemical products. The hose contains a wire helix for full suction capability, as well as for routing hoses through tight bends. A heavy duty suction and discharge hose (SD) for use with various acids and chemicals.

TUBE

XLPE, black smooth

REINFORCEMENT

High tensile synthetic textile cord, steel wire helix and crossing anti-static wires

COVER

EPDM rubber, smooth, green. Extremely weather resistance cover.

TEMPERATURE

-20°C to +65°C

BURST PRESSURE

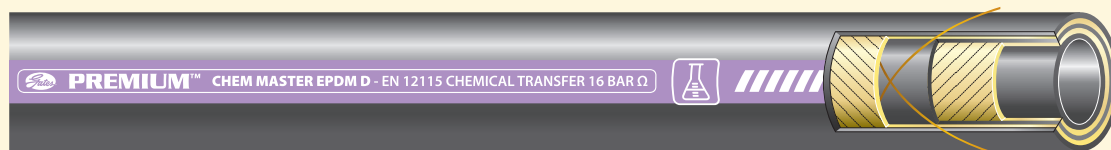
> 48 bar

BRANDING TRANSFER LABEL

PREMIUM™ CHEM MASTER XLPE SD - CHEMICAL TRANSFER 16 BAR



PREMIUM™ CHEM MASTER EPDM D



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
13	25	6	16	50	91	0.5	40	4696-11001
19	31	6	16	50	133	0.6	40	4696-11002
22	34	6	16	50	154	0.7	40	4696-11003
25	37	6	16	50	175	0.7	40	4696-11004
32	44	6	16	50	224	0.9	40	4696-11005
38	51	6.5	16	50	266	1.2	40	4696-11006
50	66	8	16	50	350	1.8	40	4696-11007
51	67	8	16	50	357	1.8	40	4696-11008
63	79	8	16	50	441	2.2	40	4696-11009
75	91	8	16	50	525	2.6	40	4696-11010
76	92	8	16	50	532	2.7	40	4696-11011
100	116	8	16	50	700	3.5	40	4696-11012
101.5	118	8	16	50	714	3.5	40	4696-11013

RECOMMENDED FOR

Premium delivery hose (D) for handling a variety of chemical products such as acids, alkalis, esters and ketones with a medium or low concentration. Tank truck, barge, ship, or storage tank transfer of a variety of mild chemical products.

TUBE

Black EPDM, smooth, conductive

REINFORCEMENT

High tensile synthetic textile cord with crossing anti-static wires

COVER

EPDM black, ozone and chemical resistance, conductive with cloth impression.

TEMPERATURE

-40°C to +95°C

BURST PRESSURE

> 50 Bar

ELECTRICALLY CONDUCTIVE

R < 10⁶ Ohm

STANDARDS

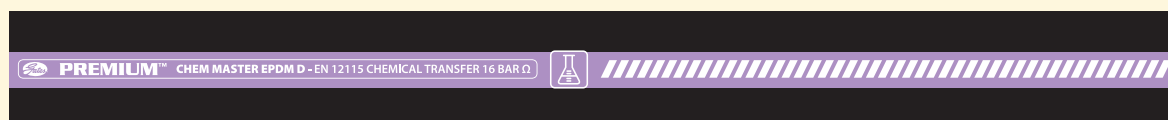
EN 12115

BRANDING TRANSFER LABEL

PREMIUM™ CHEM MASTER EPDM D - EN 12115 CHEMICAL TRANSFER 16 BAR Ω

BRANDING EMBOSSED LABEL

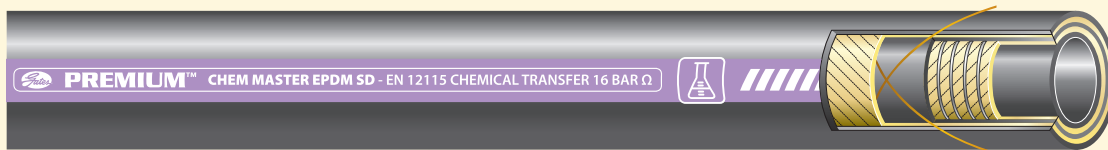
GATES PREMIUM™ CHEM MASTER EPDM D - EN 12115 - EPDM - DIAM .. - 16 BAR - Ω - Q - year





Acid-Chemical Hoses

PREMIUM™ CHEM MASTER EPDM SD



								
mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
19	31	6	16	48	95	0.7	40	4696-11051
25	37	6	16	48	125	0.9	40	4696-11052
32	44	6	16	48	160	1.0	40	4696-11053
38	51	6.5	16	48	190	1.3	40	4696-11054
50	66	8	16	48	250	2.2	40	4696-11055
51	67	8	16	48	255	2.2	40	4696-11056
63	79	8	16	48	315	2.8	40	4696-11057
75	91	8	16	48	375	3.2	40	4696-11058
76	92	8	16	48	380	3.3	40	4696-11059
100	116	8	16	48	500	4.3	40	4696-11060
101.5	118	8	16	48	508	4.3	40	4696-11061
150	172	11	16	48	750	9.0	40	4696-11062

RECOMMENDED FOR

Premium suction and discharge hose (SD) for handling a variety of chemical products such as acids, alkalis, esters and ketones with a medium or low concentration. Tank truck, barge, ship, or storage tank transfer of a variety of mild chemical products.

TUBE

Black EPDM, smooth, conductive

REINFORCEMENT

Braided, high tensile synthetic textile cord, steel wire helix with crossing anti-static wires

COVER

EPDM black, ozone and chemicals resistance, conductive with cloth impression

TEMPERATURE

-40°C to +95°C

BURST PRESSURE

> 48 Bar

ELECTRICALLY CONDUCTIVE

$R < 10^6 \text{ Ohm}$

STANDARDS

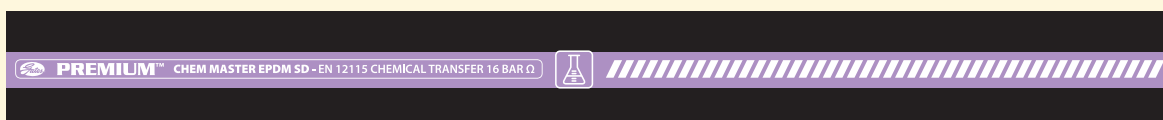
EN 12115

BRANDING TRANSFER LABEL

PREMIUM™ CHEM MASTER EPDM SD - EN 12115 CHEMICAL TRANSFER 16 BAR Ω

BRANDING EMBOSSED LABEL

GATES PREMIUM™ CHEM MASTER EPDM SD - EN 12115 - EPDM - DIAM .. - 16 BAR - Ω - Q - year



PREMIUM™ CHEM MASTER UHMWPE SD



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
13	23	5	16	50	65	0.4	40	4697-11001
19	31	6	16	50	95	0.7	40	4697-11002
25	37	6	16	50	125	0.8	40	4697-11003
32	44	6	16	50	160	1.0	40	4697-11004
38	51	6.5	16	50	190	1.2	40	4697-11005
50	66	8	16	50	250	2.1	40	4697-11006
51	67	8	16	50	255	2.2	40	4697-11007
63	79	8	16	50	315	2.6	40	4697-11008
75	91	8	16	50	375	3.1	40	4697-11009
100	116	8	16	50	500	4.1	40	4697-11010
101.5	118	8	16	50	508	4.2	40	4697-11011

RECOMMENDED FOR

Very universal suction and discharge hose (SD) capable of handling a wide spectrum of corrosive chemicals and acids. Tank truck, barge, ship, or storage tank transfer of a variety of chemical products. The hose contains a wire helix for full suction capability.

TUBE

UHMWPE, black, smooth and conductive

REINFORCEMENT

High tensile synthetic textile cord, steel wire helix and crossing anti-static wire

COVER

CR rubber, black, smooth with cloth impression, good resistance to weather and abrasion, chemical and oil resistance

TEMPERATURE

-20°C to +65°C

BURST PRESSURE

> 50 Bar

ELECTRICALLY CONDUCTIVE

$R < 10^6 \text{ Ohm}$

STANDARDS

EN 12115

BRANDING TRANSFER LABEL

PREMIUM™ CHEM MASTER UHMWPE SD - EN12115 CHEMICAL TRANSFER 16 BAR Ω

BRANDING EMBOSSED LABEL

GATES PREMIUM™ CHEM MASTER UHMWPE SD - EN 12115 - UHMWPE - DIAM .. 16 BAR - Ω – Q - year





Acid-Chemical Hoses

STALLION®



								
mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
19.1	32.8	6.9	13	55	102	0.8	30.5	4698-0011
25.4	39.6	7.1	13	55	127	1.0	30.5	4698-0012
38.1	52.1	7.0	13	55	203	1.4	30.5	4698-0013
50.8	64.8	7.0	13	55	229	1.8	30.5	4698-0014
63.5	78	7.3	13	55	305	2.2	30.5	4698-0015
76.2	91.2	7.5	13	55	457	2.7	30.5	4698-0016
101.6	118.4	8.4	13	55	610	4.1	30.5	4698-0017

RECOMMENDED FOR

Tank truck, barge, ship, or storage tank transfer of a variety of chemical products. Stallion has a wire helix for full suction capability. The tube stock (Teflon® or Neoflon®) has excellent chemical resistance and is backed by Gates Gatron™ for flex fatigue safety at the coupling. Stallion is designed for easy cleaning in a bath containing 10% (NaOH) @ 212°F (100°C). Cleaning in place (CIP) methods may be used. Applications include most basic chemicals which are building blocks for numerous chemicals used in a variety of industries. Compatible with commercially available Bio-Diesel fuels up to B-100.

TUBE

Type T (FEP) Teflon® or Neoflon®. White. Backed with Gatron™ (Modified XLPE)

REINFORCEMENT

Synthetic, high tensile textile with steel wire helix

COVER

Type P (EPDM). Blue corrugated with red spiral stripe

TEMPERATURE

-40°C to +149°C normal service. Stallion is designed to withstand fluid temperatures to +149°C, however the rating is dependent on the specific chemical conveyed.

BURST PRESSURE

55 Bar

BRANDING TRANSFER LABEL

GATES® Stallion® U.S. Pat. No. 5,647,400 Acid-Chemical Suction/Discharge 200 PSI (1.38MPa) WP Made In U.S.A. For your safety: Use Permanent Fittings Only"

*Teflon® is a Registered Trademark of DuPont.

**Neoflon® is a Registered Trademark of Daikin.



77B Paint Spray and chemical



mm	mm	mm	Bar	Bar	Kg/m	m / Reel	REF.
6.4	13.2	3.4	34.5	138	0.13	182.9-243.8m	3207-0290
7.9	15	3.6	34.5	138	0.16	182.9-243.8m	3207-0291
9.5	17	3.8	34.5	138	0.21	182.9-243.8m	3207-0292
12.7	22.1	4.7	51.7	206.8	0.34	182.9-243.8m	3207-0294
19.1	29.5	5.2	51.7	206.8	0.52	91.44-121.9m	3207-0296

RECOMMENDED FOR

Paint spray applications, as well as transfer of petroleum based products (aliphatic, aromatic and chlorinated hydrocarbon such as Toluene, Xylene, Benzene, gasoline and carbon tetrachloride). Reference Gates Chemical Resistance Table for proper hose selection. Compatible with commercially available Bio-Diesel fuels up to B-100. NOT RECOMMENDED FOR ACIDS OR USE IN HIGH PRESSURE PAINT SPRAY APPLICATIONS REQUIRING A STATIC CONDUCTIVE HOSE.

TUBE

Special flexible Nylon 11

REINFORCEMENT

Synthetic, high tensile textile cord

COVER

Neoprene, black

TEMPERATURE

-40°C to +66°C continuous service. NOTE: Contact Denver Product when conveying chemicals above +49°C

BURST PRESSURE

> 138 Bar

BRANDING TRANSFER LABEL

GATES® 77B PAINT SPRAY AND CHEMICAL 3/8" (9.5mm) 500 PSI (3.45MPa) WP Made In U.S.A."



GATES® 77B PAINT SPRAY AND CHEMICAL 3/4 INCH (19.1mm) 750 PSI (5.17MPa) W.P. MADE IN U.S.A.

Food & Beverage Hoses





Food & Beverage Hoses

PREMIUM™ DAIRY MASTER SD



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
32	44	6	10	30	160	1.0	40	3131-11001
38	50	6	10	30	190	1.2	40	3131-11002
40	52	6	10	30	200	1.3	40	3131-11003
45	59	7	10	30	225	1.5	40	3131-11004
51	65	7	10	30	255	2.0	40	3131-11005
63	77	7	10	30	315	2.4	40	3131-11006
76	90	7	10	30	380	3.1	40	3131-11007
102	118	8	10	30	510	4.8	40	3131-11008

RECOMMENDED FOR

Premium vacuum and pressure hose (SD) for food products. Tank truck, barge, ship, or storage tank transfer of a variety of food products such as animal fat, vegetable oil and other edible oils requiring FDA sanitary hose. Also suitable for ice cream and other dairy products.

TUBE

NBR based white food quality rubber, resistance to animal fats and vegetable oils

REINFORCEMENT

Synthetic, high tensile textile with steel wire helix

COVER

NBR based rubber, blue, resistance to animal fat and vegetable oils

TEMPERATURE

-30°C to +90°C, intermittent up to +130 °C/ 30 minutes for cleaning

BURST PRESSURE

> 30 Bar

STANDARDS

FDA, BfR, animal derived ingredient free

BRANDING TRANSFER LABEL

PREMIUM™ DAIRY MASTER SD - FOOD 10 BAR



PREMIUM™ DAIRY MASTER LITE SD



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
32	44	6	10	30	160	1.0	40	3131-11051
38	50	6	10	30	190	1.2	40	3131-11052
40	52	6	10	30	200	1.3	40	3131-11053
45	58	6.5	10	30	225	1.5	40	3131-11054
51	65	7	10	30	255	2.0	40	3131-11055
63	77	7	10	30	315	2.4	40	3131-11056
76	90	7	10	30	380	3.1	40	3131-11057
102	118	8	10	30	510	4.8	40	3131-11058

RECOMMENDED FOR

Very flexible corrugated vacuum and pressure hose (SD) for food products. Tank truck, barge, ship, or storage tank transfer of a variety of food products such as animal fat, vegetable oil and other edible oils requiring FDA sanitary hose. Also suitable for ice cream and other dairy products.

TUBE

NBR based white food quality rubber, resistance to animal fat and vegetable oils

REINFORCEMENT

Synthetic, high tensile textile with steel wire helix

COVER

NBR based rubber, blue, corrugated and resistance to animal fat and vegetable oils

TEMPERATURE

-30°C to +90°C, intermittent up to +130 °C/ 30 minutes for cleaning.

BURST PRESSURE

> 30 Bar

STANDARDS

FDA, BfR, animal derived ingredient free

BRANDING TRANSFER LABEL

PREMIUM™ DAIRY MASTER LITE SD - FOOD 10 BAR





Food & Beverage Hoses

PREMIUM™ DAIRY MASTER CRUSH SD



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
32	44	6	10	30	160	0.9	40	3131-11101
38	50	6	10	30	190	1.1	40	3131-11102
40	52	6	10	30	200	1.2	40	3131-11103
45	58	6.5	10	30	225	1.4	40	3131-11104
51	65	7	10	30	255	1.9	40	3131-11105
63	77	7	10	30	315	2.3	40	3131-11106
76	90	7	10	30	380	2.9	40	3131-11107
102	118	8	10	30	510	4.6	40	3131-11108

RECOMMENDED FOR

Premium crush resistance vacuum and pressure hose (SD) for food products. Tank truck, barge, ship, or storage tank transfer of a variety of food products such as animal fat, vegetable oil and other edible oils requiring FDA sanitary hose. Also suitable for ice cream and other dairy products.

TUBE

NBR based white food quality rubber, resistance to animal fat and vegetable oils

REINFORCEMENT

Synthetic, high tensile textile with plastic wire helix, crush resistance

COVER

NBR based rubber, blue, corrugated and resistance to animal fat and vegetable oils

TEMPERATURE

-30°C to +90°C, intermittent up to +130 °C/ 30 minutes for cleaning

BURST PRESSURE

> 30 Bar

STANDARDS

FDA, BfR, animal derived ingredient free

BRANDING TRANSFER LABEL

PREMIUM™ DAIRY MASTER CRUSH SD - FOOD 10 BAR



PREMIUM™ WASHDOWN MASTER



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
10	18	4	6	60	70	0.2	40	3213-11051
13	23	5	6	60	91	0.4	40	3213-11052
16	26	5	6	60	112	0.4	40	3213-11053
19	31	6	6	60	133	0.6	40	3213-11054
25	37	6	6	60	175	0.7	40	3213-11055
32	45	6.5	6	60	224	0.9	40	3213-11056
38	52	7	6	60	266	1.2	40	3213-11057
51	65	7	6	60	357	1.5	40	3213-11058

RECOMMENDED FOR

Premium hot water and open steam system washdown hose for the food and dairy industry. Used for paper mill, food handling or processing plant washdown service requiring hose with a non-marking cover.

TUBE

EPDM based white, smooth

REINFORCEMENT

High tensile textile cords

COVER

EPDM based rubber, blue

TEMPERATURE

-30°C to +164°C

BURST PRESSURE

> 60 Bar

STANDARDS

FDA, animal derived ingredient free

BRANDING TRANSFER LABEL

PREMIUM™ WASHDOWN MASTER - FDA 6 BAR - STEAM OPEN SYSTEM





Food & Beverage Hoses

PREMIUM™ MILK MASTER SD



								
mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
38	48	5	6	18	190	1.0	40	3131-11151
40	50	5	6	18	200	1.0	40	3131-11152
45	55	5	6	18	225	1.1	40	3131-11153
51	62	5.5	6	18	255	1.5	40	3131-11154
63	75	6	6	18	315	1.9	40	3131-11155
70	82	6	6	18	350	2.3	40	3131-11156
76	90	7	6	18	380	2.9	40	3131-11157
102	118	8	6	18	510	4.2	40	3131-11158

RECOMMENDED FOR

Premium hose construction for filling and discharge in milk tanker applications.

TUBE

NR based white food quality rubber

REINFORCEMENT

Synthetic, high tensile textile, 2 steel wire helix

COVER

NR based rubber, blue.

TEMPERATURE

-30°C to +70°C, intermittent up to +120 °C/ 20 minutes for cleaning

BURST PRESSURE

> 18 Bar

STANDARDS

FDA, BfR, animal derived ingredient free

BRANDING TRANSFER LABEL

PREMIUM™ MILK MASTER SD - FOOD 6 BAR



PREMIUM™ BEVERAGE MASTER D



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
13	21	4	16	48	91	0.3	40	3132-16001
19	29	5	16	48	133	0.5	40	3132-16002
25	37	6	16	48	175	0.7	40	3132-16003
32	44	6	16	48	224	0.9	40	3132-16004
38	51	6.5	16	48	266	1.1	40	3132-16005
40	53	6.5	16	48	280	1.2	40	3132-16006
51	65	7	16	48	357	1.6	40	3132-16007
63	77	7	16	48	441	1.9	40	3132-16008
76	92	8	16	48	532	2.6	40	3132-16009
80	96	8	16	48	560	2.8	40	3132-16010
102	118	8	16	48	714	3.3	40	3132-16011

RECOMMENDED FOR

Premium pressure hose (D) for beer, ale, wines, alcohols (40%) and alcoholic beverages or liquid food. Transfer of milk, juice, soft drinks, pharmaceuticals, cosmetics or water-based products requiring an FDA sanitary hose.

TUBE

CR/NR based white food quality rubber, oil and fat resistance (max.40%), odor- and tasteless

REINFORCEMENT

Synthetic, high tensile textile

COVER

EPDM red, ozone and chemicals resistance with cloth impression.

TEMPERATURE

-30°C to +90°C intermittent up to +130 °C/ 30 minutes for cleaning.

BURST PRESSURE

> 30 Bar

STANDARDS

FDA and BfR , ADI-free.

