EQUIPMENT
HOSE/CPLG. SELECTION
GLOBALSPIRAL COUPLINGS
PCS COUPLINGS
GLOBALSPIRAL HIGH PRESSURE COUPLINGS
STAINLESS STEEL
PCM COUPLINGS
MEGACRIMP COUPLINGS
STAINLESS STEEL BRAID
POWER CRIMP COUPLINGS
FIELD ATTACHABLE G1 & G2 COUPLINGS
AIR BRAKE COPPER TUBING
SURELOK
HOSE CUTTERS & TOOLS
COMPRESSION AIR BRAKE
AIR BRAKE HOSE ASSEMBLIES
AIR BRAKE FOR RUBBER HOSE
FIELD ATTACHABLE C5 COUPLINGS
LOCK-ON HOSE
SINGLE BEAD
BARBED STEM
C14 COUPLINGS
LOW PRESSURE COUPLINGS
GLX COUPLINGS
POLARSEAL COUPLINGS
POLARSEAL II COUPLINGS
ASSEMBLY FABRICATION
POWER STEERING
PCTS THERMO-PLASTIC COUPLINGS
ADAPTERS
ACCESSORIES
QUICK DISCONNECT COUPLERS
BALL VALVES
KITS

# Chemical Resistance Ratings for Gates Hose Polymers, Couplings and Adapter Materials

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

*For specific information, contact Gates Hose/ Connector Product Application, Denver, Colorado.*

## Rating Scale

| | |
|---|---|
| **"1"** | Excellent resistance |
| **"2"** | Good resistance |
| **"X"** | Not recommended |
| **"—"** | Testing recommended |

**How to Use the Chemical Resistance Table**

1. Chemicals are listed alphabetically.
2. Find the hose, coupling and adapter material type that has a resistance rating of "1" or "2" (See Rating Scale).
3. Find hose(s) with compatible polymer(s) in the Gates Hydraulic Hose Selection Guide.
4. Look for compatible couplings for the selected hose(s) by following the hose page references in the Selection Guide.

**NOTE:** O-Rings used with couplings also must be considered for chemical compatibility with the fluid to be conveyed. This includes couplings containing internal O-rings; for example, MPX (Male Pipe Swivel). Gates standard O-ring is made of Nitrile. If O-rings other than Nitrile are required, contact Gates Denver.