BRANDING TRANSFER LABEL

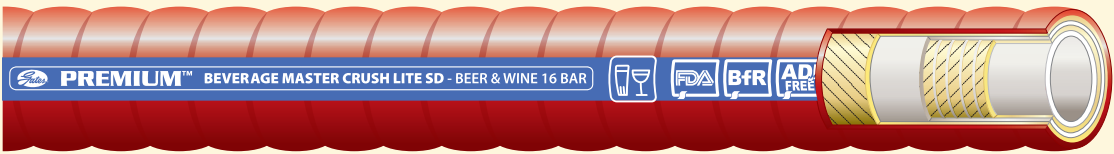
PREMIUM™ BEVERAGE MASTER D - BEER WINE 16 BAR





Food & Beverage Hoses

PREMIUM™ BEVERAGE MASTER CRUSH LITE SD



								
mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
32	44	6	16	48	176	0.9	40	3132-16051
38	50	6	16	48	209	1.1	40	3132-16052
51	65	7	16	48	281	1.8	40	3132-16053
63	78	7.5	16	48	347	2.3	40	3132-16054
76	92	8	16	48	418	3.1	40	3132-16055
102	120	9	16	48	561	4.8	40	3132-16056

RECOMMENDED FOR

Premium corrugated and crush resistance vacuum and pressure hose (SD) for beer, ale, wines, alcohols (40%) and alcoholic beverages or liquid food. Transfer of milk, juice, soft drinks, pharmaceuticals, cosmetics or water-based products requiring an FDA hose.

TUBE

CR/NR based white food quality rubber, oil and fat resistance (max.40%), odor- and tasteless

REINFORCEMENT

Synthetic, high tensile textile, nylon helix, crush resistance

COVER

EPDM red, ozone and chemicals resistance with cloth impression, corrugated

TEMPERATURE

-30°C to +90°C, intermittent up to +130 °C/ 30 minutes for cleaning.

BURST PRESSURE

> 30 Bar

STANDARDS

FDA and BfR, ADI-Free

BRANDING TRANSFER LABEL

PREMIUM™ BEVERAGE MASTER CRUSH LITE SD - BEER WINE 16 BAR



INDUSTRIAL HOSE PRODUCTS



Water & Air Hoses





Water & Air Hoses

ESSENTIAL™ WATER MASTER D



								
mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
25	35	5	10	30	175	0.6	40	3137-12001
25	35	5	10	30	175	0.6	61*	3137-12002
32	42	5	10	30	224	0.7	40	3137-12003
32	42	5	10	30	224	0.7	61*	3137-12004
38	48	5	10	30	266	0.9	40	3137-12005
51	63	6	10	30	357	1.4	40	3137-12006
51	63	6	10	30	357	1.4	61*	3137-12007
63	76	6.5	10	30	441	1.8	40	3137-12008
63	76	6.5	10	30	441	1.8	61*	3137-12009
76	89	6.5	10	30	532	2.2	40	3137-12010
102	116	7	10	30	714	3.0	40	3137-12011
102	116	7	10	30	714	3.0	61*	3137-12012
127	142	7.5	10	30	889	4.0	40	3137-12013
152	169	8.5	10	30	1064	5.5	40	3137-12014
203	224	10.5	10	30	1421	9.5	40	3137-12015

* 61m coils are made to order

RECOMMENDED FOR

Pressure hose (D) for water, waste water, sea water, mud, slurry. Water discharge in heavy duty service requiring a compact, rugged and lightweight hose.

TUBE

Black EPDM, smooth

REINFORCEMENT

Synthetic, high tensile textile cord

COVER

EPDM rubber, black, good weather and aging resistance

TEMPERATURE

-35°C to +80°C

BURST PRESSURE

> 30 bar

BRANDING TRANSFER LABEL

ESSENTIAL™ WATER MASTER D - 10 BAR



ESSENTIAL™ WATER MASTER SD



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
25	35	5	10	30	125	0.7	40	4686-12001
25	35	5	10	30	125	0.7	61*	4686-12002
32	42	5	10	30	160	0.9	40	4686-12003
32	42	5	10	30	160	0.9	61*	4686-12004
38	48	5	10	30	190	1.1	40	4686-12005
38	48	5	10	30	190	1.1	61*	4686-12006
51	63	6	10	30	255	1.6	40	4686-12007
51	63	6	10	30	255	1.6	61*	4686-12008
63	76	6.5	10	30	315	2.3	40	4686-12009
63	76	6.5	10	30	315	2.3	61*	4686-12010
76	89	6.5	10	30	380	2.8	40	4686-12011
76	89	6.5	10	30	380	2.8	61*	4686-12012
102	116	7	10	30	510	3.9	40	4686-12013
102	116	7	10	30	510	3.9	61*	4686-12014
127	142	7.5	10	30	635	5.7	40	4686-12015
152	169	8.5	10	30	760	8.0	40	4686-12016
203	224	10.5	10	30	1015	12.9	40	4686-12017

* 61m coils are made to order

RECOMMENDED FOR

Vacuum and pressure hose (SD) for water, waste water, sea water, mud, slurry. Water suction in heavy duty service requiring a compact, rugged and lightweight hose.

TUBE

Black EPDM, smooth

REINFORCEMENT

Synthetic, high tensile textile with steel wire helix

COVER

EPDM rubber, black, good weather and aging resistance

TEMPERATURE

-35°C to +80°C

BURST PRESSURE

> 30 bar

BRANDING TRANSFER LABEL

ESSENTIAL™ WATER MASTER SD - 10 BAR





Water & Air Hoses

PREMIUM™ MULTI MASTER



								
mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
6	13	3.5	20	80	50	0.14	100	3204-1880
8	15	3.5	20	80	50	0.18	100	3204-1881
10	17	3.5	20	80	75	0.21	100	3204-1882
13	21	4	20	80	100	0.29	100	3204-1883
16	25	4.5	20	80	125	0.40	100	3204-1884
19	29	5	20	80	125	0.53	100	3204-1885
19	29	5	20	80	125	0.53	50	3204-1886
25	37	6	20	80	200	0.83	50	3204-1887
32	44	6	20	70	250	0.99	50	3204-1888
38	50	6	20	70	300	1.15	50	3204-1889

RECOMMENDED FOR

Premium multi-purpose hose for air and water applications requiring maximum flexibility in any industry, including mining, construction, agriculture, vehicle repair and in-plant operations. Outstanding resistance to heat and ozone. Suitable for light agricultural spraying, such as dilute solutions of herbicides.

TUBE

Black EPDM, smooth

REINFORCEMENT

Textile layers, spiraled

COVER

EPDM rubber, smooth with 1 blue extruded longitudinal stripe

TEMPERATURE

-40°C to +100°C

BURST PRESSURE

> 3.15 x WP

ELECTRICALLY CONDUCTIVE

R < 10⁶ Ohm

INKJET LABEL

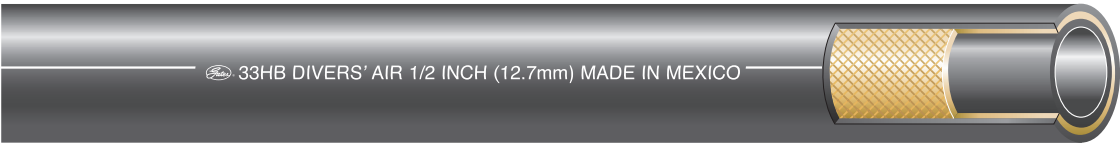
PREMIUM™ MULTI MASTER - 20 BAR - AIR_WATER - EPDM - DN.. Ω



PREMIUM™ MULTI MASTER - 20 BAR - AIR_WATER - EPDM - DN 6 Ω

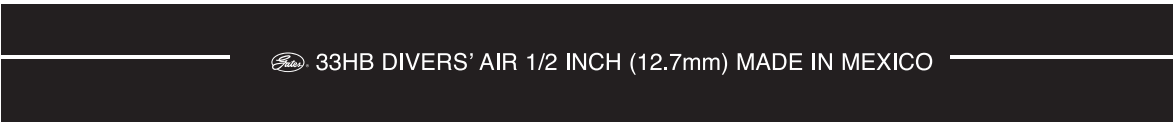


33HB Divers' Air



								
mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
9.5	19.1	4.8	77.6	310	102	0.3	182.9-213.1	3333-0015
9.5	19.1	4.8	77.6	310	102	0.3	304.8-Plus m	3333-0017
12.7	23.9	5.6	69	276	127	0.4	15.24-91.14	3333-0038
12.7	23.9	5.6	69	276	127	0.4	304.8-Plus m	3333-0035

RECOMMENDED FOR	Handling mixtures of oxygen, helium and nitrogen gases customarily used in diving applications as air breathing hose. The kink resistance hose is designed for extra long wear under normal operating use.
TUBE	NBR black
REINFORCEMENT	Braided, high tensile synthetic textile cord
COVER	Neoprene, black. All sizes are perforated
TEMPERATURE	-40°C to +49°C continuous service
STANDARDS	Meets MIL-H-2815G Section 3.12.2 off-gassing for air breathing applications, especially diving.
BRANDING TRANSFER LABEL	GATES® 33HB DIVERS' AIR 3/8 INCH (9.5mm) MADE IN U.S.A.'



INDUSTRIAL HOSE PRODUCTS



Material Handling Hoses





Material Handling Hoses

ESSENTIAL™ SANDBLAST MASTER D



								
mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
19	34	7.5	12	48	133	0.8	40	4129-11001
25	40	7.5	12	48	175	1.0	40	4129-11002
32	48	8	12	48	224	1.2	40	4129-11003
38	56	9	12	48	266	1.5	40	4129-11004

RECOMMENDED FOR

Hose for sandblasting of metal castings, steel, stone, sand and cement wherever abrasive materials are carried at a high velocity.

TUBE

NR/BR based, black, anti-static

REINFORCEMENT

High tensile synthetic textile cord

COVER

NR/BR based, anti-static, resistance to weather and abrasion.

TEMPERATURE

-40°C to +75°C

BURST PRESSURE

> 48 bar

ELECTRICALLY CONDUCTIVE

$R < 10^6 \text{ Ohm}$

STANDARDS

DIN 53516: ~55mm³

BRANDING TRANSFER LABEL

ESSENTIAL™ SANDBLAST MASTER D - 12 BAR



ESSENTIAL™ CEMENT MASTER D



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
51	65	7	8	24	357	1.6	40	4691-16001
63	79	8	8	24	441	2.2	40	4691-16002
76	94	9	8	24	532	2.9	40	4691-16003
80	98	9	8	24	560	3.1	40	4691-16004
90	110	10	8	24	630	3.8	40	4691-16005
102	122	10	8	24	714	4.1	40	4691-16006
110	130	10	8	24	770	4.4	40	4691-16007

RECOMMENDED FOR

Pressure hose for pneumatic transport of dry cement, slurries, dust, limestone, wood chips, coal, sand, gravel, ground slate, asphalt roofing chips, metal shavings. Contains a static-conducting black rubber in the tube and a ground wire in the hose wall for static charge dissipation.

TUBE

Black, anti-static NR/BR based rubber

REINFORCEMENT

High tensile synthetic textile cord, static wire

COVER

Black, anti-static NR/SBR based rubber, resistance to weather and abrasion

TEMPERATURE

-20°C to +80°C

BURST PRESSURE

> 24 bar

ELECTRICALLY CONDUCTIVE

$R < 10^6 \text{ Ohm}$

STANDARDS

DIN 53516

BRANDING TRANSFER LABEL

ESSENTIAL™ CEMENT MASTER D - 8 BAR





Material Handling Hoses

ESSENTIAL™ CEMENT MASTER SD



								
mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
51	67	8	8	24	255	2.2	40	4691-16051
63	81	9	8	24	315	3.0	40	4691-16052
76	96	10	8	24	380	4.0	40	4691-16053
80	100	10	8	24	400	4.2	40	4691-16054
90	110	10	8	24	450	4.6	40	4691-16055
102	122	10	8	24	510	5.3	40	4691-16056
110	132	11	8	24	550	6.5	40	4691-16057
127	149	11	8	24	635	8.0	40	4691-16058
152	175	11.5	8	24	760	9.7	40	4691-16059
203	228	12.5	8	24	1015	14.8	40	4691-16060

RECOMMENDED FOR

Vacuum and pressure hose for pneumatic transport of dry cement, slurries, dust, limestone, wood chips, coal, sand, gravel, ground slate, asphalt roofing chips, metal shavings. Contains a static-conducting black rubber in the tube and a ground wire in the hose wall for static charge dissipation.

TUBE

Black, anti-static NR/BR based rubber

REINFORCEMENT

High tensile synthetic textile cord, steel wire helix, static wires

COVER

Black, anti-static NR/SBR based rubber, resistance to weather and abrasion

TEMPERATURE

-20°C to +80°C

BURST PRESSURE

> 24 bar

ELECTRICALLY CONDUCTIVE

$R < 10^6 \text{ Ohm}$

STANDARDS

DIN 53516

BRANDING TRANSFER LABEL

ESSENTIAL™ CEMENT MASTER SD - 8 BAR



ESSENTIAL™ SILO MASTER D



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
51	65	7	8	24	357	1.5	40	4693-13001
63	81	9	8	24	441	2.4	40	4693-13002
76	96	10	8	24	532	3.1	40	4693-13003
80	100	10	8	24	560	3.3	40	4693-13004
90	110	10	8	24	630	3.7	40	4693-13005
102	122	10	8	24	714	3.9	40	4693-13006
110	132	11	8	24	770	4.5	40	4693-13007

RECOMMENDED FOR

Pressure hose for pneumatic transport of abrasive bulk food materials such as plastic granules, grain and sugar.

TUBE

White, NR/BR based rubber

REINFORCEMENT

High tensile synthetic textile cord, static wire

COVER

Black, anti-static NR/BR based rubber, resistance to weather and abrasion

TEMPERATURE

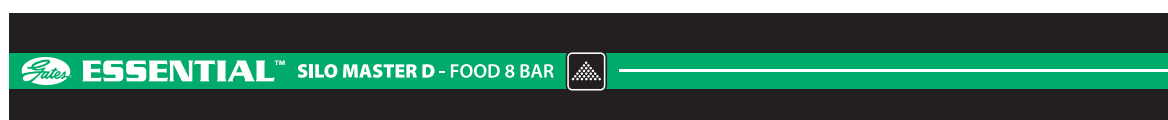
-20°C to +80°C

BURST PRESSURE

> 24 bar

BRANDING TRANSFER LABEL

ESSENTIAL™ SILO MASTER D - FOOD 8 BAR





Material Handling Hoses

ESSENTIAL™ SILO MASTER SD



								
mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
51	67	8	8	24	204	2.1	40	4693-13051
63	81	9	8	24	252	2.8	40	4693-13052
76	96	10	8	24	304	3.7	40	4693-13053
80	100	10	8	24	320	3.8	40	4693-13054
90	110	10	8	24	360	4.3	40	4693-13055
102	122	10	8	24	408	5.2	40	4693-13056
110	132	11	8	24	440	6.2	40	4693-13057
127	149	11	8	24	508	7.4	40	4693-13058
152	175	11.5	8	24	608	9.6	40	4693-13059
203	228	12.5	8	24	812	14.0	40	4693-13060

RECOMMENDED FOR

Vacuum and pressure hose for pneumatic transport of abrasive materials bulk food such as plastic granules, grain and sugar.

TUBE

White, NR/BR based rubber

REINFORCEMENT

High tensile synthetic textile cord, steel wire helix, static wire

COVER

Black, NR/BR based rubber, resistance to weather and abrasion

TEMPERATURE

-20°C to +80°C

BURST PRESSURE

> 24 bar

BRANDING TRANSFER LABEL

ESSENTIAL™ SILO MASTER SD - FOOD 8 BAR



ESSENTIAL™ CONCRETE MASTER D



mm	mm	mm	Bar	Bar	mm	Kg/m	m	REF.
19	31	6	40	120	133	0.5	40	4129-11051
25	39	7	40	120	175	0.8	40	4129-11052
32	47	7.5	40	120	224	1.0	40	4129-11053
35	50	7.5	40	120	245	1.1	40	4129-11054
38	54	8	40	120	266	1.3	40	4129-11055
50	68	9	40	120	350	1.9	40	4129-11056
63	83	10	40	120	441	2.7	40	4129-11057

RECOMMENDED FOR

Concrete pump hose for abrasive substances such as concrete mortar, cement, plaster, grout and cement applications, handling a multitude of materials being pumped to concrete structures, tunnel faces, swimming pools.

TUBE

Black, anti-static NR/BR/SBR based rubber

REINFORCEMENT

High tensile synthetic textile cord

COVER

Black, anti-static NR/SBR based rubber, resistance to weather and abrasion.

TEMPERATURE

-20°C to +70°C

BURST PRESSURE

> 120 bar

ELECTRICALLY CONDUCTIVE

$R < 10^6 \text{ Ohm}$

STANDARDS

DIN 53516: ~70mm³

BRANDING TRANSFER LABEL

ESSENTIAL™ CONCRETE MASTER D - 40 BAR





Terms and conditions of sale

1. Preliminary

- (a) All rates and prices quoted, all Goods supplied and all orders received by Gates are quoted, supplied and received subject to the following conditions (including this condition) which shall form part of any contract ("the Contract") between Gates and the Buyer for the sale to the Buyer of the Goods.
- (b) The provisions of the Contract constitute the entire agreement between Gates and the Buyer. No reliance is to be made by the Buyer on any representation or warranty not contained in the Contract.
- (c) In these conditions:
 - Gates See overview (1) following the present Terms & Conditions of Sale
 - Buyer means the person, firm or company which accepts a quotation of Gates for the sale of the Goods or whose order for the Goods is accepted by Gates
 - Goods means the Goods which are the subject of the Contract and shall include, where the context so admits, any services provided by Gates
 - Order means the order placed by the Buyer for the supply of the Goods to Gates or to Gates' agent
- (d) No variation of or addition to these conditions shall be effective unless agreed in writing by Gates; in particular these conditions shall, unless otherwise agreed in writing by the Managing Director or Company Secretary of Gates, prevail over any standard conditions of the Buyer and the fact that such standard conditions may be included or referred to in any writing which forms part of the Contract shall not of itself be indicative of such Agreement.
- (e) No cancellation or change in any Order which has been accepted by Gates can be made by the Buyer without the prior written agreement of Gates.

2. Risk

The risk of loss or destruction of, or damage to, the Goods shall pass from Gates to the Buyer at the time of delivery or at such other time as is agreed in writing by the parties. If the Buyer wrongfully fails to take delivery of the Goods, risk shall pass at the time when Gates has tendered delivery of the Goods.

3. Title

- (a) Property in the Goods shall not pass to the Buyer until payment has been made in full for the Goods.
- (b) Payment shall not be treated as having been made until any cheque, bill of exchange or other instrument of payment given by the Buyer has been met on presentation or otherwise honoured in accordance with its term.
- (c) Until property in the Goods passes the Buyer shall so far as possible store the Goods or ensure that any third party who may be in the possession of the Goods shall store the Goods in such a way that they are identifiable as the property of Gates and separate from all other Goods in the possession of the Buyer or such third party.
- (d) Until property in the Goods passes, the Buyer shall keep the Goods free from any lien, charge or encumbrance and Gates may at any time require the Goods to be returned to it by the Buyer. If such requirement is not met within seven days Gates shall have such rights of re-possession of the Goods as are permissible under the laws of the country where the Goods are located.

4. Specification

Gates reserves the right to make any changes in the specification of the Goods which are required to conform with any applicable safety or other statutory requirements.

5. Price of the Goods

- (a) Subject to sub-clause (b) hereof, the price of the Goods shall be the price ruling at the date of delivery. Any offers by Gates are valid for thirty days only or until earlier acceptance by the Buyer.
- (b) Prices quoted include standard packaging.
- (c) Within the United Kingdom goods are supplied ex works unless otherwise agreed in writing between the parties.
- (d) All exports are supplied on an F.O.B. basis unless otherwise agreed in writing between the parties.



- (e) Gates reserves the right, by giving notice to the Buyer at any time before delivery, to increase the price of the Goods to reflect any increase in the cost to Gates which is due to any factor beyond the control of Gates (such as, without limitation, any foreign exchange fluctuation, currency regulation, alteration of duties, significant increase in the cost of labour, materials or other costs of manufacture), any change in delivery dates, quantities or specifications for the goods which is requested by the Buyer, or any delay caused by any instructions of the Buyer or failure of the Buyer to give Gates adequate information or instructions.

6. Payment and Accounts

- (a) Any credit terms or settlement discounts to which the Buyer is entitled are shown on the face of the invoices sent by Gates to the Buyer.
- (b) If the Buyer fails to make any payment on the due date then, without prejudice to any other right or remedy available to Gates, Gates shall on seven days' written notice be entitled to:
- cancel the Contract or suspend immediately any further deliveries to the Buyer.
 - charge the buyer interest (both before and after any judgement) on the amount unpaid at the rate of 4% per annum above the Base Rate from time to time of the See overview (2) following the present Terms & Conditions of Sale, until payment in full is made (a part of the month being treated as a full month for the purpose of calculating interest).

7. Termination

Without prejudice to any other right available, Gates shall be entitled immediately to terminate the Contract at any time and thereafter to re-sell the Goods without further notice to the Buyer if :

- the buyer shall fail to pay any sum due under the Contract or ;
- the Buyer shall commit or continue any breach of any obligation under the Contract (other than non-payment which shall be dealt with above) and shall fail to remedy the same within seven days of Gates giving notice thereof or ;
- any arrestment or other legal process is carried out upon any assets of the Buyer or ;
- the Buyer shall make any composition or arrangement with its creditors, be declared bankrupt or enter into liquidation or have a winding up petition presented against it or call a meeting of creditors or have a receiver, administrator, judicial factor or other similar officer appointed over all or any of its assets.

8. Delivery

- (a) Any dates quoted for delivery of the Goods are approximate only and Gates shall not be liable for any delay in the delivery of the Goods howsoever caused. Time for delivery shall not be of the essence unless previously agreed by Gates in writing. The Goods may be delivered by Gates in advance of the quoted delivery date upon giving reasonable notice to the Buyer.
- (b) Where delivery of the Goods is to be made by Gates in bulk, Gates reserves the right to make delivery and to charge for up to 10% more or less than the quantity ordered.
- (c) The Goods may not be returned by the Buyer to Gates, for any reason without the prior written agreement of Gates.

9. Claims

- (a) If, within seven days after receipt of invoice, the Goods covered by that invoice are not delivered, Gates must be notified in writing immediately. If damage, pilferage, excess or shortage is revealed when the goods are received by the Buyer, Gates and the carrier must be notified in writing (otherwise than on Gates' or the carrier's documents) within 48 hours of receipt of the Goods by the Buyer (excluding Sundays and public holidays).
- (b) Damage to the immediate container of Goods must if reasonably discoverable upon examination at delivery by the Buyer, be reported in writing to Gates within seven days of receipt (excluding Sundays and public holidays). Damage to the Goods not capable of discovery on reasonable examination at receipt must be reported in writing to Gates within a period of seven days of ascertainment of such damage.
- (c) Gates' liability under paragraphs (a) and (b) above shall be limited to refunding of the price of the Goods or, at Gates' sole option to replacement of the Goods.
- (d) In the absence of a complaint being duly notified to Gates within the terms of this Clause, the Goods shall be deemed to have been accepted by the Buyer in good condition.

10. Warranties & Liability

- (a) Gates warrants title to all Goods sold by it.





Terms and conditions of sale

- (b) Subject to the conditions set out below Gates warrants that the Goods are of merchantable quality, correspond with their specification and are free from defects in material and workmanship at the time of delivery.
- (c) The warranty in (b) above is given by Gates subject to the following conditions:
- Gates shall be under no liability in respect of any defect in the goods arising from any drawing, design or specification supplied by the Buyer.
 - Gates shall be under no liability in respect of any defect arising from fair wear and tear on the part of the Buyer, wilful damage, negligence, abnormal working conditions, failure to follow Gates' written instructions, misuse or alteration or repair of the Goods without Gates' approval.
 - The above warranty does not extend to parts or equipment not manufactured by Gates, in respect of which the Buyer shall only be entitled to the benefit of any such warranty or guarantee as is given by the manufacturer to Gates.
 - If required by Gates, for inspection purposes, the Buyer shall return the Goods to Gates at Gates' expense within one month of the discovery of the defect.
 - Where any valid claim in respect of any of the Goods which is based on any defect in the quality or condition of the Goods or their failure to meet specification is notified to Gates in accordance with the Contract, Gates shall be entitled to replace the Goods free of charge or, at Gates' sole discretion, refund to the Buyer the price of the Goods, but Gates shall have no further liability to the Buyer.
 - Gates shall not at any time be obliged to supply any Goods or perform any other obligation under the Contract if such performance is rendered impossible, substantially more difficult or delayed as a result of Acts, orders or regulations issued by central or local government (whether or not valid), fire, industrial disputes (whether official or unofficial), war, hostilities, civil commotions, riots, flood, accident, epidemic, embargo, shortage of transport, appropriation of plant or the Goods (whether in whole or in part), shortage of raw materials or failure of supplies (or the threat or reasonable apprehension of any of the foregoing) or from any other cause, event or occurrence which Gates is either unable to prevent or could not reasonably be expected to prevent having due regard to Gates' interest. Gates shall not be liable for any loss, damage, mis-delivery or delay arising from or as the result of such non-performance.
 - Gates' liability for any breach of any obligation, arising from the express or implied terms of the Contract, to take reasonable care or exercise reasonable skill in the performance of the Contract in relation to any of the Goods referred to in the Order or of any common law duty to take reasonable care or exercise reasonable skill (including, but not limited to, liability for negligence) by it, its employees or agents, arising from or as a result of the Contract, shall be limited to the value of the relevant Goods forming part or all of the Order.

11. General

- (a) No failure or delay by Gates to exercise any right, power, remedy or privilege shall operate as a waiver thereof nor shall any single or partial exercise thereof preclude any other or further exercise thereof or of the exercise of any other right, power, remedy or privilege. The rights, powers, remedies and privileges expressly provided under or by virtue of the Contract are cumulative and not exclusive of any of the rights, powers, remedies or privileges which Gates would otherwise have.
- (b) The Buyer shall have the right to set off claims against Gates only if they are undisputed or have been the subject of a court judgement.
- (c) The headings in these conditions are for convenience or reference only : they do not form part of the Contract and shall not affect its validity of construction.
- (d) In the event of any one or more of the provisions contained in the Contract (other than a provision for the payment of monies by the Buyer to Gates) being invalid, illegal or unenforceable in any respect under any applicable law, the validity, legality or enforceability of the remaining provisions shall not in any way be affected or impaired thereby. Where the provisions of such applicable law may be waived they are hereby waived by the parties to the full extent permitted so that the Contract shall be deemed to be valid and binding and enforceable in accordance with its terms. If any provision of the Contract becomes invalid the parties agree to substitute for such invalid provision a new provision which serves the purpose of the invalid provision to the furthest possible extent.

12. Governing Law

Subject to the provisions of 3(d) hereof, the construction, validity and performance of the Contract will be governed by See overview (3) following the present Terms & Conditions of Sale and Gates and the Buyer agree to submit to the jurisdiction of See overview (4) following the present Terms & Conditions of Sale .



COUNTRY	(1)	(2)	(3)	(4)
Denmark	Gates Hydraulics Limited, a Company incorporated in England and having a place of business at Station Road, St. Neots, Cambridgeshire PE19 1XA	The National Westminster Bank PLC	the law of England	the English courts
Finland	Gates Hydraulics Limited, a Company incorporated in England and having a place of business at Station Road, St. Neots, Cambridgeshire PE19 1XA	The National Westminster Bank PLC	the law of England	the English courts
France	Gates Hydraulique, Société Anonyme, ayant son siège social à Zone Industrielle, B.P. 14, 69881 Meyzieu Cédex, France	du marché monétaire	le droit français	les tribunaux de Lyon
Germany	Gates Europe N.V., eine Aktiengesellschaft in Belgien errichtet und in der Dr. Carlierlaan 30, 9320 Erembodegem-Aalst, Belgien angesessen	Commerzbank Belgium	das belgische Recht	Gerichtsstand Aalst
Hungary	Gates Europe N.V., a Company incorporated in Belgium and having a place of business at Dr. Carlierlaan 30, 9320 Erembodegem-Aalst, Belgium	Commerzbank Belgium	the law of Belgium	the court of Aalst
Italy	Gates Hydraulique, Società Anonima, sede sociale : Zona Industriale, B.P. 14, 69881 Meyzieu Cedex, Francia	del mercato monetario	diritto francese	le tribunali di Lyon
	Gates Hydraulics Limited, a Company incorporated in England	The National		
Norway	and having a place of business at Station Road, St. Neots,	Westminster Bank	the law of England	the English courts
	Cambridgeshire PE19 1XA	PLC		
Poland	Gates Europe N.V., a Company incorporated in Belgium and having a place of business at Dr. Carlierlaan 30, 9320 Erembodegem-Aalst, Belgium	Commerzbank Belgium	the law of Belgium	the court of Aalst
	Gates Hydraulique, a Company incorporated in France and			
Portugal	having a place of business at Zone Industrielle, B.P. 14, 69881 Meyzieu Cedex, France	the monetary market	the law of France	the courts of Lyon
	Gates Hydraulics Limited, a Company incorporated in England	The National		
Republic of Ireland	and having a place of business at Station Road, St. Neots,	Westminster Bank	the law of England	the English courts
	Cambridgeshire PE19 1XA	PLC		
Spain	Gates Hydraulique, Sociedad Anónima, domicilio social : Zona Industrial, B.P. 14, 69881 Meyzieu Cedex, Francia	del mercado monetario	el derecho francés	los tribunales de Lyon
Sweden	Gates Hydraulics Limited, a Company incorporated in England and having a place of business at Station Road, St. Neots, Cambridgeshire PE19 1XA	The National Westminster Bank PLC	the law of England	the English courts
Switzerland	Gates Europe N.V., a Company incorporated in Belgium and having a place of business at Dr. Carlierlaan 30, 9320 Erembodegem-Aalst, Belgium	Commerzbank Belgium	the law of Belgium	the court of Aalst
	Gates Hydraulics Limited, a Company incorporated in England	The National		
United Kingdom	and having a place of business at Station Road, St. Neots,	Westminster Bank	the law of England	the English courts
	Cambridgeshire PE19 1XA	PLC		
All other remaining EXPORT countries	Gates Europe N.V., a Company incorporated in Belgium and having a place of business at Dr. Carlierlaan 30, 9320 Erembodegem-Aalst, Belgium	Commerzbank Belgium	the law of Belgium	the court of Aalst
Austria	Gates Europe N.V., a Company incorporated in Belgium and having a place of business at Dr. Carlierlaan 30, 9320 Erembodegem-Aalst, Belgium	Commerzbank Belgium	the law of Belgium	the court of Aalst
Benelux	Gates Europe N.V., een vennootschap opgericht in België en met maatschappelijke zetel te Dr. Carlierlaan 30, 9320 Erembodegem-Aalst, België	Commerzbank Belgium	het Belgisch recht	Aalst
Benelux	Gates Europe S.A., ayant son siège social à Dr. Carlierlaan 30, 9320 Erembodegem-Aalst, Belgique	Commerzbank Belgium	le droit belge	Aalst
Czechia	Gates Europe N.V., a Company incorporated in Belgium and having a place of business at Dr. Carlierlaan 30, 9320 Erembodegem-Aalst, Belgium	Commerzbank Belgium	the law of Belgium	the court of Aalst





Care and Maintenance of Hose

(Reprinted From RMA Hose Handbook)

Hose has a limited life and the user must be alert to signs of impending failure, particularly when the conditions of service include high working pressures and/or the conveyance or containment of hazardous materials. The periodic inspection and testing procedures described here provide a schedule of specific measures which constitute a minimum level of user action to detect signs indicating hose deterioration or loss of performance before conditions leading to malfunction or failure are reached.



SAFETY WARNING: Failure to follow properly the manufacturer's recommended procedures for the care, maintenance and storage of a particular hose might result in its failure to perform in the manner intended and might result in possible damage to property and serious bodily injury.

General instructions are also described for the proper storage of hose to minimize deterioration from exposure to elements or environments which are known to be deleterious to rubber products. Proper storage conditions can enhance and extend substantially the ultimate life of hose products.

General Care and Maintenance of Hose

Hose should not be subjected to any form of abuse in service. It should be handled with reasonable care. Hose should not be dragged over sharp or abrasive surfaces unless specifically designed for such service. Care should be taken to protect hose from severe end loads for which the hose or hose assembly were not designed. Hose should be used at or below its rated

working pressure; any changes in pressure should be made gradually so as to not subject the hose to excessive surge pressures. Hose should not be kinked or be run over by equipment. In handling large size hose, dollies

should be used whenever possible; slings or handling rigs, properly placed, should be used to support heavy hose used in oil suction and discharge service.

General Test and Inspection Procedures for Hose

An inspection and hydrostatic test should be made at periodic intervals to determine if a hose is suitable for continued service.

A visual inspection of the hose should be made for loose covers, kinks, bulges or soft spot which might indicate broken or displaced reinforcement.

The couplings or fittings should be closely examined and, if there is any sign of movement of the hose from the couplings, the hose should be removed from service.

The periodic inspection should include a hydrostatic test for one minute at 150 percent of the recommended working pressure of the hose. An exception to this would be woven jacketed fire hose. During the hydrostatic test, the hose should be straight, not coiled or in a kinked position.

Water is the usual test medium and, following the test, the hose may be flushed with alcohol to remove traces of moisture. A regular schedule for testing should be followed and inspection records maintained.



SAFETY WARNING: Before conducting any pressure tests on hose, provision must be made to ensure the safety of the personnel performing the tests and to prevent any possible damage to property. Only trained personnel using proper tools and procedures should conduct any pressure tests.

1. Air or any other compressible gas must never be used as the test media because of the explosive action of the hose should a failure occur. Such a failure might result in possible damage to property and serious bodily injury.

2. Air should be removed from the hose by bleeding it through an outlet valve while the hose is being filled with the test medium.

3. Hose to be pressure tested must be restrained by placing steel rods or straps close to each end and at approximate 10 foot (3 m) intervals along its length to keep the hose from "whipping" if failure occurs. The steel rods or straps are to be anchored firmly to the test structure but in such a manner that they do not contact the hose which must be free to move.

4. The outlet end of hose is to be bulwarked so that a blown-out fitting will be stopped.

5. Provisions must be made to protect testing personnel from the forces of the pressure media if a failure occurs.

6. Testing personnel must never stand in front of or in back of the ends of a hose being pressure tested.

7. When liquids such as gasoline, oil, solvent, or other hazardous fluids are used as the test fluid, precautions must be taken to protect against fire or other damage should a hose assembly fail and the test liquid be sprayed over the surrounding area.



Hose Cleaning

There are many different methods used to clean hose assemblies. An apron, safety glasses or face shield, rubber boots and gloves should be worn to help protect the person doing the cleaning from potential injury. Some suggested methods for select hoses in this catalog are listed below. Which method to use and how often cleaning should be performed is based on the following:

- Type of hose
- Residual material in the hose
- Cleanliness requirements for the application
- Cleaning facilities available
- Consideration for disposal of the residual material and cleaning solutions(s)
- Requirements for special applications such as foods, pharmaceuticals, etc.

Solution Recommendations

1. Cleaning solutions should be chosen that will dissolve or remove the residual material without damaging the hose assembly.
2. A dilute solution of soap in water can often be sufficient. CAUTION – Some chemicals, such as concentrated acids or bases, can react with water releasing heat and byproducts, and possibly splatter.
3. Consult the MSDS of the material being cleaned to identify potential cleaning solutions.
4. After identifying potential cleaning solutions, check Chemical Resistance Table in this catalog for compatibility with hose tube and cover.
5. Non-compatibility of a cleaning solution can cause damage to the hose.

Flushing or Immersing in a Cleaning Bath

1. Do not exceed the maximum working pressure or temperature for the hose.
2. The cover of the hose should also be washed or wiped to remove any residual material.

Steam Cleaning

1. Steam cleaning is not generally recommended. High temperatures can accelerate aging of a hose and shorten service life.
2. Do not exceed the maximum temperature rating of the hose. Doing so can cause defects such as tube delamination (reducing tube to reinforcement adhesion), tube cracking or tube flow leaving thin spots.
3. Never use superheated steam! This will exaggerate the potential damages noted above. Only “open end” 50 psi steam should be used.
4. If the hose has blockage, remove it before introducing steam.
5. If the steam source has a wand attached, use caution inserting the wand so that physical damage to the hose is not caused. Sharp edges on the wand can cut the tube, and thin spots could occur where the hot wand contacts the tube.

Shuttle Method

1. This is not a recommended cleaning method for hose assemblies.
2. This method uses a shuttle to travel through the inside of the hose assembly to wipe residual material from the hose. The shuttle and residual material can come out of the hose at velocities that could cause injuries or damage.
3. There is also danger from a build up of pressure if the shuttle becomes lodged.
4. The shuttle can cause damage to the hose tube.

Recommended Cleaning of Chemical Hose

1. Drain the hose after each use.
2. Flush with water or other neutralizing cleaning solution.
3. Properly dispose of drained fluid and cleaning waste.
4. Between uses, store the hose in a clean, dry environment away from sunlight.
5. Avoid cross contamination. Dedicate a hose to handle a specific chemical.

Recommended Cleaning of Food Hose

1. Drain the hose after each use.
2. Flush with water or other cleaning solution.
3. Properly dispose of drained material and cleaning waste.
4. Between uses, store the hose in a clean, dry environment away from sunlight.
5. Avoid cross contamination. Dedicate a hose to handle a specific food material.





INDUSTRIAL HOSE PRODUCTS

Storage

Rubber hose products in storage can be affected adversely by temperature, humidity, ozone, sunlight, oils, solvents, corrosive liquids and fumes, insects, rodents and radioactive materials.

The appropriate method for storing hose depends to a great extent on its size (diameter and length), the quantity to be stored and the way in which it is packaged. Hose should not be piled or stacked to such an extent that the weight of the stack creates distortions on the length stored at the bottom.

Since hose products vary considerably in size, weight and length, it is not practical to establish definite recommendations on this point. Hose having a very light wall will not support as much load as could a hose having a heavier wall or hose having a wire reinforcement. Hose which is shipped in coils or bales should be stored so that the coils are in a horizontal plane. Whenever feasible, rubber hose products should be stored in their original shipping containers, especially when such containers are wooden crates or cardboard cartons which provide some protection against the deteriorating effects of oils, solvents and corrosive liquids; shipping containers also afford some protection against ozone and sunlight.

Certain rodents and insects will damage rubber hose products and adequate protection from them should be provided. Cotton jacketed hose should be protected against fungal growths if the hose is to be stored for prolonged periods in humid conditions in excess of 70 percent.

The ideal temperature for the storage of rubber products ranges for 50° to 70°F (10-21°C) with a maximum limit of 100°F (38°C). If stored below 32°F (0°C), some rubber products become stiff and would require warming before being placed in service. Rubber products should not be stored near sources of heat, such as radiators, base heaters, etc., nor should they be stored under conditions of high or low humidity.

To avoid the adverse effects of high ozone concentration, rubber hose products should not be stored near electrical equipment that may generate ozone or be stored for any lengthy period in geographical areas of known high ozone concentration. Hose should not be stored in locations where the ozone level exceeds the National Institute of Occupational Safety and Health's upper limits of 0.10 ppm. Exposure to direct or reflected sunlight – even through windows – should also be avoided. Uncovered hose should not be stored under fluorescent or mercury lamps which generate light waves harmful to rubber.

Storage areas should be relatively cool and dark, and free of dampness and mildew. Items should be stored on a first-in, first-out basis, since even under the best of conditions, an unusually long shelf life could deteriorate certain rubber products.





Hose Finder

Rubber hoses are used basically to convey material. They are used for a variety of reasons, but principally for:

- Flexibility; allows for changes in alignment, hookup or outlet.
- Absorbing vibration.
- Resistance to Corrosive fluids.
- Resistance to abrasion.
- Providing a closed system.

In applying any product, the more you know about the application, the better the product you choose to meet the needs of the application. This is particularly true with hose because of the many variables involved.

Each type of hose and coupling is designed to give satisfactory, safe service life for a particular application. To obtain this service life, the user should:

- Select the proper hose and couplings for the application.
- Take reasonable care of the hose assembly while it is in service.
- Maintain the hose assembly in good working condition.
- Observe all applicable safety regulations.

If a hose assembly was incorrectly selected to solve an application problem, there is very little that care and maintenance can do to prolong its service life. It's very simple: hoses will fail soon regardless of the care and maintenance provided if they are misapplied.