# Chemical Resistance Table

**Rating Scale:**
**1** Excellent
**2** Good resistance
**X** Not recommended
**–** Testing recommended

| Chemical Name | Gates Hose Polymers (Trade Names) A: Neoprene | C: Nitrile | $C_2$: Nitrile/PVC | J: CPE | J: Hypalon | Z: Urethane (cover rating only) | Z: PTFE | Z: Nylon | Couplings & Adapters: Carbon Steel | Stainless Steel 304 | Stainless Steel 316 | Aluminum | Brass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **A** | | | | | | | | | | | | | |
| Absorption Oil | 2 | 1 | 2 | 1 | 2 | - | 1 | 1 | - | - | - | - | 1 |
| Acetaldehyde | X | X | X | - | X | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Acetamide | 1 | 2 | - | - | - | X | 1 | - | - | - | - | - | - |
| Acetic Acid, 5-20% | 2 | X | 2 | 1 | 2 | X | 1 | 1 | X | 2 | 2 | 2 | X |
| Acetic Acid, 25% | 2 | X | 2 | 1 | 2 | - | 1 | X | X | 2 | 2 | 2 | X |
| Acetic Acid, 30% | 2 | X | - | 1 | - | - | 1 | 2 | X | 2 | 1 | 2 | X |
| Acetic Acid, 50% | 2 | X | 2 | 1 | - | - | 1 | 2 | X | 2 | 2 | 2 | X |
| Acetic Acid, 50% Boiling | X | X | - | - | - | - | 1 | X | X | X | 2 | - | - |
| Acetic Acid, 80% | X | X | - | - | - | - | 1 | X | X | 2 | 2 | 2 | X |
| Acetic Acid, 80% Boiling | X | X | - | - | - | - | 1 | X | X | X | 2 | X | X |
| Acetic Acid, 100% | X | X | - | - | - | - | 1 | X | X | X | 2 | 2 | X |
| Acetic Acid, 100% Boiling | X | X | - | - | - | X | 1 | X | X | X | 2 | - | X |
| Acetic Acid, 100% (Hot) Vapors | 2 | 2 | - | - | - | - | - | X | X | X | 2 | 2 | X |
| Acetic Acid, Air Free | - | - | - | - | - | - | 1 | - | X | X | X | - | X |
| Acetic Acid, Anhydride | X | X | X | 1 | 2 | - | 1 | X | X | 2 | 2 | 2 | X |
| Acetic Acid, Areated | - | - | - | - | - | - | 1 | - | X | X | X | - | X |
| Acetic Acid, Crude | X | X | - | - | - | - | 1 | 1 | X | 2 | 1 | 2 | X |
| Acetic Acid, Glacial | X | X | X | 1 | X | X | 1 | X | X | 2 | 2 | 2 | - |
| Acetone (Dimethylketone) | X | X | X | 1 | X | X | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Acetonitrile (Methyl Cyanide) | 2 | X | 2 | 1 | 2 | - | - | - | - | - | - | - | - |
| Acetylene | 2 | 2 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Acrylonitrile (Vinyl Cyanide) | X | X | X | 1 | X | - | - | - | 1 | 1 | 1 | 2 | 1 |
| Aero Lubriplate | 1 | 1 | - | - | - | - | - | - | 1 | 1 | 1 | 1 | - |
| Aero-Safe 2300 | X | X | - | - | - | X | - | - | 1 | 1 | 1 | 1 | 1 |
| Aeroshell Type 1A, 1AC, 4 | 2 | 1 | - | - | - | 1 | - | - | - | - | - | - | - |
| Aeroshell 7AGrease | 2 | 1 | - | - | - | X | - | - | 1 | 1 | 1 | 1 | - |
| Aeroshell 17 Grease | 2 | 1 | - | - | - | X | - | - | 1 | 1 | 1 | 1 | - |
| Aeroshell 750 | X | 2 | - | - | - | X | - | - | 1 | 1 | 1 | 1 | - |
| Air, Ambient | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Air, 150°F | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Air, 180°F | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Air, 200°F | X | X | X | 1 | X | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Aircraft Hyd. Oil AA | - | 1 | - | - | - | - | - | - | 1 | 1 | 1 | 1 | 1 |
| Alcohol | 1 | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Alcohol, Amyl | 2 | 2 | - | - | - | - | 1 | 1 | - | 2 | 1 | 2 | - |
| Alcohol, Benzyl | X | X | - | 1 | 2 | 2 | 1 | - | 1 | 1 | 1 | - | - |
| Alcohol, Butyl | 2 | X | 2 | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Alcohol, Denatured | 1 | 1 | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Alcohol, Diacetone | - | X | - | - | 2 | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Alcohol, Ethyl (Ethanol) | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Alcohol, Furfural | 2 | X | X | 1 | 2 | - | 1 | - | 2 | 1 | 1 | 1 | 1 |
| Alcohol, Hexyl (Hexanol) | 2 | 1 | - | - | X | - | 1 | - | 1 | 1 | 1 | 1 | 2 |
| Alcohol, Isobutyl | 2 | 2 | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Alcohol, Isopropyl (Isopropanol) | 2 | 2 | 2 | - | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Alcohol, Methyl (100%) (Methanol) | 1 | 1 | 1 | 1 | 1 | - | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Alcohol, Methyl (6%) | 1 | 1 | 1 | - | 1 | - | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Alcohol, Octyl | 2 | 2 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | - |
| Alcohol, Propyl | 1 | 1 | - | - | - | - | 1 | X | 2 | 1 | 1 | 1 | 1 |
| Alkazene | X | X | X | - | X | X | - | - | 1 | 1 | - | - | - |
| Aluminum Chloride | 1 | 1 | 1 | 1 | 1 | 2 | 1 | X | X | 2 | 2 | X | X |
| Aluminum Fluoride | 1 | 1 | 1 | 1 | 1 | 2 | 1 | X | X | 2 | 2 | 2 | X |
| Aluminum Hydroxide | 1 | 1 | 1 | 1 | 1 | - | 1 | 1 | - | 1 | 1 | - | 1 |
| Aluminum Hydroxide, Saturated | 1 | 1 | - | - | - | - | 1 | 1 | - | 1 | 1 | - | - |
| Aluminum Nitrate | 1 | 1 | 1 | 1 | 1 | 2 | 1 | - | X | 1 | 1 | 2 | - |
| Aluminum Sulfate | 1 | 1 | 1 | 1 | 1 | X | 1 | 1 | X | X | 2 | X | X |
| Alums (Ammonium or Potassium) | 1 | 1 | 1 | 1 | 1 | - | 1 | - | X | 2 | 2 | X | X |
| Ammonia, Aqueous | 1 | 2 | 1 | - | 1 | - | 1 | 1 | - | 1 | 1 | - | X |