When designing a system with rubber hose, engineering principles regarding materials always apply. Take advantage of the outstanding characteristics of rubber materials listed on the Characteristics and Resistance Information for Hose Tube and Cover Compounds page and avoid those conditions that shorten hose life. Some of these conditions are:

- Exposure to higher-than-rated temperatures.
- Exposure to severe external abuse such as kinking, pulling, excessive bending.
- Exposure to corrosive fluids to which hose has little resistance.
- Subjecting hose to higher than rated working pressure/high surge pressure.

The process of selecting hoses from Industrial Hose Products usually is resolved in one of two ways:

- Making the optimum choice from several possible selections for an application.
- Making the only choice, which satisfies all the requirements of a somewhat special application; i.e., transfer of LP Gas.

Hoses are versatile, and it's often possible to use one type of hose for several different applications. However, certain specific applications are critical and/or hazardous, and the only type of hose used should be the one Gates recommends for that application. Some of the critical or hazardous applications involving hoses are:

- Steam.
- Liquid Petroleum Gas (LPG).
- Corrosive chemicals.
- Air Drill operation.

Refer to the product description pages in this catalog for details of hoses used in these applications.

The Data Pages are intended to give you a reference for quickly locating standard line hoses for a given application. Hoses are listed by size (I.D.) and rated working pressure. Pertinent specification information is also provided for each hose.

Precautionary Notes

Not all of the sizes shown are stock items and may require minimum order quantities. In addition, many of the larger diameter hoses (water, material handling, etc.) are made to order.





Gates Chemical Rating System

NOTE: Ratings are for the effect on the **polymer only**.

"1" Preferred: Constant Contact — This chemical is expected to have minor or no effect on the Polymer. Hose approved for continuous contact. Environmental changes such as temperature, concentration, etc., may promote increased degradation.

"2" Acceptable: Intermittent Contact — This polymer should give reasonably satisfactory service. Due to the nature of this chemical, and under prolonged continuous exposure, the rubber may show minor to moderate deterioration and/or solution discoloration. Hose intended for transfer service only. Environmental changes such as temperature, concentration, etc., may promote increased degradation.

"X" Not Recommended — The polymer is unsatisfactory for this chemical and should not be used.

"-" (Dash) — Insufficient or no data available for this material. Testing is advised.

NOTE 1. The above ratings as applied to the Chemical Resistance Table are intended as guides only. They are compiled from the best data available to us. Ratings shown in the table are based on 100% concentrated or saturated solutions, unless otherwise noted, and up to 100 F (+38°C), unless otherwise stated.

NOTE 2. If unusual conditions exist, a polymer test in the fluid is suggested.

NOTE 3. Where a chemical listed in the Resistance Table is soluble in a solvent other than water, the solvent should also be checked for its suitability with the polymer.

NOTE 4. Discoloration of fluids conveyed in the hose. There are no generally accepted standard tests for measuring or rating discoloration of fluids passing through a hose. The amount of discoloration that can be tolerated is usually established by the user on the basis of application. Obviously, products such as paint must be conveyed through a hose that has very good non-discoloring characteristics. If the product is not visually affected, then the hose is satisfactory. For some products, the discoloration may be objectionable from a visual standpoint. Also, the concentration of the particles causing the discoloration may be objectionable if they affect the final use of the product.

Some of the more common methods of checking discoloration are:

1. Allowing the fluid to remain in a sample piece of hose for a specific period and expected operating temperature, then inspecting visually for discoloration.
2. Testing fluid as in No. 1 above and then passing it through filter paper to check foreign content.
3. A more refined test can be made with a spectrophotometer. This instrument measures light transmission through the fluid before and after immersion tests with rubber stocks. This gives a relative rating expressed in percent, the original fluid being rated at 100%.

If discoloration of the product becomes a serious problem for a specific application, contact Gates Europe N.V for a recommendation.

NOTE 5. Fluid permeation through the tube wall needs to be considered. A tube material may show no sign of degradation, however hose failure can occur if material permeates through the tube to degrade adhesive layers or reinforcement.



Chemical Resistance Table

1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters						
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro	
Chemical																						
A																						
Absorption Oil	Liquid	1	2	2	X	1	X	X	2	X	1	2	1	1	-	-	-	-	1			
Acetal	Colorless Liquid	1	1	1	1	-	-	-	-	1	X	-	1	-	-	-	-	-	1			
Acetaldehyde	Colorless Liquid	1	1	1	1	X	2	2	X	1	X	X	1	2	X	1	1	1	1	1	1	
Acetamide	Liquid above 176°F(80°C)	1	1	2	2	2	X	X	2	2	X	-	1	-	-	-	2	-	1	X	-	
Acetic Acid (40% or less)	Clear Colorless Liquid	1	1	1	1	X	2	X	2	1	X	2	1	-	-	X	2	2	2	X	2	
Acetic Acid (56% or less)	Clear Colorless Liquid	1	1	1	1	X	2	X	2	1	X	2	1	X	2	X	2	2	2	X	2	
Acetic Acid (85% or less)	Clear Colorless Liquid	1	1	1	2	X	2	X	X	X	X	X	X	X	X	-	2	2	-	-	X	
Acetic Acid (Glacial - 99.4%)	Clear Colorless Liquid	1	1	X	X	X	2	X	X	X	X	X	1	X	X	-	2	2	-	-	X	
Acetic Acid, Anhydride	Clear Colorless Liquid	1	-	X	-	X	X	X	X	2	-	2	1	X	X	-	2	2	-	-	X	
Acetic Anhydride (Acetic Oxide)	Colorless Liquid	1	1	1	1	X	X	X	-	2	X	2	1	X	X	X	2	2	2	X	X	
Acetic Ether (Ethyl Acetate)	Colorless Liquid	1	1	1	2	X	X	X	X	2	X	X	2	1	X	1	1	1	1	1	2	
Acetic Oxide (Acetic Anhydride)	Colorless Liquid	1	1	1	1	-	X	X	-	2	X	2	1	X	X	X	2	2	2	X	X	
Acetone (Dimethylketone)	Colorless Liquid	1	1	X	2	X	X	X	X	2	X	X	1	1	X	1	1	1	1	1	2	
Acetone Cyanohydrin	Colorless Liquid	1	1	2	2	-	X	X	-	2	-	-	2	-	-	-	-	-	-	-	-	
Acetonitrile (Methyl Cyanide)	Colorless Liquid	1	1	2	X	X	2	2	2	2	-	2	1	-	1	-	-	-	-	-	-	
Acetophenone	Colorless Liquid	1	2	2	1	X	X	X	X	1	X	-	-	-	-	-	-	-	-	-	2	
Acetyl Chloride	Colorless Liquid	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	
Acetyl Oxide (Acetic Anhydride)	Colorless Liquid	1	1	1	1	X	X	X	-	2	X	2	1	X	X	X	2	2	2	X	X	
Acetyl-P-Toluidine (In Ether or Alcohols)	In Alcohol or Ether	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	1	-	X	1	X	-	-	-	-	-	X	
Acetylene Tetrachloride (Tetrachloroethane)	Colorless Liquid	1	X	X	X	-	X	X	-	X	1	-	X	1	X	-	-	-	-	-	-	
Acrolein (Hydroquinone Inhibited)	Colorless to Yellow Liquid	1	1	1	X	-	-	-	-	2	X	-	-	-	-	-	-	-	-	-	-	
Acrylamide	Colorless Crystals	1	1	2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	
Acrylates (HEA or HPA)	Colorless Liquid	1	1	1	X	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	
Acrylic Acid	Colorless Liquid	1	1	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	
Acrylic Acid (Glacial 97%)	Colorless Liquid	1	1	1	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-	-	-	
Acrylic Emulsion	Liquid	1	1	1	X	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	
Acrylonitrile	Colorless Liquid	1	2	2	X	X	2	2	X	X	X	X	1	-	1	1	1	1	-	-	-	
Adipic Acid (70°F)	White Crystals	1	1	X	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	2	X	1	1	1	1	1	X	2	1	1	1	1	1	-	
Air, 257°F (125°C)	Colorless Gas	1	1	X	1	X	X	X	2	1	1	1	1	X	X	-	-	-	-	-	-	
Air, 300°F (149°C)	Colorless Gas	1	1	X	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	1	
Aircraft Hyd. Oil AA	Liquid	1	1	-	X	1	-	-	-	X	-	-	-	-	-	1	1	1	1	1	-	
Alachlor (Lasso)	Colorless Crystals	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	1	1	-	-	-	
Alkaline Liquid (NOS)	In Water Solutions	1	1	1	1	-	-	-	-	1	2	-	1	-	-	-	-	-	-	-	-	
Alkylaryl 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 (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	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	-	-	2	
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	-	-	-	-	-	-	X	X	2	X	X	1	
Alum, Potash (Aluminum Potassium Sulfate)	White Crystals	1	-	-	-	-	-	1	-	-	-	-	-	-	-	X	2	2	X	X	1	
Alumina - Calcined (Conveyed Pneumatically)	Granular	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
Alumina Trihydrate (Conveyed Pnuematically)	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	1	-	-	-	X	2	2	-	X	-	





Chemical Resistance Table

1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
Aluminum Chloride Solution	White to Yellow Solution	1	1	X	1	1	1	1	-	1	1	-	1	-	-	X	2	2	X	X	1
Aluminum Chloride, Anhydrous	White to Yellow Crystals	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Aluminum Chlorohydrate Solution (Up to 50%)	White Solution	1	1	1	1	1	-	-	-	1	1	-	1	-	-	-	-	-	-	-	-
Aluminum Fluoride	White Crystals	1	1	-	-	-	-	1	1	-	-	-	-	-	1	X	2	2	2	X	1
Aluminum Formate (Di & Tri In Water)	In Hot Water	1	1	1	1	1	X	X	-	1	1	-	1	-	-	-	-	-	-	-	-
Aluminum Hydroxide (Alumina Trihydrate)	In Mineral Acid or Caustic Soda	1	1	1	-	X	X	X	1	1	1	-	1	X	X	-	1	1	-	1	1
Aluminum Nitrate	In Cold Water	1	1	1	1	1	1	1	1	1	1	1	1	-	1	X	1	1	2	-	1
Aluminum Phosphate Solution	In HCl or 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	-	1
Aluminum Sulfate	White Crystals	1	1	-	1	1	-	1	1	-	-	-	-	-	-	X	X	2	X	X	1
Aluminum Sulfate Solution	In Water	1	1	1	1	1	1	1	-	1	1	-	1	-	-	X	X	2	X	X	1
Aluminum Sulfate Solution (49.7% H2O)	Liquid	1	1	1	1	1	1	1	1	1	-	1	1	1	1	X	X	2	X	X	1
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	-	2	2	2	2	2	2	X	-	-	-	-	-	1	-	X	X	-
Amines (Primary, Secondary, Tertiary, Etc)	Varies	1	2	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
Aminodiphenylamine	Purple Powder	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aminoethanol (Ethanolamine)	Colorless Viscous Liquid	1	2	1	2	2	2	2	2	2	X	X	1	1	2	1	1	1	-	1	-
Aminoethylethanolamine	Liquid	1	2	1	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	2	1	1	1	1	-	1	1	-	X	1
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	2	1	1	-	1	2	1	-	1	1	-	X	1
Ammonium Bicarbonate	White Crystals	1	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	1
Ammonium Bisulfate (50%)	Colorless Liquid	1	1	1	1	-	-	-	-	1	1	-	1	-	-	-	-	-	-	-	-
Ammonium Carbonate	Colorless to White Powder	1	1	-	-	X	-	1	2	-	-	-	-	-	1	1	1	1	-	-	1
Ammonium Chloride	White Crystals	1	-	X	-	-	-	1	-	-	-	-	-	-	-	-	2	2	-	X	1
Ammonium Chloride Solution	Liquid	1	1	-	1	2	1	1	X	1	-	1	1	X	1	-	2	2	-	X	1
Ammonium Flouride	White Crystals	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Ammonium Hydroxide (16%, 20%, 26%, & 30%)	Colorless Liquid	1	1	1	-	-	-	-	-	-	2	-	-	-	-	2	1	1	-	X	1
Ammonium Hydroxide (up to 30% NH3)	Colorless Liquid	1	1	1	1	2	X	2	2	2	2	1	1	X	X	2	1	1	-	X	1
Ammonium Metaphosphate	White powder	1	1	-	1	2	2	2	2	1	-	2	-	-	2	1	1	1	X	-	1
Ammonium Nitrate	Colorless Crystals	1	1	-	-	-	-	1	-	-	-	-	-	-	-	1	1	1	2	X	1
Ammonium Nitrate Fertilizer (20.5% N,or 33.5% N)	Aggregate	1	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	1	2	X	1
Ammonium Nitrate Prills and Oil	Aggregate	1	-	-	-	1	-	1	-	-	-	-	-	-	-	1	1	1	2	X	1
Ammonium Nitrate Solution (up to 83%)	Liquid	1	1	1	1	1	-	1	1	-	1	1	1	1	-	1	1	1	2	X	1
Ammonium Nitrite	Colorless crystal	1	1	-	-	X	X	X	2	-	-	-	1	-	-	-	1	1	-	-	1
Ammonium Persulfate	Solution in Water	1	1	-	-	X	-	-	X	-	X	-	-	-	-	-	1	1	-	X	X
Ammonium Phosphate	White Crystals or Powder	1	-	-	-	-	-	1	-	-	-	-	-	-	-	X	2	1	X	-	1
Ammonium Phosphate Solutions	Liquid	1	1	1	1	1	1	1	1	1	1	1	1	-	1	X	2	1	X	-	1
Ammonium Polysulfide Solution	Yellow Solution	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ammonium Sulfate	Gray to White Crystals	1	1	-	-	-	-	1	-	-	-	-	1	-	-	1	1	1	X	X	1
Ammonium Sulfide	Yellow Crystals	1	1	-	-	-	-	1	-	-	-	-	-	-	-	1	1	1	X	X	1
Ammonium Sulfide Solution (40-44% or less)	Liquid	1	1	-	1	2	1	1	-	1	1	1	1	-	1	1	1	1	X	X	1
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	X
Amyl Alcohol	Colorless Liquid	1	2	2	2	2	2	2	2	2	1	2	1	1	2	1	1	1	1	1	-
Amyl Chloride (Chloropentane)	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	X	-	1	1	-	-	X
Amyl Chlorides (mixed)	Straw to Purple Liquid	1	2	2	X	X	X	X	X	X	1	X	2	1	X	-	1	1	-	-	X
Amyl Chloronaphthalene	-	1	1	2	X	X	X	X	X	X	1	X	X	1	-	-	1	1	-	-	-
Amyl Naphthalene	-	1	1	-	X	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	X	-	-	-	-	-	-	-	-	-
Amylbenzene (sec amylbenzene)	Clear Liquid	1	2	2	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	1

1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers															Couplings / Adapters						
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro		
Anhydrous Ammonia (R 717)	Gas or Liquid	NO HOSE AVAILABLE																					
Aniline	Colorless Oily Liquid	1	2	X	2	X	X	X	X	2	1	X	2	X	-	-	2	1	1	2	X	1	
Aniline Dyes	-	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	2	
Aniline Oil (Aniline)	Colorless Oily Liquid	1	2	X	2	X	X	X	X	2	1	X	2	X	-	-	2	1	1	2	X	1	
Animal Fat (Lard)	White Solid/Liquid > 108°F(42°C)	1	1	1	X	1	X	X	2	X	1	X	1	1	-	-	1	1	1	1	X	-	
Animal Gelatin	-	1	-	1	-	1	-	-	1	-	-	-	-	-	-	1	-	1	1	-	-	-	
Animal Grease, Inedible, Liquid	Liquid	1	-	-	X	1	-	X	2	X	1	2	-	-	-	-	-	-	-	-	-	-	
Animal Oils	Solid to Liquid	1	-	-	-	1	-	-	2	-	-	-	1	1	1	1	1	1	1	-	-	-	
Ant Oil (Furfural)	Colorless to Reddish Brown Liquid	1	1	-	X	X	X	X	2	X	2	2	1	-	X	2	1	1	1	1	1	2	
Antifreeze (Glycol Base)	Liquid	1	1	2	1	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	-	-	-	1	
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	2	2	2	2	2	2	1	1	X	X	2	1	1	-	X	1		
Aqua Regia (Nitrohydrochloric Acid)	Fuming Yellow Liquid	1	2	X	X	X	X	X	X	X	1	X	2	X	X	-	X	X	-	-	X		
Argon, Compressed	Colorless Gas	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-		
Aromatic Hydrocarbons	Typically Colorless Liquids	1	2	2	X	2	X	X	X	X	1	X	X	1	X	1	1	1	2	2	-		
Arsenic Acid	In Water	1	1	1	2	-	X	X	-	2	1	-	1	-	-	2	-	1	2	-	2		
Arsenic Trioxide	In Acid	1	1	1	X	2	X	X	2	X	1	X	-	-	1	-	-	-	-	-	-		
Askarel (Transformer Oil)	Varies	1	2	2	X	X	X	X	X	X	1	X	1	1	X	1	1	1	-	1	2		
Asphalt	Varies	1	2	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	2	X	X	2	X	1	X	X	2	X	1	1	1	-	1	-		
Asphalt Emulsion	Black Liquid	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Asphalt Paint	Black Liquid	1	2	X	X	2	X	X	-	X	1	X	-	2	X	-	-	-	-	-	-		
Asphaltene	In Carbon Disulfide	1	2	X	X	2	X	X	2	X	1	X	X	1	-	-	-	-	-	-	-		
ASTM Oil No. 1	Brown Liquid	1	1	1	X	1	X	X	1	X	1	2	1	1	2	1	1	1	1	1	2		
ASTM Oil No. 2	Brown Liquid	1	1	1	X	1	X	X	2	X	1	2	1	1	X	1	1	1	1	1	X		
ASTM Oil No. 3	Brown Liquid	1	1	1	X	1	X	X	X	X	1	X	1	1	X	1	1	1	1	1	X		
ASTM Reference Fuel A	Liquid	1	1	1	X	1	X	X	1	X	1	1	1	1	2	1	1	1	1	1	X		
ASTM Reference Fuel B	Liquid	1	2	1	X	1	X	X	2	X	1	X	2	1	X	1	1	1	1	1	X		
ASTM Reference Fuel C	Liquid	1	2	2	X	2	X	X	X	X	1	X	2	1	X	1	1	1	-	1	X		
ATF (Automatic Transmission Oil)	Liquid	1	1	1	X	1	-	-	-	X	1	-	1	-	-	-	-	-	-	-	-		
B																							
Baltic Types 100, 150, 200, 300, 500	Liquid	1	1	-	X	1	-	-	-	X	-	-	-	-	2	-	-	-	-	-	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	1		
Barium Carbonate	White Powder	1	1	-	X	1	X	1	1	X	1	X	X	-	1	2	1	1	-	1	1		
Barium Chloride	Colorless Crystals	1	1	1	1	1	1	1	1	1	1	1	1	X	1	X	1	1	-	2	1		
Barium Hydroxide	White Powder	1	1	1	1	1	X	1	1	1	-	1	1	-	X	2	1	1	-	-	1		
Barium Sulfate	White to Yellowish Powder	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	1	-	2	1		
Barium Sulfide	Yellowish Green to Gray Powder	1	1	1	-	-	-	1	-	-	1	-	-	-	-	X	1	1	-	X	1		
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Beet Sugar Liquors	Colorless Solution	1	1	1	1	1	1	1	1	1	1	1	1	1	1	X	X	X	X	-	X		
Bellows 80-20 Hydraulic Oil	Liquid	1	1	-	X	1	-	-	-	X	-	-	-	-	2	-	-	-	-	-	X		
Benzaldehyde (Benzoic Aldehyde)	Colorless to Yellow Liquid	1	1	1	2	X	X	X	X	2	X	X	2	2	X	1	-	-	-	1	-	1	
Benzene (Benzol)	Colorless to Yellow Liquid	1	2	X	X	X	X	X	X	X	1	X	X	1	X	1	1	1	1	1	1	X	
Benzenesulfonic Acid	Liquid above 151°F (66°C)	1	1	1	-	-	X	X	X	2	1	2	-	-	X	X	-	2	X	-	1		
Benzidine	Paste	1	2	-	X	2	X	1	X	X	-	-	-	-	X	1	1	1	1	1	1	X	
Benzoic Acid	White Crystals	1	1	1	2	X	X	X	X	2	1	2	1	-	X	-	-	-	-	-	-		
Benzoic Aldehyde (Benzaldehyde)	Colorless to Yellow Liquid	1	1	1	2	X	X	X	X	2	X	X	2	2	X	1	-	-	-	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		



Chemical Resistance Table

Chemical	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
		NOTE: Ratings are for the affect on the polymer only!																			
Benzophenone	White Powder	1	1	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-
Benzotrichloride	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	2	X	X	X	X	1	1	X	1	X	1	-	-	-	-	-	-
Benzyl Alcohol, Photo Inhibited	Water White Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	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	-	-	-	-	-	-	-	-	-	-	-	-	-
Bismuth Carbonate	White Powder	1	-	-	-	-	-	1	X	-	-	-	-	-	-	1	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	2	2	X	X	2	2	1	2	2	-	1	1	1	1	-	-	1
Black Sulfate Liquor (See "Black Liquor")	Black Alkaline Liquid	1	1	1	2	2	X	X	2	2	1	2	2	-	1	1	1	1	-	-	1
Blast Furnace Gas (Cooled)	Gas	1	1	-	-	X	X	X	X	X	1	X	-	-	X	1	1	1	-	1	-
Bleach (Chlorinated Lime)	White Powder (35-37% Cl)	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Bleach Liquor (Calcium Hypochlorite/H2O)	Clear Solution	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	1
Bordeaux Mixture (Slaked Lime &Copper Sulfate)	In Water	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	X	1	X	2	1	1	X	1
Boric Oxide	Colorless Powder	1	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-
Brake Fluid (Petroleum Base)	Liquid	1	1	-	X	1	X	X	2	X	1	X	1	1	2	1	1	1	-	1	X
Brake Fluid (Synthetic Base)	Liquid	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	2	1	1	-	2	1
Bromine	Dark Reddish Brown Liquid	1	-	-	X	X	-	-	X	-	1	-	-	X	X	1	1	1	1	1	-
Bromobenzene	Colorless Liquid	1	-	-	X	-	X	X	-	X	1	-	-	-	X	-	-	-	-	-	-
Bromochloroethane	Colorless Liquid	-	-	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	1	1	1	-	1	X
Bromotoluene	Clear Liquid	1	-	-	X	-	X	X	-	X	1	-	X	-	X	-	-	-	-	-	-
Bubble Bath Compounds	Liquid	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bunker Oil	Liquid	1	2	2	X	1	X	X	2	X	1	X	-	1	X	1	1	1	1	1	-
Butadiene (1,3)	Gas	1	1	-	X	2	X	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														-	-	-	-	-	-
Butanol (Butyl Alcohol)	Colorless Liquid	1	1	1	1	1	1	1	2	1	1	2	1	1	1	1	1	1	1	1	1
Butter	Yellow to white semi-Solid to Liquid	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Butter Oil (Use FDA Hose)	Yellow to white Liquid	1	-	-	-	-	X	X	2	-	-	-	-	-	-	1	1	1	1	1	-
Butyric Acid	Colorless Liquid	1	1	1	2	-	2	2	X	2	1	X	1	X	-	-	-	-	-	-	-
Butyl Carbitol (Diethylene Glycol Butyl Ether)	Colorless Liquid	1	1	-	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	-	-	-	-	-	-
Butyl "Oxitol™" for EG Monobutyl Ether	Colorless Liquid	1	1	-	1	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-
Butyl Acetate	Colorless Liquid	1	2	2	X	X	X	X	X	2	X	X	2	1	1	2	1	1	1	1	X
Butyl Acrylate	Colorless Liquid	1	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
Butyl Alcohol (Butanol)	Colorless Liquid	1	1	1	1	1	1	1	2	1	1	2	1	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-n-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	1	-	-	-	X	-	1	1	-	-	-
Butyl Methacrylate	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	X
Butylene Glycol (Butandiol)	Colorless Oily Liquid	1	1	2	-	-	-	-	-	-	1	-	-	X	-	-	-	-	-	-	-

1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
Chemical																					
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C																					
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	-	-	-	-	-	-	X	X	2	X	X	1
Cake Alum Solution (Al Sulphate up to 50%)	In Water	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	1
Calcium Bisulfite (Calcium Hydrogen Sulfite)	Yellow Liquid	1	1	-	-	1	2	2	1	1	1	1	1	-	1	-	1	1	-	-	1
Calcium Bromide Solution	In Water or Alcohol	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	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	-	-	1
Calcium Chloride, Dry	White solid	-	-	-	-	-	-	1	-	-	-	-	-	-	-	X	2	1	-	2	1
Calcium Chloride, Liquid (Not For Food)	In Water or Alcohol	1	1	-	1	1	1	1	1	1	1	1	1	X	1	-	-	-	-	-	-
Calcium Chloride, Liquid, Food Grade 33%	In Water	1	-	-	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	1	-	-	1
Calcium Hydrosulfide (Calcium Bisulfide)	In Alcohol or Water	1	1	-	-	1	2	2	1	1	1	1	1	-	2	-	2	1	-	X	1
Calcium Hydroxide (Hydrated or Slaked Lime)	Solid White Powder	1	1	-	-	2	1	1	1	1	X	1	1	-	X	X	X	1	-	2	1
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	1
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	1
Calcium Oxide (Lime; quick,unslaked)	White to Gray Lumps	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-
Calcium 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	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	-	-	-	-	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	-	-	-	-	-	1	X	-	-	-	-	-	-	-	-	-
Cane Sugar Liquors	In Water	1	1	-	2	1	2	2	1	2	-	1	1	-	1	1	1	1	1	2	1
Caproic Acid	Colorless or Yellow Liquid	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	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	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	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	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	X
Carbon Monoxide	Gas	1	2	1	1	2	X	X	2	X	1	1	-	-	1	1	1	1	1	1	1
Carbon Tetrachloride (Pyrene)	Colorless Liquid	1	2	X	X	X	X	X	X	X	1	X	2	1	X	X	2	2	X	2	X
Carbonic Acid	Liquid	1	1	1	1	1	1	1	1	1	1	1	1	-	X	X	1	1	2	X	1
Carbonyl Chloride (Phosgene)	Gas/ Liquid	1	X	X	X	X	X	X	X	1	1	X	-	2	-	-	-	-	-	-	-
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	1
Caustic Potash, Dry (Potassium Hydroxide)	White pellets or flakes	1	1	-	2	X	2	1	2	1	1	1	1	X	X	-	-	-	-	-	-



Chemical Resistance Table

1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
		Chemical																			
Caustic Potash, Liquid (up to 45%)	Solution in Water	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	-	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	-	-	1
Cellosolve Butyl (Eg Butyl Ether)	Colorless Liquid	1	1	-	2	X	-	-	-	-	X	-	1	-	1	1	1	1	-	-	1
Cellulose	Solid, many forms	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	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 Napthalene (Chloronapthalene)	Oily Liquid to Solid	1	-	-	X	X	X	X	X	X	1	X	-	-	-	-	-	-	-	-	-
Chlorinated Solvents (ie Tetrchloroethane)	Colorless Liquid	1	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 (3% Chlorine)	Clear, yellowish Liquid	1	1	1	X	-	-	-	-	-	1	-	-	-	-	-	X	X	-	-	1
Chloroacetic Acid (Monochloroacetic Acid)	Powder or White Crystals	1	1	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	1	2	-	-	-	-	-	-	-	-	-
Chloroacetic Acid Solution	In Water, Alcohol, Ether	1	1	X	2	-	-	-	-	-	-	-	-	X	-	X	X	X	-	2	1
Chloroacetone	Colorless Liquid	-	-	-	1	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
Chloroacetyl Chloride	Water White Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Chloroaniline	Amber Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene (Phenyl Chloride) (Monochlorobenzene)	Clear Liquid	1	2	-	X	X	X	X	X	X	1	X	X	X	X	1	1	1	1	1	X
Chlorobromomethane (Bromochloromethane)	Clear Liquid	1	2	X	X	X	X	X	X	X	X	X	X	X	X	1	1	1	-	1	X
Chlorodifluoromethane (Freon 22)	Gas	SPECIAL HOSE REQUIRED														-	-	-	-	-	-
Chloroethane (Ethylene Dichloride)	Colorless Liquid	1	2	2	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-	-	-
Chloroform	Colorless Liquid	1	2	2	X	X	X	X	X	X	1	X	X	2	X	1	1	1	1	1	X
Chloronapthalene (Chlorinated Napthalene)	Oily Liquid to Solid	1	-	-	X	X	X	X	X	X	1	X	-	-	-	-	-	-	-	-	-
Chloropentane (n-amyl chloride)	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	X	-	1	1	-	-	X
Chlorophenol	In Benzene, Alcohol, Ether	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloropicrin Mixture	Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
Chloropropylene Oxide (Epichlorohydrin)	Volatile Liquid	1	2	-	X	-	-	-	-	-	X	-	-	-	-	1	-	-	-	-	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	1	X	X	-	X	1	1	1	1	1	-
Chlorox	Colorless Liquid	1	2	1	-	-	2	2	2	2	-	2	1	1	1	-	2	1	-	-	X
Chocolate Syrup	Liquid	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
Chrome Alum (Chromium Potassium Sulfate)	In Water	1	1	-	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	2	X	X	X	X	X	1	2	1	X	X	X	X	2	X	X	1
Chromic Acid (50% Solution with water)	In Water	1	1	1	2	X	X	X	X	X	1	2	1	X	X	X	X	2	X	X	1
Chromic Acid (Chromium Trioxide)	Purplish-Red Crystals	1	X	2	-	-	-	-	-	-	1	-	-	-	X	X	X	2	X	X	1
Chromic Chloride	In Water	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Chromium Trioxide (Chromic Acid)	Purplish-Red Crystals	1	X	2	-	-	-	-	-	-	1	-	-	-	X	X	X	2	X	X	1
Cider	Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Cinene (Dipentene)	Colorless Liquid	1	2	-	X	X	X	X	-	-	1	-	-	-	-	-	-	-	-	-	-
Citgo FR Fuels	Liquid	1	1	-	1	X	-	-	-	1	-	-	-	-	2	-	-	-	-	-	-
Citric Acid Solution	In Water	1	1	1	2	X	2	2	1	2	1	1	-	X	1	X	X	1	1	X	2
Coal Gas (Coke Oven Gas, Max 120°F (49°C))	Gas	1	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-
Coal Tar	Black, viscous Liquid	1	-	-	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	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	X	X	2	-	-	-	-	-	-	1	1	1	-	-	-
Coconut Oil	Liquid above 77°F (25°C)	1	-	-	2	1	X	X	1	2	1	2	-	1	2	-	-	-	-	-	-
Cod Liver Oil	Pale Yellow Liquid	1	1	-	2	X	X	X	X	2	1	X	-	-	-	1	1	1	1	1	-
Coke Oven Gas (300°F (149°C) or less)	Gas	1	1	-	X	X	X	X	X	X	1	2	-	-	-	1	1	1	2	-	1
Copper Arsenate (Cupric Arsenate)	In Dilute Acid	1	1	-	-	-	2	2	-	-	1	2	-	-	-	1	1	1	-	-	-

1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
Copper Chloride (Cupric Chloride)	In Water	1	1	-	-	2	2	2	2	2	1	2	2	X	1	X	X	1	-	X	1
Copper Cyanide (Cupric Cyanide)	In Dilute Acids or Alkalies	1	1	-	2	2	2	2	2	2	1	2	-	-	1	-	1	1	-	X	1
Copper Nitrate (Cupric Nitrate)	In Water	1	1	-	1	1	2	2	1	1	1	1	1	-	1	X	1	1	-	X	1
Copper Sulfate (Cupric Sulfate)	In Water	1	1	-	2	1	2	2	1	2	1	1	1	X	1	X	1	1	X	X	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	X	X	2	2	1	X	2	-	1	1	1	1	1	1	X
Corn Syrup (Glucose Syrup)	Clear Liquid	1	2	-	2	2	2	2	2	2	2	2	-	-	-	1	1	1	1	-	-
Cottonseed Oil	Liquid, several colors	1	1	-	2	2	-	-	1	-	1	2	2	-	-	1	1	1	1	1	1
Creosote (high Napthalene/Anthracene)	Liquid	X	2	X	-	2	X	X	X	2	1	X	-	-	X	2	1	1	1	X	2
Cresol (Methyl Phenol)	Liquid above 95°F (35°C)	1	2	-	-	X	X	X	X	2	1	X	1	X	-	2	1	1	1	-	2
Cresylic Acid	Liquid	1	-	-	X	X	X	X	X	X	1	X	-	X	-	-	-	-	-	-	-
Crotonic Acid (Methylacrylic Acid)	White Crystalline Solid	1	1	1	2	2	X	X	-	1	1	-	1	X	-	1	X	-	-	-	-
Crude Oil (Crude Petroleum Oil)	Liquid	1	1	-	X	1	X	X	2	X	1	2	2	-	1	1	1	1	1	1	1
Crude Wax	Liquid above 200°F (93°C)	1	2	-	-	2	-	-	-	2	1	-	-	-	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	X
Cumene (Isopropyl Benzene)	Colorless Liquid	1	2	-	-	-	-	-	-	-	1	-	2	-	-	-	-	-	-	-	-
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	1
Cupric Cyanide (Copper Cyanide)	In Dilute Acids or Alkalies	1	1	-	2	2	2	2	2	2	1	2	-	-	1	-	1	1	-	X	1
Cupric Nitrate (Copper Nitrate)	In Water	1	1	-	1	1	2	2	1	1	1	1	1	-	1	X	1	1	-	X	1
Cupric Sulfate (Copper Sulfate)	In Water	1	1	-	2	1	2	2	1	2	1	1	1	X	1	X	1	1	X	X	1
Cutting Oil (Mineral Oil Base)	Liquid	1	2	-	X	1	X	X	2	X	1	X	-	-	-	1	1	1	-	1	X
Cutting Oil, Sulfur Base	Liquid	2	-	-	-	1	-	-	X	-	-	-	-	-	-	1	1	1	-	1	1
Cutting Oil, Water Soluble	Liquid	1	-	-	-	1	-	-	X	-	-	-	-	-	-	1	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	1
Cyanide, Mercuric	In Water	1	1	-	2	2	2	2	1	2	-	1	-	-	-	-	-	-	X	-	1
Cyanide, Potassium	In Water	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Cyanide, Silver	In Nitric Acid	1	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	X
Cyclohexanol	Colorless, oily Liquid	1	2	-	X	2	X	X	2	X	1	2	1	-	X	-	-	-	-	-	1
Cyclohexanone	Colorless to yellow Liquid	1	1	-	X	X	X	X	X	X	X	X	2	-	X	-	1	1	2	-	X
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 Liquids	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	-
D																					
Decalin (TM for decahydronapthalene)	Colorless Liquid	1	2	2	X	2	X	X	-	X	1	X	2	1	-	-	-	-	-	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	2	1	-	1	2	1	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	-
Detergent Sol. (Sodium dodylbenzenesulfonate)	In Water	1	2	1	1	1	X	X	2	1	-	1	-	-	1	2	1	1	1	1	1
Developing Solutions (Hypos)	Liquid	1	1	-	-	-	2	2	2	2	-	2	-	-	1	-	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	1	-	-	1
Diacetone	Colorless Liquid	1	1	-	2	X	X	X	X	2	X	X	1	1	X	1	1	1	-	1	1
Diacetone Alcohol	Colorless Liquid	1	1	-	-	X	2	2	-	2	X	2	1	-	X	1	1	1	1	1	1
Diammonium Phosphate	In Water	1	1	-	1	1	1	1	1	1	-	1	-	-	1	X	2	1	X	-	1
Diazinon	In Petroleum Solvents	1	-	-	1	-	1	1	-	-	1	-	-	-	2	-	-	-	-	-	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	2





Chemical Resistance Table

1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters						
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro	
		Chemical																				
Dibutylamine	Colorless Liquid	1	-	-	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	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	1	X	X	-	X	-	-	-	-	-	-	
Dichlorodifluoromethane (Freon 12)	Gas, Liquid @ 140 PSIG @ 100°F	SPECIAL HOSE REQUIRED														-	-	-	-	-	-	-
Dichloroethane (Ethylene Dichloride)	Colorless Oily Liquid	1	2	2	X	X	X	X	X	X	2	X	X	X	X	-	-	-	-	-	-	
Dichloroethyl Ether	Colorless Liquid	1	-	-	-	X	-	X	-	X	-	X	-	-	-	-	-	-	-	-	-	
Dichloroethylene	Colorless Liquid	1	2	X	X	X	X	X	X	X	1	X	-	-	-	-	-	-	-	-	X	
Dichloroethylene (Acetylene Dichloride)	Colorless Liquid	1	X	X	X	-	X	X	-	X	1	-	X	1	X	-	-	-	-	-	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	X	1	X	-	-	-	-	-	-	-	-	-	
Dichloropropane (Propylene Dichloride)	Colorless Liquid	1	-	-	X	X	X	X	X	X	2	X	-	-	-	-	-	-	-	-	-	
Dicyclohexylamine	Colorless Liquid	1	-	-	X	-	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	
DIDA (Diisodecyl Adipate)	Light Colored Oily Liquid	1	-	-	-	X	-	X	-	1	X	X	-	-	-	-	-	-	-	-	-	
Diesel Fuel	Liquid	1	1	1	X	1	X	X	2	X	-	X	-	1	-	1	1	1	1	1	2	
Diethanolamine (20%)	In Water or Alcohol	1	-	-	2	2	2	2	X	1	-	2	1	-	2	1	1	1	1	X	-	
Diethanolamine	Liquid above 83°F (29°C)	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	X	-	
Diethyl Ether (Ethyl Ether)	Colorless Liquid	1	2	-	X	X	X	X	X	2	X	X	1	-	2	2	1	1	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	-	1	-	
Diethyl Sebacate	-	1	1	-	-	X	X	X	X	2	2	X	2	-	-	-	1	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	-	1	1	
Diethylbenzene	Colorless Liquid	1	1	-	X	-	X	X	-	X	1	-	2	-	-	-	-	-	-	-	-	
Diethylene Dioxide (1,4 Dioxane)	Colorless Liquid	1	1	-	2	X	X	X	X	2	X	X	2	1	X	1	1	1	1	1	1	
Diethylene Ether (Dioxane)	Colorless Liquid	1	1	-	2	X	X	X	X	2	X	X	2	1	X	1	1	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	1	
Diethylene Glycol Methyl Ether (Methyl Cellosolve)	Colorless Liquid	1	1	-	1	-	X	X	-	X	1	X	1	-	-	-	-	-	-	-	-	
Diethylene Glycol Monobutyl Ether	Colorless Liquid	1	1	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	
Diethylene Glycol Monobutyl Ether Acetate	Colorless Liquid	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Diethylene Glycol Monoethyl Ether	Colorless Liquid	1	1	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	
Diethylene Glycol Monomethyl Ether	Colorless Liquid	1	1	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	
Diethylene Glycol Monomethyl Ether Acetate	Colorless Liquid	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Diethylenetriamine	Yellow Liquid	1	1	1	1	-	X	-	X	1	X	X	-	-	-	-	-	-	-	-	-	
Dihydroxyacetone	In Water	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	1	
Diisobutyl Ketone	Colorless Liquid	1	1	-	1	X	X	X	X	2	X	X	2	1	-	-	1	1	-	1	1	
Diisobutyl Phenol (Octyl Phenol)	White Flakes	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
Diisobutyl Phthalate	Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Diisobutylene	Colorless Liquids	1	1	-	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	X	X	X	X	2	X	X	-	1	-	-	1	1	-	1	-	
Diisopropylamine	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Diisopropylbenzene (meta)	Colorless Liquid	1	2	2	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	-	-	-	-	-	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	

Chemical	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
		NOTE: Ratings are for the affect on the polymer only!																			
Dimethyl Ether	Liquid under Pressure	1	1	1	1	X	X	X	X	2	X	X	-	-	-	1	1	1	1	1	-
Dimethyl Formamide	Water White Liquid	1	1	-	2	-	-	-	-	-	X	-	-	-	-	1	1	1	-	-	1
Dimethyl Phthalate	Colorless Oily Liquid	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	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethylaminomethyl Phenol (DMP)	Dark Red Liquid	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Dimethylbenzene (DMB)	Colorless Liquid	1	X	X	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-	-	-
Dimethylcarbinol (isopropyl alcohol)	Colorless Liquid	1	1	1	1	1	2	2	2	1	1	2	1	1	2	1	1	1	1	2	1
Dimethylcyclohexylamine	Water White Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethylformamide (DMF)	Water white Liquid	1	2	-	-	-	-	-	-	-	X	-	-	-	-	1	1	1	-	-	1
Dimethylketone (Acetone)	Colorless Liquid	1	1	X	2	X	X	X	X	2	X	X	1	1	X	1	1	1	1	1	2
Dimethylphenol (Xylenol)	White solid, liquid @ 68°F (20°C)	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Dinitrobenzene (Soluble in Chloroform)	In Chloroform	1	2	-	X	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Dinitrogen Tetroxide (Nitrogen Dioxide)	Liquid @ 50 PSIG @ 120°F (49°C)	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Dinitrotoluene, Solid	In Alcohol or Ether	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	-	X	-	-	-	-	-	1	-	-	-	X	-	-	-	-	-	-
Diocetyl Phthalate, di-(2-ethylhexyl) phthalate	Light Colored Liquid	1	1	-	X	X	X	X	X	X	1	X	2	-	-	1	1	1	1	1	X
Diocetyl Sebacate, di-(2-ethylhexyl) sebacate	Pale Straw Colored Liquid	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	-	2	X	X	X	X	2	X	X	2	1	X	1	1	1	1	1	1
Dioxane (Diethylene Ether)	Colorless Liquid	1	1	-	2	X	X	X	X	2	X	X	2	1	X	1	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	-	1	-	-	1	-	-	1	1	1	1	1	-
Diphenyl Phthalate	Yellow White Powder	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Dipropyl Ketone	Colorless Liquid	1	1	-	1	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
Dipropylamine	Water White Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dipropylene Glycol	Colorless Liquid	1	1	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Dipropylene Glycol Monomethyl Ether (DPM)	Colorless Liquid	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dirco Oils	Liquid	1	1	-	X	1	-	-	-	X	-	-	-	1	-	1	1	1	1	1	-
Disodium Phosphate (DSP soluble in H2O)	Colorless or White Powder	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Disodium Phosphate Solution	In Water	1	1	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Distillate Fuel Oil	Clear to Brown Liquid	1	2	-	X	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Divinylbenzene (20-25% or 50-60% Grades)	Water White to Straw Liquid	1	2	-	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	1	X	X	X	X	-	-	-	-	-	-
DMF (Dimethylformamide)	Water white Liquid	1	2	-	-	-	-	-	-	-	X	-	-	-	-	1	1	1	-	-	1
DMP (Dimethylaminomethyl phenol)	Dark Red Liquid	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Dodecylbenzene (Detergent Alkylate)	Liquid	1	2	-	X	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Dodecylphenol	Straw Colored Liquid	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	X	X	X	X	X	1	X	2	-	X	1	1	1	1	1	-
Dowtherm SR-1 (Ethylene Glycol)	Liquid	1	1	1	1	1	-	-	-	-	1	1	-	1	-	2	1	1	1	1	1
DPM (Dipropylene Glycol Monomethyl Ether)	Colorless Liquid	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Duro Oils	Liquid	1	1	-	X	1	-	-	-	X	-	-	-	1	2	1	1	1	1	1	-
E																					
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	-	-	-	-	-	-	-	-	-	-
Enamels	Liquid	1	1	-	X	-	-	-	-	-	1	-	-	1	2	-	-	-	-	-	1





Chemical Resistance Table

Chemical	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!																					
Epichlorohydrin (Chloropropylene Oxide)	Volatile Liquid	1	2	-	X	-	-	-	-	-	X	-	-	-	-	1	-	-	-	-	1
Epoxy Resin	Solid Pellet	-	-	-	1	-	-	-	1	2	X	-	-	-	-	-	-	-	-	-	-
Essential Oils	Liquid	1	2	-	X	1	X	X	2	-	1	-	-	-	2	1	1	1	1	1	-
Ethanol (Ethyl Alcohol)	Colorless Liquid	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	-
Ethanolamine (Aminoethanol)	Colorless Viscous Liquid	1	2	1	2	2	2	2	2	X	X	1	1	2	1	1	1	-	1	-	-
Ethers	Liquids	1	1	X	1	2	X	X	X	2	X	2	1	-	2	1	1	1	1	1	2
Ethyl Acetate (Acetic Ether)	Colorless Liquid	1	1	X	2	X	X	X	X	2	X	X	2	1	X	1	1	1	1	1	2
Ethyl Acetoacetate	Colorless Liquid	1	1	-	2	X	X	X	X	2	X	X	1	-	-	1	1	1	1	1	X
Ethyl Acrylate	Colorless Liquid	1	2	-	2	X	X	X	X	X	X	X	2	-	X	1	1	1	-	-	X
Ethyl Acrylate, Inhibited	Colorless Liquid	1	2	-	2	X	X	X	X	X	X	X	2	-	X	1	1	1	-	-	X
Ethyl Alcohol (Ethanol)	Colorless Liquid	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1
Ethyl Aluminum Dichloride 90°F (32°C)	Clear Yellow Liquid	1	-	-	-	X	-	X	-	X	2	X	-	-	-	-	-	-	-	-	-
Ethyl Bromide	Colorless Liquid	1	2	-	X	X	X	X	X	X	1	X	2	1	X	-	1	1	-	1	-
Ethyl Butyl Ether (Butyl Ethyl Ether)	Liquid	1	-	-	-	2	-	X	-	X	-	2	-	-	-	-	-	-	-	-	-
Ethyl Butyrate	Colorless Liquid	1	1	-	-	X	X	X	X	2	-	-	-	-	-	-	1	1	1	-	-
Ethyl Chloride	Compressed Liquid	1	2	2	X	X	X	X	X	X	1	X	-	-	X	2	1	1	1	2	X
Ethyl Chloroformate (Ethyl Chlorocarbonate)	Water White Liquid	1	-	-	X	X	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Ethyl Ether (Diethyl Ether)	Colorless Liquid	1	2	X	X	X	X	X	X	2	X	X	1	2	X	2	1	1	1	1	1
Ethyl Ether Acetate (Cellosolve Acetate)	Colorless Liquid	1	1	-	2	X	-	-	-	-	X	-	1	-	1	1	1	1	-	-	1
Ethyl Formate	Water White Liquid	1	-	-	2	X	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Ethyl Iodide	Colorless Liquid	1	-	-	X	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	X	1	X	-	-	X	2	-	-	-	-	-
Ethyl Methyl Ketone (MEK)	Colorless Liquid	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	X	1	X	-	-	-	2	1	1	-	1	-
Ethyl Phthalate (Diethyl phthalate)	Water White Liquid	1	1	-	-	X	X	X	-	2	-	-	2	-	-	-	1	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	X	X	X	X	2	X	X	1	-	-	-	1	1	-	1	-
Ethylbenzene	Colorless Liquid	1	2	-	X	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	2	1	1	1	-	-	-	-	-	-
Ethylbutyl Alcohol (Ethylbutanol)	Colorless Liquid	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	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
Ethylbutyraldehyde (Diethylacetaldehyde)	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylcellulose	Granular Solid	1	1	-	-	-	-	1	-	-	-	-	1	-	-	1	1	1	-	1	-
Ethylene Chlorohydrin	Colorless Liquid	1	1	-	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	2	1	-	1	2	1	1	1	1	1
Ethylene Glycol Formal (Dioxolane)	Water White Liquid	1	-	-	-	-	-	-	-	X	-	-	-	-	-	1	1	1	1	1	-
Ethylene Glycol Monoethylether	Colorless Liquid	1	1	-	1	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylene Glycol Monoethylether Acetate	Colorless Liquid	1	1	-	1	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylene Glycol Monomethyl Ether	Colorless Liquid	1	1	-	2	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylene Glycol N-Butyl Ether	Colorless Liquid	1	1	-	1	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylenediamine	Colorless Liquid	1	2	-	2	1	-	-	-	2	X	-	-	-	-	1	1	-	-	1	1
Ethylenediaminetetraacetic acid (EDTA)	Colorless Crystals	1	1	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Ethylhexaldehyde	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylhexanediol	Colorless Liquid	1	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylhexanol (2-ethylhexyl alcohol)	Colorless Liquid	1	1	1	1	1	1	1	-	1	1	-	1	1	1	-	-	-	-	-	-
Ethylhexoic Acid	Liquid	1	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers															Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro	
Ethylhexyl Acetate	Water White Liquid	1	1	-	1	X	-	-	X	-	X	X	-	1	-	-	-	-	-	-	-	
Ethylhexyl Acrylate	Liquid	1	2	-	-	X	-	-	-	-	X	-	-	-	X	-	-	-	-	-	-	
Ethylhexyl Alcohol (Ethylhexanol)	Colorless Liquid	1	1	1	1	1	1	1	-	1	1	-	1	1	1	-	-	-	-	-	-	
F																						
Fatty Acid	Solid, Semisolid or Liquid	1	2	2	2	2	X	X	2	2	2	X	2	-	2	2	1	1	1	2	1	
Fatty Alcohol, Blend	C8-11 Liquids, >C11 Solids	1	1	1	1	1	1	1	1	1	1	-	1	1	1	-	-	-	-	-	-	
Fatty Petroleum Alcohol	C11 or Less are Liquids	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	1	
Ferric Chloride solution	Liquid	1	1	-	-	2	-	1	2	1	1	2	1	1	1	X	X	X	X	X	1	
Ferric Nitrate	Violet Crystals	1	1	-	-	-	2	1	2	2	-	2	1	-	-	X	1	1	-	-	1	
Ferric Nitrate Solution	Liquid	1	-	-	1	1	-	1	1	1	1	1	-	1	-	X	1	1	-	-	1	
Ferric Sulfate	Yellow Crystals or Gray Powder	-	-	-	-	-	-	1	-	-	-	-	-	-	-	X	1	1	X	X	1	
Ferric Sulfate Solution	Liquid	1	1	1	2	2	2	-	2	2	1	2	1	-	1	X	1	1	X	X	1	
Ferrous Acetate Solution	Liquid in H2O or Alcohol	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	
Ferrous Chloride	Greenish-White Crystals	-	-	-	-	-	-	1	-	-	-	-	-	-	-	X	1	2	-	2	1	
Ferrous Chloride, Solution	Liquid	1	1	-	-	-	-	-	-	1	1	2	1	-	1	X	1	2	-	2	1	
Ferrous Nitrate	-	1	1	-	2	2	-	-	2	2	-	2	-	-	2	-	1	1	-	-	1	
Ferrous Sulfate Solution	Liquid	1	1	1	2	2	2	-	2	2	1	2	1	-	1	X	1	1	X	X	1	
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-Resistance 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	1	-	-	2	-	1	-	-	-	-	-	-	-	-	-	-	
Fixing Solution (Photo)	Liquid	1	1	-	-	-	2	2	2	2	-	2	-	1	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	2	-	2	2	2	-	2	1	-	X	-	-	1	1	-	-	1	
Fluoboric Acid (up to 48%)	Colorless Liquid	1	1	-	1	-	2	2	2	-	1	2	1	-	X	-	1	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	2	X	-	-	2	X	-	2	1	X	X	-	-	-	1	-	1	
Formaldehyde	Gas	-	1	-	1	-	-	-	-	-	1	-	-	1	-	X	2	1	2	1	-	
Formaldehyde Solution (up to 50%)	Liquid	1	2	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	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	2	-	X	X	1	2	X	2	1	X	X	X	2	1	-	2	1	
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															-	-	-	-	-	-
Freon 134a (HFC 134a)	Gas or Liquid	SPECIAL HOSE REQUIRED															-	-	-	-	-	-
Freon 22 (Chlorodifluoromethane)	Gas or Liquid	SPECIAL HOSE REQUIRED															-	-	-	-	-	-
Freon 23	Clear Liquid	SPECIAL HOSE REQUIRED															-	-	-	-	-	-
Fruit Juices	Liquid	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	
Fuel Oil (ASTM 1-6)	Water White to Brown Liquids	1	2	1	X	1	X	X	2	X	1	X	1	1	X	2	2	2	1	1	-	
Fumaric Acid	Colorless Crystals	1	1	1	2	-	2	2	-	-	1	-	-	-	X	-	1	1	-	-	-	
Fumaric Acid Solution (Allomalaic Acid)	Liquid	1	1	-	2	1	2	2	-	-	1	-	-	-	X	-	1	1	-	-	-	
Furan (Furfuran)	Colorless to Brown Liquid	1	1	1	X	X	X	X	X	X	-	-	1	-	X	1	1	1	1	1	-	
Furfural (Ant Oil)	Colorless to Reddish Brown Liquid	1	1	-	X	X	X	X	2	X	2	2	1	-	X	2	1	1	1	1	2	
Furfural Alcohol	Colorless to Brown Liquid	1	1	2	X	X	X	X	2	X	1	2	1	1	X	2	1	1	1	1	2	
Furfuran (Furan)	Colorless to Brown Liquid	1	1	1	X	X	X	X	X	X	-	-	1	-	X	1	1	1	1	1	-	
Furfuryl Alcohol	Colorless to Reddish Brown Liquid	1	1	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	
Fusel Oil (Amyl Alcohol, Grain Oil)	Colorless Liquid	1	1	1	2	2	2	2	2	2	1	2	1	1	1	1	1	1	1	1	-	
Fyrguard 150, 200	-	1	1	-	1	1	-	-	-	1	-	-	-	-	-	1	1	1	1	1	-	
Fyrquel 15R&O, 220R&O, 550R&O	-	1	1	-	1	X	-	-	-	1	-	-	-	-	-	1	-	-	1	-	-	





Chemical Resistance Table

Chemical	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
		1	1	-	1	X	-	-	-	1	-	-	-	-	-	1	-	-	1	-	-
Fyrquel 90, 150, 220, 300, 550, 1000	-	1	1	-	1	X	-	-	-	1	-	-	-	-	1	-	-	1	-	-	
G																					
Gallic Acid (3,4,5 Trihydroxybenzoic Acid)	In Alcohol or Glycerol	1	1	1	1	X	2	2	X	2	1	-	1	X	X	X	1	1	-	-	
Gallic Acid Solution	In Alcohol Solution	1	1	-	-	X	2	2	X	2	1	-	1	X	X	X	1	1	-	-	
Gasohol (Gasoline blended with Ethanol) ¹	Colorless Liquid	1	2	1	X	2	X	X	2	X	1	X	-	1	X	2	1	1	1	1	
Gasoline (Oxygenated - Blended With MTBE) ¹	Colorless Liquid	1	2	1	X	2	X	X	2	X	1	X	-	1	X	2	1	1	1	1	
Gasoline (Unleaded Up to 50% Aromatics) ¹	Colorless Liquid	1	2	1	X	2	X	X	2	X	1	X	1	1	X	2	1	1	1	1	
Gasoline (White) ¹	Colorless Liquid	1	2	-	X	2	X	X	2	X	1	X	-	1	X	2	1	1	1	1	
Gelatin	Flakes or Powder	-	-	-	-	-	-	1	-	-	-	-	-	1	1	-	-	-	-	-	
Glacial Acetic Acid	Clear Colorless Liquid	1	1	1	2	-	-	-	X	X	X	-	X	X	X	-	-	-	-	-	
Glacial Methacrylic Acid (GMAA)	White Crystals	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Glauber's Salt (Sodium Sulfate Decahydrate)	Crystals or Powder	1	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	
Gluconic Acid (Commercial 50% Aqueous)	Aqueous Solution	1	-	-	-	X	-	X	-	X	-	2	-	-	-	-	-	-	-	-	
Glucose	Crystals to White Powder	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	1	1	1	
Glucose Solution	Liquid	1	1	-	1	1	1	1	1	1	1	1	-	-	1	1	1	1	1	1	
Glue	Varies	1	1	-	X	2	X	X	2	X	1	1	-	2	1	2	1	1	1	X	
Glycerine (Glycerol)	Clear Viscous Liquid	1	1	-	1	1	1	1	1	1	1	1	1	-	1	2	1	1	1	1	
Glycerol (Glycerine)	Clear Viscous Liquid	1	1	-	1	1	1	1	1	1	1	1	1	-	1	2	1	1	1	1	
Glycerol Monolaurate	Liquid above 80°F (27°C)	1	1	1	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	
Glycol FR Fluids	Liquid	1	-	-	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	
Glycol Slurry	Watery suspension	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Glycols (ie Ethylene Glycol)	Clear Colorless Liquid	1	1	1	1	1	1	1	1	1	1	1	1	1	-	1	1	1	1	1	
GMAA (Glacial Methacrylic Acid)	White Crystals	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Graphite	Powdered, Flake, Crystals	1	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	
Grease	Semi-Solid	1	1	2	X	1	X	X	2	X	1	2	-	-	1	1	1	1	1	1	
Grease, Silicone Base	-	1	-	1	-	-	-	-	-	-	-	-	-	1	-	1	1	1	1	1	
Green Liquor (Effluent Alkaline Pulping)	Liquid	1	1	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	
Green Sulfate Liquor	Liquid	1	1	1	1	2	1	1	1	1	-	1	2	-	-	1	1	1	-	-	
H																					
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	X	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	
HEA Acid (2-Hydroxyethyl Acrylate)	Liquid	1	1	1	X	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	
Hematite (Iron Ore)	Black to Brick Red	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	
HEP (2-Hydroxypropyl Acrylate)	Liquid	1	1	1	X	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	
Heptachlor (In Xylene)	Liquid	1	2	-	X	2	X	X	X	X	1	-	-	1	X	-	-	-	-	-	
Heptanal (Heptaldehyde)	Colorless Oily Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Heptane	Colorless Liquid	1	2	1	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	-	-	-	-	-	
Hexachlorocyclohexane	White to Yellowish Flakes	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	
Hexachlorocyclopentadiene	Yellow Liquid	1	-	-	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	
Hexamethylenediamine, Solution	Colorless Flat Solid Leaflets	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	
Hexamethyleneimine	Clear Colorless Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Hexane	Colorless Liquid	1	X	1	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	2	X	X	-	X	1	-	1	-	-	1	1	1	-	1	
Hexyl "Cellosolve" (EG monohexyl 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	2	X	X	-	X	1	-	1	-	-	1	1	1	-	1	

1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers															Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro	
Hexylene Glycol	Colorless Liquid	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	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 (up to 98%)	Water White Liquid	1	1	-	-	-	-	-	-	-	1	-	-	-	-	X	1	1	1	X	-	
Hydrafluid 760 (Texaco and Houghton)	Liquid	1	1	-	X	1	-	-	-	X	1	-	-	1	-	1	1	1	1	1	-	
Hydrafluid AZR&O, A, B, AA, C	Liquid	1	1	-	X	1	-	-	-	X	1	-	-	1	-	1	1	1	1	-	-	
Hydrasol A (Textile Dying)	-	1	1	-	X	1	-	-	-	X	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	-	-	-	-	2	-	-	-	-	-	-	
Hydrobromic Acid (62% and less)	Colorless to Yellow Liquid	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	X	2	2	X	2	1	2	1	X	X	-	-	-	X	-	-	
Hydrochloric Acid (15%)	Colorless to Yellow Liquid	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	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)	Water White Liquid below 77°F/25°C	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	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	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	-	X	X	X	2	X	1	2	1	X	X	X	X	X	X	X	-	
Hydrofluoric Acid (70%)	Colorless Liquid	1	1	X	X	X	X	X	X	-	1	2	-	X	X	X	X	X	X	X	-	
Hydrofluoric Acid (Concentrated)	Colorless Liquid	1	1	X	X	X	X	X	X	X	2	2	1	X	X	X	X	X	X	X	-	
Hydrofluosilicic Acid	In Water	1	1	1	2	X	X	X	X	X	1	1	X	X	X	X	X	X	-	1	-	
Hydrogen (Gas)	Gas	CONTACT DENVER PRODUCT APPLICATION															-	-	-	-	-	-
Hydrogen Bromide Liquified (Anhydrous)	Liquid	1	-	-	1	X	X	X	-	X	1	-	-	-	-	-	-	-	-	-	-	
Hydrogen Bromide Solution (HydroBromic Acid)	Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Hydrogen Bromide, Anhydride	Colorless Gas	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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	-	-	-	
Hydrogen Peroxide (35% or less)	Liquid	1	1	1	1	2	X	X	1	X	1	1	1	1	1	X	2	1	1	X	-	
Hydrogen Peroxide (50% or less)	Liquid	1	2	1	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	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, Liquified	Liquid @ 410 PSI, 120°F (49°C)	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	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	





Chemical Resistance Table

Chemical	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters						
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro	
		NOTE: Ratings are for the affect on the polymer only!																				
Hydroxyethyl Acrylate (HEA)	Liquid	1	1	1	X	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	
Hydroxyethyl Acrylate Acid (HEA Acid)	Liquid	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	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	2	X	X	X	X	X	1	2	-	-	-	-	-	-	-	-	-	
I																						
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	-	-	-	-	-	-	-	-	-	-	
Iodine, In Alcohol	Liquid	1	1	1	1	-	X	X	2	-	1	-	1	-	1	-	-	-	-	-	-	
Iron Acetate Liquor (Black Liquor)	Black Liquid	1	1	1	2	2	X	X	2	2	1	2	2	-	1	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	1	
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	-	-	-	-	-	-	-	-	-	
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	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	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	-	X	X	X	X	X	X	1	-	-	-	-	1	1	1	-	-	-	
Isooctane	Colorless Liquid	1	2	-	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	-	-	-	-	-	-	-	-	-	-	
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	2	2	2	1	1	2	1	1	2	1	1	1	1	2	1	
Isopropanolamine (MIPA)	Liquid	1	2	-	-	2	-	2	-	1	X	X	-	-	-	-	-	-	-	-	-	
Isopropyl Acetate	Colorless Liquid	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	2	2	2	1	1	2	1	1	2	1	1	1	1	2	1	
Isopropyl Benzene (Cumene)	Colorless Liquid	1	2	-	-	-	-	-	-	-	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	-	

Chemical	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!																					
Isopropylamine	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isopropylbenzene (Cumene)	Colorless Liquid	1	2	-	-	-	-	-	-	-	1	-	2	-	-	-	-	-	-	-	-
Isopropyltoluene (Cymene)	Colorless Liquid	1	-	-	-	-	-	-	-	-	1	-	-	1	-	1	1	1	1	1	-
J																					
Jet Fuel A and A1 ²	Liquid	1	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Jet Fuel JP1 ²	Liquid	1	1	-	X	1	X	X	2	X	1	X	-	1	X	-	-	-	-	-	-
Jet Fuel JP10 (Tetrahydroxydicyclopentadiene) ²	Liquid	1	-	-	X	X	X	X	X	X	1	X	-	1	X	-	-	-	-	-	-
Jet Fuel JP4 ²	Liquid	1	1	-	X	1	X	X	2	X	1	X	-	1	X	2	1	1	2	1	-
Jet Fuel JP5 ²	Liquid	1	1	-	X	1	X	X	X	X	1	X	-	1	X	2	1	1	2	1	-
Jet Fuel JP8 ²	Liquid	1	1	-	X	1	X	X	X	X	1	X	-	1	X	2	1	1	2	1	-
K																					
Kaolin Clay	White to Yellowish Powder	1	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Karo Syrup	Yellow Liquid	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	1	1	-	-	-
Kerosene	Water White Oily Liquid	1	1	-	X	1	X	X	X	X	1	X	1	1	2	1	1	1	1	1	-
Ketchup	Red Liquid	-	-	-	-	1	-	-	1	-	-	-	-	1	-	-	1	1	-	-	-
Ketoglutaric Acid	In Water or Alcohol	1	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ketones (ie Acetone, MEK, Cyclohexanone)	Generally Liquids	1	1	1	2	X	X	X	X	2	X	X	-	1	X	1	1	1	1	1	-
Koch Acid	White Solid	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
L																					
Lacquer - Alcohol or Acetate as Solvent	Solution	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	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	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	2	1	-	-	1	-	1	1	-	X	1	X	2	1	X	2	-
Lactic Acid, USP 85-90% or less	Colorless to Yellow Syrupy Liquid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	2	1	X	2	-
Lactol	-	1	1	-	-	2	-	-	2	-	-	-	-	-	-	1	1	1	-	1	-
Lard (Fat of the Hog)	Liquid above 108°F (42°C)	1	1	1	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	-	-	-
Latex Paint	Liquid	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	1	1	-	1	-
Lead Acetate Solution	Solution	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	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	2	X	X	X	1	X	1	2	-	-	2	2	1	1	X	X	-
Lime, Chlorinated (Bleaching Solution)	Solution	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	-	-	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 Oil	Yellow Amber to Brown Liquid	1	1	X	2	2	X	X	2	-	1	1	1	1	1	2	1	1	1	2	-
Liquid Soap	Liquid	1	1	1	2	-	2	2	-	2	-	-	-	-	2	1	1	1	1	1	-
Lithium Chloride	White Crystals	-	-	X	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-





Chemical Resistance Table

Chemical	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
		NOTE: Ratings are for the affect on the polymer only!																			
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	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	1	-
M																					
Machine Oil Under 135°F (57°C)	Liquid	1	1	-	X	1	X	X	1	X	1	2	-	1	2	1	1	1	1	1	-
Magnesite	White to Brown Crystalline Solid	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	Powder	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium Acetate	Colorless Crystalline Aggregate	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium Acetate Solution	In Water or Alcohol	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	-	-	-
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	-	-	-	-	-	-	-	-	-	-
Magnesium Chloride, Hydrated (in H2O or Alcohol)	Solution	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	1	-
Magnesium Nitrate Solution (in H2O or Alcohol)	Liquid Solution	1	1	1	1	1	-	-	-	-	1	-	-	-	-	1	1	1	X	1	-
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	2	1	1	1	1	-	1	2	1	1	-	1	-
Malathion (Ag Spray Dilute)	Clear to Amber Liquid	1	1	1	2	-	X	X	-	1	1	-	-	1	1	1	1	1	-	1	-
Malathion (Ag Spray)	Clear to Amber Liquid	1	1	-	2	-	-	-	-	1	-	-	-	1	-	1	1	1	-	1	-
Maleic Acid	Liquid	NO HOSE AVAILABLE														2	2	1	-	-	-
Maleic Acid Solution	Solution	1	1	1	1	2	2	2	X	-	7	-	-	-	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 H2O or Alcohol)	Solution	1	1	1	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Malt Extract (Maltine)	Light Brown Viscous Liquid	1	1	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Malt, Dry	Yellow to Amber Grain	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Maltine (Malt Extract)	Light Brown Viscous Liquid	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	-	-	-	-	-	-	-	-	-	-	-	-	-
MAPP Gas (Methylacetylene Propadiene)	Liquid	USE 20B-HB HOSE ONLY														-	-	-	-	-	-
Maxmul (Penzoil Hydraulic Fluid)	Liquid	1	-	-	-	1	-	-	2	-	-	-	-	-	-	1	-	1	-	-	-
Mayonnaise	Semi-Liquid	1	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
MBK (Methyl Butyl Ketone)	Colorless Liquid	1	1	-	2	X	X	X	X	2	X	X	2	-	X	1	1	1	1	1	-
MEA (Ethanolamine)	Colorless Viscous Liquid	1	1	1	2	2	2	2	2	1	X	X	1	-	2	-	-	-	-	-	-
MEK (Ethyl Methyl Ketone)	Colorless Liquid	1	2	1	2	X	X	X	X	2	X	X	2	1	X	1	1	1	1	1	-
Mercuric Chloride	White Powder	-	-	-	-	-	-	1	-	-	-	-	-	-	-	X	1	1	X	X	-
Mercuric Chloride Solution (in H2O, or Alcohol)	Solution	1	1	-	2	2	2	1	1	2	-	1	1	-	2	X	1	1	X	X	-
Mercuric Cyanide	Colorless Transparent Prisms	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	X	-	-
Mercuric Cyanide Solution (in H2O 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	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	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	1	-
Methallyl Alcohol (Methylallyl Alcohol)	Colorless Liquid	1	-	-	-	1	-	2	-	2	2	2	-	-	-	-	-	-	-	-	-
Methane	Gas	1	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-

Chemical	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
		NOTE: Ratings are for the affect on the polymer only!																			
Methanol (Methyl Alcohol)	Colorless Liquid	1	1	1	1	1	1	1	1	X	1	1	1	2	1	1	1	1	2	-	
Methionine	White Crystalline Powder	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
Methoxychlor Solution (in Alcohol)	Solution	1	1	-	-	-	-	-	-	-	-	-	1	-	1	1	1	-	-	-	
Methylamine (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	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	X	X	X	X	X	X	X	-	-	-	1	1	1	1	1	
Methyl Acrylate Acid(Methylacrylic Acid)	White Solid	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	X	1	1	1	2	1	1	1	1	2	
Methyl Bromide	Liquid @ 55 PSIG @ 120°F (49°C)	1	1	-	X	X	X	X	X	X	1	X	-	1	X	1	1	1	-	1	
Methyl Bromoacetate	Colorless to Straw Colored Liquid	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Methyl Butanethiol (Butyl Mercaptan)	Liquid	1	1	-	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	-	-	-	-	-	
Methyl Butyl Ketone (MBK)	Colorless Liquid	1	1	-	2	X	X	X	X	2	X	X	2	-	X	1	1	1	1	1	
Methyl Carbitol (Diethylene Glycol Methyl Ether)	Colorless Liquid	1	1	-	1	-	X	X	-	X	1	X	1	-	-	-	-	-	-	-	
Methyl Cellosolve (Diethylene Glycol Methyl Ether)	Colorless Liquid	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	1	X	X	-	X	1	1	1	-	1	
Methyl Chloroform (1,1,1 Trichloroethane)	Colorless Liquid	1	2	-	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-	-	
Methyl Chloroformate	Colorless Liquid	1	-	-	X	X	X	X	X	X	1	X	-	-	-	-	-	-	-	-	
Methyl Cyanide (Acetonitrile)	Colorless Liquid	1	1	2	2	X	2	2	X	X	X	X	1	-	1	1	1	-	-	-	
Methyl Cyclohexane	Colorless Liquid	1	-	-	X	1	X	X	-	X	1	X	2	1	-	-	-	-	-	-	
Methyl Ethyl Ketone (MEK)	Colorless Liquid	1	2	1	2	X	X	X	X	2	X	X	2	1	X	1	1	1	1	1	
Methyl Formate	Colorless Liquid	1	1	-	2	X	X	X	2	2	X	X	-	-	-	1	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	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	1	
Methyl Methacrylate	Colorless Liquid	1	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	1	2	
Methyl Propyl Carbinol (2 Pentanol)	Colorless Liquid	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	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	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	-	-	-	-	-	-	-	-	-	
Methylamine (30-40% in H2O)	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	2	X	-	-	X	-	1	2	-	X	X	-	-	-	-	-	
Methyldiethanolamine	Colorless Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Methylene Bromide	Clear Liquid	1	-	-	-	2	-	-	-	-	1	-	-	-	X	-	-	-	-	-	
Methylene Chloride (Dichloromethane)	Colorless Liquid	1	1	2	X	X	X	X	X	X	2	X	X	X	X	1	1	1	1	1	





Chemical Resistance Table

Chemical	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
		1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!																			
Methylene Dichloride	Colorless Liquid	1	1	-	X	X	X	X	X	X	1	X	X	X	X	1	1	1	X	1	-
Methylene Dichloride (Methylene Chloride)	Colorless Liquid	1	1	2	X	X	X	X	X	X	1	X	X	X	X	1	1	1	X	1	-
Methylene Diphenyl Diisocyanate, MDI	Liquid above 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																			
Mineral Oil	Colorless Liquid	1	1	1	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	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	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	2	-	-	-	-	-	-	-	X	-	X	X	X	-	2	1	-
Monochlorobenzene	Clear Liquid	1	2	-	X	X	X	X	X	1	X	X	X	X	1	1	1	1	-	1	-
Monoethanolamine	Colorless Liquid	1	2	1	2	2	2	2	2	2	X	X	1	1	2	1	1	1	-	1	-
Monoethylamine	Liquid @ 15 PSIG @ 120°F (49°C)	1	2	-	1	X	X	X	X	2	X	X	1	-	-	-	1	1	-	1	-
Monoethylamine Solution (70% or less)	Liquid Solution	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Monoglycerides	Liquid to Solid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Monomethylamine (Methyamine)	Liquid @ 120 PSIG @ 120°F (49°C)	1	-	-	-	-	-	-	-	-	-	-	-	-	X	1	1	1	-	-	-
Monopentaerythritol (Pentaerythritol)	White Powder	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Monopentaerythritol Solution	Liquid Solution	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	1	X	X	2	X	1	2	1	1	2	1	1	1	1	1	-
Mould Oil	Liquid	1	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-
Mouth Wash	Liquid	1	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	-
MTBE (Methyl Tertiary Butyl Ether)	Colorless Liquid	-	2	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
Muriatic Acid (Hydrochloric)	Colorless to Yellow Liquid	1	1	1	X	X	2	2	X	2	1	2	1	X	X	X	X	X	X	X	-
Mustard	Liquid	1	-	-	-	-	1	1	1	1	-	1	-	-	-	X	1	1	-	-	-
N																					
n-Hexaldehyde	Colorless Liquid	1	1	-	2	X	X	X	2	1	-	-	-	-	-	-	-	-	-	-	-
N-Methyl-2-Pyrrolidone	Colorless Liquid	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
n-Octane	Colorless Liquid	1	2	1	X	1	X	X	-	X	1	X	1	1	X	-	-	-	-	-	-
Naphtha (Low Aromatic Content)	Liquid	1	1	-	X	2	X	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 is Dark Fluid	1	1	-	-	2	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-
Neohexane	Colorless Liquid	1	-	-	X	1	-	-	2	-	1	-	-	1	-	-	-	-	-	-	-
Neutral Oil	Liquid	1	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	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	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	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	-	-	-	-	-	-
Nickel Sulfate	Yellow Green to Blue Crystals	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2	1	X	X	-
Nickel Sulfate Solution	Solution	1	1	-	2	2	2	2	2	2	1	2	1	-	1	-	2	1	X	X	-
Nicotine Salts (ie Nicotine Hydrochloride)	Colorless Oil	1	1	-	-	-	-	-	-	-	-	-	-	-	1	1	X	2	-	-	-
Niter Cake (Sodium Bisulfate)	Colorless Crystals to White Lumps	1	1	-	1	1	1	1	1	1	1	1	1	1	1	X	1	1	X	X	-
Niter Cake Solution	Solution	1	1	1	2	-	X	X	-	2	1	1	1	-	-	-	-	-	-	-	-
Nitric Acid (25% or less)	Colorless Liquid	1	1	1	2	X	X	X	X	2	1	2	1	X	X	X	2	2	-	X	-
Nitric Acid (10%)	Transparent or Yellowish Liquid	1	1	1	1	X	X	X	X	2	1	2	1	X	X	X	2	2	-	X	-
Nitric Acid (25%)	Transparent or Yellowish Liquid	1	1	1	2	X	X	X	X	2	1	2	1	X	X	X	2	2	-	X	-

1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
Chemical																					
Nitric Acid (35% or less, 26 Degrees Baume)	Colorless Liquid	1	1	1	2	X	X	X	X	2	1	1	X	X	X	X	2	2	-	X	-
Nitric Acid (52% or less, 36 Degrees Baume)	Colorless to Yellow Liquid	1	2	X	X	X	X	X	X	X	1	2	X	X	X	X	2	2	-	X	-
Nitric Acid (61% or less, 40 Degrees Baume)	Colorless to Yellow Liquid	1	2	X	X	X	X	X	X	X	1	2	X	X	X	X	2	2	-	X	-
Nitric Acid (63.5% or less)	Transparent or Yellowish Liquid	1	X	X	X	X	X	X	X	X	1	X	X	X	X	X	2	2	-	X	-
Nitric Acid (67% or less, 42 Degrees Baume)	Colorless to Yellow Liquid	1	X	X	X	X	X	X	X	X	1	X	X	X	X	X	2	2	-	X	-
Nitric Acid (95% or less, 48.5 Degrees Baume)	Yellow Liquid	1	X	X	X	X	X	X	X	X	1	X	X	X	X	X	2	2	-	X	-
Nitric Acid (Red Fuming)	Red Liquid	1	X	X	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-	-	-
Nitrobenzene	Yellow Liquid @ 43°F (6°C)	1	2	-	2	X	X	X	X	X	2	X	X	2	X	1	1	1	1	1	-
Nitroethane	Colorless Liquid	1	1	-	2	X	2	2	X	2	-	2	1	-	-	-	1	1	-	1	-
Nitrogen (Cryogenic Liquid)	Liquid	NO HOSE AVAILABLE														1	1	1	1	1	-
Nitrogen (Gas)	Colorless Gas	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-
Nitrogen Dioxide (Nitrogen Tetroxide)	Liquid @ 50 PSIG @ 120°F (49°C)	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Nitrogen Fertilizer (Ammonia, Urea)	Solutions in Water	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Oxide (Nitrous Oxide)	Gas	1	1	-	2	X	X	X	X	1	1	1	1	X	X	1	1	1	-	X	-
Nitrogen Tetroxide (Nitrogen Dioxide)	Liquid @ 50 PSIG @ 120°F (49°C)	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Nitromethane	Colorless Liquid	1	-	-	2	X	-	2	X	2	X	X	-	1	X	-	1	1	-	1	-
Nitropropane	Colorless Liquid	1	1	-	2	X	X	X	X	2	X	-	-	1	-	-	1	1	-	1	-
Nitrosyl Chloride	Yellow-Red Liquid or Gas	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-
Nitrous Acid (Up to 10%)	Light Blue Liquid	1	1	1	-	-	-	-	1	-	-	1	-	1	1	X	1	1	X	X	-
Nitrous Oxide (Nitrogen Oxide)	Gas	1	1	-	2	X	X	X	X	1	1	1	1	X	X	1	1	1	X	-	-
Nitrous Oxide, Compressed Liquid	Liquid @ 800 PSIG @ 68°F (20°C)	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nonene (1-nonylene)	Colorless Liquid	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Nonyl Alcohol (Octyl Carbinol)	Colorless Liquid	1	1	1	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Nonylene (Nonene)	Colorless Liquid	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
O																					
Octadecanoic Acid (Stearic Acid)	Colorless Waxy Solid	1	1	1	2	2	2	2	2	2	1	2	1	1	1	X	2	1	X	X	-
Octanoic Acid (Caprylic Acid)	Colorless Oily Liquid	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
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	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	X	-	-	-	-	-	-	-	-	-
Octyl Carbinol (Nonyl Alcohol)	Colorless Liquid	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	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	-	X	1	X	X	2	2	1	X	1	-	2	1	1	1	1	1	-
Oils, Mineral (Aliphatic or Aromatic)	Liquids	1	2	-	X	2	X	X	X	X	1	2	2	1	X	-	-	-	-	-	2
Oils, Vegetable (Soybean, Coconut, Corn)	Liquids	1	1	-	X	1	X	X	-	X	1	X	-	1	-	-	-	-	-	-	1
Oleic Acid (fatty acid)	Yellow to Red Oily Liquid	1	2	2	2	2	X	X	2	2	2	X	2	-	2	2	2	1	1	2	1
Oleum (Fuming Sulfuric, 30% SO3 or less)	Clear to Off White Fuming Liquid	1	X	X	X	X	X	X	X	X	1	X	X	X	X	-	-	1	-	-	X
Olive Oil	Yellow to Green Liquid	1	1	1	2	2	X	X	X	2	1	X	2	1	2	2	1	1	1	2	1
Ortho-Dichlorobenzene (also meta and para)	Colorless Liquid	1	2	-	X	X	X	X	X	X	1	X	X	1	X	-	1	1	-	1	-
Ortho-xylene (1,2 Dimethylbenzene)	Clear Colorless Liquid	1	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	1
Oxalic Acid (50%)	Crystals in H2O	1	2	1	2	X	X	X	X	2	1	2	1	X	X	-	-	-	-	-	-
Oxygen	Colorless Gas	1	1	-	1	2	2	2	-	1	1	1	1	-	-	-	-	-	-	-	-
Oxygen, Refrigerated Liquid	Liquid @ 200 PSIG @ -146°C	NO HOSE AVAILABLE														-	-	-	-	-	-
Ozone	Gas	1	2	2	1	X	X	X	2	2	2	2	1	2	1	1	1	1	1	1	1
P																					
Paint (Emulsion or Latex)	Liquid	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	2	X	X	-	X	1	X	-	1	-	-	-	-	-	-	-
Paint Remover	Liquid or Paste	1	2	-	X	X	X	X	X	X	1	X	-	X	-	-	-	-	-	-	-





Chemical Resistance Table

Chemical	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
		NOTE: Ratings are for the affect on the polymer only!																			
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	X	X	2	2	1	X	1	-	-	1	2	1	1	X	1
Papermakers Alum (Aluminum Ammonium Sulfate)	In Water	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paraffin (Aliphatic Hydrocarbon)	Varies from Gas to Waxy Solid	1	1	1	X	1	X	X	2	X	1	X	1	-	-	2	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	-	-	1	-	-	2	X	-	-	-	-	2	1	1	1	1	1	1
Pelargonic Acid	Colorless to Yellow Oil	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachloroethane	Colorless Liquid	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol In Oil	In Oil (Wood Preservative)	1	1	1	X	X	X	X	X	1	1	-	-	-	X	-	-	-	-	-	-
Pentaerythritol (Monopentaerythritol)	White Powder	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentane	Colorless Liquid	1	X	X	X	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-
Pentanol (Methyl Propyl Carbinol)	Colorless Liquid	1	1	1	1	-	-	-	-	1	1	-	1	-	-	-	-	-	-	-	-
Pentanone (Methyl Propyl Ketone)	Water White Liquid	1	-	-	2	X	-	X	X	2	X	X	-	-	X	-	-	-	-	-	-
Pentasil (Amyl alcohols, primary and secondary)	Liquid	1	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	1	2	-	X	X	-	2	1	-	-	1
Perchloroethylene	Colorless Liquid	1	2	-	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	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	1	X	X	X	X	-	-	-	-	-	-
Petroleum Naphtha Flash Point Over 200 Degrees	Liquid	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Petroleum Oils (Refined)	Liquid	1	1	1	X	1	X	X	2	X	1	2	-	1	1	-	-	-	-	-	-
Petroleum Oils (Sour)	Liquid	1	1	1	X	1	X	X	2	X	1	X	-	-	2	-	-	-	-	-	-
Petroleum Paraffin Wax	Solid with low Melt Points	1	2	2	X	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Phenol (Carbolic Acid)	White or Pink Crystals	1	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	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	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenyl Acetate	Water White Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenyl Chloride (Chlorobenzene)	Clear Volatile Liquid	1	2	-	X	X	X	X	X	X	1	X	X	X	X	1	1	1	1	1	X
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)	Gas, Liquid 60 PSI @ 120°F (49°C)	1	X	X	X	X	X	X	X	2	1	X	-	2	-	-	-	-	-	-	-
Phosphate Ester Hydraulic Fluid	Liquid	1	1	1	1	X	X	X	X	-	-	X	-	2	-	-	-	-	-	-	-
Phosphate Rock	Solid	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphate, Trisodium	In Water	1	1	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Phosphoric Acid (100%)	Crystals	1	2	X	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Phosphoric Acid (35% or less)	Colorless Liquid	1	1	1	1	2	2	2	2	2	1	1	1	-	-	X	1	1	X	2	1
Phosphoric Acid (50%)	Colorless Liquid	1	1	1	1	2	2	2	2	2	1	1	1	X	X	X	1	1	X	2	1
Phosphoric Acid (75%)	Colorless Liquid	1	2	1	2	-	-	-	-	-	1	1	1	X	X	X	2	2	X	X	1
Phosphoric Acid (85%)	Syrupy Liquid	1	2	1	2	X	X	X	X	X	1	1	1	X	X	X	2	2	X	X	1
Phosphoric Acid (90%)	Syrupy Liquid	1	2	1	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Picric Acid (Solution)	In Water	1	2	2	2	-	-	-	-	-	1	-	-	-	-	X	1	1	X	X	1
Picric Acid (Trinitrophenol)	Yellow Crystals	1	2	2	2	2	2	2	2	2	1	2	-	X	1	X	1	1	X	X	1

1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers															Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro	
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	2	X	X	X	X	1	-	2	1	X	1	1	1	-	-	-	
Piperazine Hydrochloride Solution (34%)	In Water	1	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pitch	In Aromatic Hydrocarbons	1	2	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	-	-	1	
Pluronic (Block Polymer with Hydroxyl by BASF)	Liquid	1	1	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	
Polyester Plastic	-	1	1	-	-	-	-	-	-	2	-	-	2	-	-	-	-	-	-	-	-	
Polyethylene Glycol	Colorless Liquid to glassy Solid	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	-	-	-	-	-	-	-	-	-	
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	2	1	-	1	-	-	-	-	-	-	-	-	-	
Potash (Potassium Carbonate) Aqueous Solution	Liquid	1	1	-	1	-	1	1	1	1	1	1	-	1	1	2	1	1	-	X	1	
Potassium Acetate	White Powder	1	1	-	2	2	2	2	2	2	X	2	1	-	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	-	-	-	-	-	1	
Potassium Bromide	White Crystals or Powder	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	2	1	1	-	X	1	
Potassium Carbonate, Liquid	Colorless to Cloudy Liquid	1	1	-	1	1	1	1	1	1	1	1	-	1	1	2	1	1	-	X	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	-	-	-	-	-	-	
Potassium Chromate	Yellow Crystal	1	2	-	2	X	X	X	2	2	1	2	1	2	1	-	-	-	-	-	1	
Potassium Cuprocyanide	White Crystalline Solid	1	-	-	1	1	1	1	1	1	1	1	-	2	1	-	-	-	-	-	1	
Potassium Cyanide	White Crystal	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
Potassium Dichromate	White Crystalline Powder	1	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-	-	-	-	-	
Potassium Ferrocyanide	Yellow Crystal or Powder	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	
Potassium Fluoride	White Crystalline Powder	1	-	-	-	-	-	-	-	-	-	-	-	-	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	2	2	2	2	-	1	2	-	1	1	1	-	-	-	-	-	-	
Potassium Hydroxide, Liquid	Colorless to Cloudy Liquid	1	1	-	1	2	2	2	2	1	X	2	-	X	X	-	-	-	-	-	-	
Potassium Iodide	White Solid	1	-	-	1	1	-	1	-	1	1	1	-	1	-	-	-	-	-	-	2	
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	-	-	-	-	-	-	
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	CONTACT DENVER PRODUCT APPLICATION															-	-	-	-	-	-
Propanediol	Colorless Liquid	1	1	-	1	1	-	-	X	1	1	2	-	-	-	-	-	-	-	-	-	
Propanol (Propyl Alcohol)	Colorless Liquid	1	1	1	1	-	-	-	-	1	1	-	1	1	2	-	-	-	-	-	-	
Propionic Acid	Colorless Oily Liquid	1	1	1	2	X	2	2	X	2	1	2	-	-	-	1	1	-	-	-	-	
Propyl Acetate	Colorless Liquid	1	1	1	-	-	-	-	-	-	X	-	2	-	-	-	-	-	-	-	-	
Propyl Alcohol (Propanol)	Colorless Liquid	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	-	-	-	-	-	-	-	-	-	





Chemical Resistance Table

Chemical	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
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	2	1	-	-	-	-	-	-	-
Propylene Oxide	Colorless Liquid	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Purina Insecticide	-	1	1	-	2	X	-	-	X	2	2	-	-	2	-	1	1	1	1	2	-
Puopale 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	-	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	X
Pyrethrum	Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Pyridine (50%)	-	1	2	-	-	-	-	-	X	-	X	X	-	-	X	-	1	1	1	1	-
Pyrogard 160, 230, 630	Liquid	1	1	-	-	-	-	-	-	-	2	-	-	-	-	1	1	1	-	-	-
Pyrogard 51, 53, 55	Liquid	1	1	-	2	X	-	-	-	2	-	-	-	-	-	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	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Q																					
Quenching Oil	Liquid	1	-	-	-	2	-	-	2	-	-	-	-	-	-	-	1	1	1	-	-
Quintolubric 822	Liquid	1	1	-	2	1	-	-	2	X	1	-	-	1	-	1	1	1	1	1	-
R																					
Ramrod (Ag Spray)	-	1	1	-	-	-	-	-	-	-	-	-	-	1	-	1	1	1	1	1	-
Rando Oils	Liquid	1	1	-	X	1	-	-	-	X	-	-	-	1	-	1	1	1	1	1	-
Rape Seed Oil	Brownish to yellow Liquid	1	1	-	2	-	-	-	-	2	-	X	-	2	-	1	1	1	1	1	-
Red Oil (Commercial Oleic Acid) (MIL-5606)	Liquid	1	2	2	2	2	X	X	2	2	2	X	2	1	2	2	2	1	1	2	1
Refined Wax (Petroleum)	-	1	1	-	-	1	X	X	2	-	1	-	-	1	-	1	1	1	-	1	-
Regal Oils R&O	Liquid	1	1	-	X	1	-	-	-	X	-	-	-	1	2	1	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rubilene Oils	Liquid	1	1	-	X	1	-	-	-	X	-	-	-	1	2	-	-	-	-	-	-
S																					
Salicylic Acid	White Powder	1	1	1	2	X	2	2	-	2	2	-	-	1	1	-	1	1	2	-	-
Salt Water (Sea Water)	Liquid	1	1	-	1	2	2	X	2	1	1	2	-	1	1	2	1	1	-	2	-
Sauerkraut	-	1	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
Sea Water	Colorless Liquid	1	1	-	1	2	2	X	2	1	1	2	-	1	1	2	1	1	-	2	-
Sevin	-	1	2	-	2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Sewage	Sludge	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	-	-	-	-	-	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	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	1

1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers															Couplings / Adapters				
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
Chemical																					
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	-	-	-	-	-	1
Sodium Bicarbonate	White Crystal 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	1	X	1	1	X	X	-
Sodium Bisulfite	White Crystals or Powder	1	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	1	2	1	1	-	2	1
Sodium Carbonate (Soda Ash)	Grayish Powder	1	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	X	2	1
Sodium Chlorate	Colorless Crystals	1	-	-	1	1	1	1	2	2	1	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	-
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	1	2	1	1	X	X	-
Sodium Cyanide	White Crystalline Powder	1	1	-	1	1	1	1	1	1	1	1	1	1	1	2	1	1	X	X	-
Sodium Dichromate	Red to red-orange Crystals	1	-	-	1	1	2	2	2	1	1	2	1	-	1	-	-	-	-	-	1
Sodium Ferricyanide	Ruby-red Crystals	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Sodium Ferrocyanide	Yellow, transparent Crystals	1	-	-	-	-	-	-	-	-	-	-	-	-	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	-	-	-	-	-	-	-	-	-
Sodium Hydroxide (40%)	Colorless Liquid	1	1	1	2	2	1	1	1	2	1	1	1	X	-	2	1	1	X	X	-
Sodium Hydroxide (50% Under 212°F (100°C))	Colorless Liquid	1	1	2	2	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
Sodium Hydroxide (50%, Under 115°F (46°C))	Colorless Liquid	1	1	2	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	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	2	2	1	1	1	2	1	1	X	-	-	X	X	2	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	-
Sodium Hypochlorite (5%)	White Liquid	1	2	1	1	X	X	X	-	-	1	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	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	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	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	-	-	-	-	-	1
Sodium Sulfate	White Crystals or Powder	1	1	-	1	1	2	2	1	1	1	1	1	1	1	-	-	-	-	-	1
Sodium Sulfate Decahydrate (Glauber's Salt)	Crystals or Powder	1	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium Sulphydrate	Colorless to cloudy Liquid	1	2	-	1	2	X	2	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	1	-	-	-	-	-	1
Sodium Sulfide Solution	Colorless to cloudy Liquid	1	2	-	1	2	-	2	2	1	2	2	-	X	-	-	-	-	-	-	1
Sodium Sulfite	White Crystals or Powder	1	1	-	2	2	2	2	2	2	-	2	1	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 Sulphydrate	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	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	1	-
Sour Crude Oil	Liquid	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
Soybean Oil	Pale yellow oil	1	1	1	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	1	2	X	X	X	-	1	1	-	-	-





Chemical Resistance Table

Chemical	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
1 = Preferred - Constant Contact 2 = Acceptable - Intermittent Contact X = Not Recommended - = No Data NOTE: Ratings are for the affect on the polymer only!																					
Stannic Chloride	Colorless, fuming Liquid	1	1	-	-	2	2	2	X	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	-	-	-	-	-	-	1
Starch	White amorphous Powder	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	-	-	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	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	-	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	2	-	2	2	-	2	X	2	X	2	-
Sucrose Solutions	Liquid	1	1	-	-	1	1	1	1	1	-	1	-	-	-	1	1	1	-	-	-
Sugar, Liquid, Blended	Liquid	1	1	-	1	1	1	1	1	1	2	-	-	-	-	-	-	-	-	-	-
Sugar, Syrup	Liquid	1	1	-	1	1	1	1	1	1	2	-	-	-	-	-	-	-	-	-	-
Sulfamic Acid	In Water	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	-	-	-	-	-	-	1
Sulfur (Under 200°F (93°C)	Yellow Crystals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfur Chloride	Yellow Oily Liquid	1	2	-	X	X	X	X	X	X	1	2	-	2	2	X	X	2	-	X	-
Sulfur Dioxide	Colorless Gas or Liquid	-	-	-	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	2	1	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	X	-
Sulfuric Acid (30%)	Colorless Water Solution	1	1	1	1	2	2	2	1	1	1	1	1	X	-	X	X	2	X	X	-
Sulfuric Acid (50%)	Colorless Water Solution	1	1	1	1	X	X	X	2	1	1	1	1	X	-	X	X	2	X	X	-
Sulfuric Acid (60%) (48.5 deg Baume)	Colorless Liquid	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	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	X	X	X	X	X	X	1	X	X	X	-	X	X	2	X	X	-
Sulfuric Acid (93%)	Colorless to Brown Oily Liquid	1	X	1	X	X	X	X	X	X	1	X	X	X	-	X	X	2	X	X	-
Sulfuric Acid (96%)	Colorless Liquid	1	X	1	X	X	X	X	X	X	1	X	X	X	-	X	X	2	X	X	-
Sulfuric Acid (98%)	Colorless to Brown Oily Liquid	1	X	1	X	X	X	X	X	X	1	X	X	X	-	X	X	2	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	-	-	X
Sulfurous Acid (10%)	Colorless Liquid	1	1	1	1	X	X	X	-	2	1	1	1	-	1	-	X	2	1	X	X
Sulfurous Acid (75%)	Colorless Liquid	1	1	1	1	X	X	X	X	X	1	1	1	X	-	X	X	2	X	X	-
Sun R&O Oils	Liquid	1	1	-	X	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	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	2	-	1	-	-	-	-	-	1	1	-	-	-
T																					
Tall Oil	Black liquid	1	2	-	X	1	X	X	X	X	2	X	-	-	X	-	X	2	-	-	-
Tall Oil(Under 150°F (66°C)	Liquid	1	1	-	X	2	X	X	2	X	1	X	-	-	-	-	X	2	-	-	-
Tallow	White to clear Solid or Liquid	1	1	-	2	2	-	-	2	2	-	-	-	1	2	2	2	2	1	2	-
Tannic Acid	Faint Yellow Powder	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	2	X	X	2	X	1	-	X	-	-	1	1	1	1	2	-
Tar Oil	Yellow to dark brown Liquid	1	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-
Tartaric Acid	White Crvstalline Powder	1	1	1	1	2	2	2	2	1	1	1	1	-	-	-	2	2	2	-	-

Chemical	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters					
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro
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	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	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	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	X	1	X	-	2	1	-	-	-	-	-	-
Tetraethylene Glycol	Colorless Liquid	1	2	-	-	2	-	2	-	1	2	2	-	-	-	-	-	-	-	-	-
Tetrahydrofuran (THF)	Colorless Liquid	1	X	-	2	X	X	X	X	2	1	X	-	1	X	2	-	-	-	-	X
Tetrahydroxydicyclopentadiene (JP 10) ²	-	-	-	-	X	X	X	X	X	X	1	X	-	1	X	-	-	-	-	-	-
Tetralin	Colorless Liquid	1	-	-	X	X	X	X	X	X	1	X	-	2	-	-	-	-	-	-	X
Theobromo Oil (Cocoa Butter)	Liquid above 95°F (35°C)	1	1	2	-	2	X	X	2	-	-	-	-	-	-	1	1	1	-	-	-
THF (Tetrahydrofuran)	Colorless Liquid	1	X	-	2	X	X	X	X	2	1	X	-	1	X	2	-	-	-	-	X
Thiopen	-	1	-	-	X	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	-
Toluene Diisocyanate (Hylene)	Yellow Liquid	1	-	-	2	X	X	X	X	2	X	X	-	-	-	-	-	-	-	-	-
Toluene Diisocyanate (Isocyanate)	Water White to Yellow Liquid	1	2	-	X	X	X	X	X	X	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	-
Transformer Oil (Askarel Types)1	Liquid	1	2	2	X	X	X	X	X	X	1	X	1	1	X	1	1	1	-	1	2
Transformer Oil (Petroleum Type)1	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	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	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	-
Trichloropropane	Colorless Liquid	1	-	-	-	2	-	X	2	X	1	X	-	-	-	-	-	-	-	-	-
Tricresyl Phosphate	Colorless Liquid	1	-	X	1	X	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	X	2	2	X	2	1	-	1	X	X	X	1	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	1
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	2	X	X	X	X	1	2	-	-	2	1	1	1	1	1	-
Turpentine	Liquid oil	1	X	1	X	2	X	X	X	X	1	X	2	1	1	-	1	1	1	2	-
U																					
Ucon Hydrolube Types 150CP, 200CP	Liquid	1	1	-	1	1	-	-	-	1	-	-	-	1	2	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	-





Chemical Resistance Table

Chemical	Form (at room temperature unless otherwise stated)	Gates Hose / Polymers														Couplings / Adapters						
		Teflon®	XLPE	UHMWPE	EPDM	NBR	SBR	NR	CR	Butyl	Fluorocarbon	Hypalon®	CPE	Nylon	PVC	Iron/Carbon Steel	Stainless Steel 304	Stainless Steel 316	Aluminum	Brass	Polypro	
		NOTE: Ratings are for the affect on the polymer only!																				
Undecanol (Undecyl Alcohol)	Colorless Liquid	1	-	-	-	1	-	2	-	-	2	2	-	-	-	-	-	-	-	-	-	
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	-	-	2	1	1	1	2	-	1	1	1	2	1	1	1	-	-	-	
V																						
Varnish	-	1	2	-	X	X	X	X	X	X	2	X	-	1	-	2	1	1	-	2	-	
Vegetable Oils	Liquids	1	-	1	2	-	X	X	2	X	-	1	1	1	2	1	1	1	1	-	-	
Versilube F-50, F-44	Liquid	1	-	-	2	2	2	2	2	2	1	2	-	1	2	1	1	1	1	1	-	
Vinegar	Brownish to colorless Liquid	1	1	-	-	2	2	2	2	2	1	X	2	-	1	X	2	1	X	X	-	
Vinyl Acetate	Colorless Liquid	1	1	X	X	X	X	X	X	2	X	X	1	-	-	-	1	2	1	2	-	
Vinyl Chloride (Monomer)	-	1	2	-	X	X	X	X	X	X	2	X	X	-	X	2	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	1	X	X	-	X	1	X	-	1	-	1	1	1	2	1	-	
W																						
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	-	
Water (Brine)	Liquid	1	1	-	1	2	1	1	2	1	1	1	-	1	1	-	-	-	-	-	1	
Water (Deionized)	Liquid	1	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	
Water (Distilled)	Liquid	1	1	1	1	1	1	1	2	1	-	1	-	1	1	-	-	-	-	-	1	
Water (Potable)	Liquid	USE AQUARIUS HOSE ONLY										1										
Water Glycols	Liquid	1	1	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	
Water in Oil Emulsions	Liquid	1	1	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	
White & Bagley No. 2190 Cutting Oil	Liquid	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Wines	Liquid	1	2	-	X	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	-	-	-	-	-	-	
X																						
Xylene (Dimethylbenzene)	Colorless Liquid	1	2	X	X	X	X	X	X	X	1	X	X	X	X	-	-	-	-	-	-	
Xylenol (Dimethylphenol)	White solid, liquid @ 68°F (20°C)	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	
Z																						
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	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	-	