| Ammonium Carbonate | 2 | X | - | - | - | - | - | - | 1 | 1 | 1 | - | - |
| Ammonium Chloride, 1% | X | 2 | 1 | 1 | 1 | 1 | 1 | 1 | X | 2 | 2 | X | X |
| Ammonium Chloride, 10% Boiling | X | X | - | - | - | - | 1 | X | X | 2 | 2 | X | X |
| Ammonium Chloride, 28% Boiling | X | X | - | - | - | - | 1 | X | X | 2 | 2 | X | X |
| Ammonium Chloride, 50% Boiling | X | X | - | - | - | - | 1 | X | X | 2 | 2 | X | X |
| Ammonium Hydroxide | 2 | 2 | 2 | 1 | 1 | X | 1 | 1 | 2 | 1 | 1 | - | X |
| Ammonium Hydroxide, 3 Molar | 1 | X | - | - | - | 2 | 1 | - | X | 2 | 2 | X | X |
| Ammonium Hydroxide, Concentrated | 1 | X | - | 1 | - | X | 1 | 1 | X | 2 | 2 | X | X |
| Ammonium Metaphosphate | 2 | 2 | 2 | - | 2 | - | 1 | - | 1 | 1 | 1 | X | - |
| Ammonium Nitrate, Fertilizer | 1 | 2 | 1 | 1 | 1 | 1 | 1 | X | 1 | 1 | 1 | 2 | X |
| Ammonium Nitrite | 1 | 1 | - | - | - | - | - | 1 | 2 | 1 | 1 | X | - |
| Ammonium Persulfate | X | X | X | 1 | - | X | - | X | X | 2 | 2 | X | X |
| Ammonium Persulfate, 5% | 1 | X | - | - | - | - | - | X | X | 2 | 2 | X | X |
| Ammonium Persulfate, 10% | 1 | X | - | - | - | X | - | X | X | 2 | 2 | X | X |
| Ammonium Phosphate (Mono, Di, Tri, Basic) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | X | 2 | 2 | X | - |
| Ammonium Sulfate | 1 | 2 | 1 | 1 | 1 | 1 | 1 | X | X | X | 2 | X | X |
| Ammonium Thiocyanate | 1 | 1 | - | 1 | 1 | - | 1 | - | 1 | 1 | 1 | - | - |
| Amyl Acetate | X | X | X | 2 | X | 2 | 1 | 1 | X | 1 | 1 | X | 2 |
| Amyl Alcohol | 2 | 2 | 2 | 1 | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Amyl Borate | 2 | 2 | 2 | - | - | - | - | - | - | - | - | - | - |
| Amyl Chloride | X | - | X | 2 | X | - | 1 | 2 | - | 1 | 1 | - | - |
| Amyl Chloronaphthalene | X | X | X | - | X | - | 1 | - | - | 1 | 1 | - | - |
| Amyl Naphthalene | X | X | X | - | X | - | 1 | - | - | 1 | 1 | - | - |
| Amyl Phenol | - | - | - | - | - | - | 1 | - | - | 1 | 1 | - | - |
| AN-0-3 Grade M | 1 | 1 | - | - | - | - | - | - | - | - | - | - | - |
| AN-0-6 | 1 | 1 | - | - | - | - | - | - | - | - | - | - | - |
| AN-0-366 | 1 | 1 | - | - | - | - | - | - | - | - | - | - | - |
| Anderol, L-774 (Diester) | X | 2 | - | - | - | - | 1 | X | - | - | - | - | - |
| Anderol, L-826 (Diester) | X | 2 | - | - | - | - | 1 | X | - | - | - | - | - |
| Anderol, L-829 (Diester) | X | 2 | - | - | - | - | 1 | X | - | - | - | - | - |
| ANG-25 (Glyceral Ester) | 2 | 2 | - | - | - | - | 1 | 2 | - | - | - | - | - |
| ANG-25 (Diester Base, TG749) | X | 2 | - | - | - | - | 1 | X | 1 | 1 | 1 | 1 | - |
| Aniline | X | X | X | 2 | X | X | 1 | 2 | 2 | 1 | 1 | X | X |
| Aniline Dyes | X | X | - | 2 | - | - | 1 | X | 2 | 1 | 1 | 2 | X |
| Aniline Hydrochloride | X | X | - | 2 | - | - | 1 | - | X | 1 | 1 | - | - |
| Animal Gelatin | 1 | 1 | - | 1 | - | - | 1 | - | - | 1 | 1 | - | - |
| Animal Fats | 2 | 1 | - | 1 | - | - | 1 | 1 | 1 | 1 | 1 | 1 | X |
| Animal Oil (Lard Oil) | 2 | 1 | - | 1 | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Antifreeze, Alcohol Base | 2 | 2 | 2 | 2 | 2 | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Antifreeze, Glycol Base | 2 | 1 | 1 | 1 | 1 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Antimony Chloride, 50% | - | 1 | - | - | - | - | 1 | X | X | X | X | - | - |
| AN-VV-0-366B Hydraulic Fluid | 1 | - | - | - | - | - | - | 2 | - | - | - | - | - |
| Aqua Regia (Concentrated) | X | X | X | 2 | X | X | 1 | X | X | X | X | X | - |
| Arco A.T.F. Dexron | - | 1 | - | - | - | - | - | - | - | - | - | - | - |
| Arco C2, 100 | - | 1 | - | - | - | - | - | - | - | - | - | - | - |
| Aromatic Fuel 30%, Mil. | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Aromatic Fuel 50% | X | 2 | - | - | - | - | 1 | - | - | - | - | - | - |
| Aromatic Hydrocarbons | X | X | - | - | X | 2 | 1 | - | 2 | 1 | 2 | 2 | 2 |
| Arsenic Acid | - | - | - | 1 | - | - | 1 | - | 2 | - | 1 | 2 | - |
| Askarel, Transformer Oil | X | X | X | - | X | - | 1 | - | 1 | 1 | 1 | - | 1 |
| Asphalt, Under 180°F | 2 | 2 | 2 | X | X | 1 | 1 | - | 1 | 1 | 1 | - | 2 |
| Asphalt, Cut Back | X | 2 | 2 | - | X | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| Asphalt, Topping | 1 | X | - | - | - | - | 1 | - | 1 | 1 | 1 | - | - |
| ASTM Oil No. | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| ASTM Oil No. | 2 | 2 | 1 | - | 2 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| ASTM Oil No. 3 | X | 1 | X | X | X | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| ASTM Oil No. 4 | X | 2 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| ASTM Reference Fuel A | ② | 1 | ① | 1 | 1 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| ASTM Reference Fuel B | ② | 1 | 2 | 2 | X | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| ASTM Reference Fuel C | X | 2 | X | 2 | X | - | 1 | - | 1 | 1 | 1 | - | 1 |
| ATL-857 | X | 2 | - | - | - | - | - | - | - | - | - | - | - |
| Atlantic Dominion F | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - |

○Cover stock rating only; Rating for tube stock "X"  *Use Gates fuel hose or contact Denver Product Applications Department.

EQUIPMENT
HOSE/CPLG. SELECTION
GLOBALSPIRAL COUPLINGS
PCS COUPLINGS
GLOBALSPIRAL HIGH PRESSURE COUPLINGS
STAINLESS STEEL
PCM COUPLINGS
MEGACRIMP COUPLINGS
STAINLESS STEEL BRAID
POWER CRIMP COUPLINGS
FIELD ATTACHABLE G1 & G2 COUPLINGS
AIR BRAKE COPPER TUBING
SURELOK
HOSE CUTTERS & TOOLS
COMPRESSION AIR BRAKE
AIR BRAKE HOSE ASSEMBLIES
AIR BRAKE FOR RUBBER HOSE
FIELD ATTACHABLE C5 COUPLINGS
LOCK-ON HOSE
SINGLE BEAD
BARBED STEM
C14 COUPLINGS
LOW PRESSURE COUPLINGS
GLX COUPLINGS
POLARSEAL COUPLINGS
POLARSEAL II COUPLINGS
ASSEMBLY FABRICATION
POWER STEERING
PCTS THERMO-PLASTIC COUPLINGS
ADAPTERS
ACCESSORIES
QUICK DISCONNECT COUPLERS
BALL VALVES
KITS

# Chemical Resistance Table

**Rating Scale:**
**1** Excellent
**2** Good resistance
**X** Not recommended
**–** Testing recommended

| Chemical Name | Gates Hose Polymers (Trade Names) A: Neoprene | C: Nitrile | $C_2$: Nitrile/PVC | J: CPE | J: Hypalon | Z: Urethane (cover rating only) | Z: PTFE | Z: Nylon | Couplings & Adapters: Carbon Steel | Stainless Steel 304 | Stainless Steel 316 | Aluminum | Brass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aurex 903R (Mobil) | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - |
| Automatic Brake Fluid | 2 | X | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Automatic Transmission Fluid - ATF | 2 | 1 | - | 1 | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Aviation Gasoline, Mil. | - | 2 | - | - | - | - | - | - | 1 | 1 | 1 | 1 | - |
| **B** | | | | | | | | | | | | | |
| Baltic Types 100, 150, 200, 300, 500 | - | 1 | - | - | - | - | 1 | - | - | - | - | - | - |
| Banvel, Concentrated (Ag Spray) | - | - | - | - | - | - | 1 | 1 | - | - | 1 | - | - |
| Bardol B | X | X | X | - | X | - | 1 | - | 1 | 1 | 1 | - | - |
| Barium Carbonate | 1 | 1 | 1 | 1 | 1 | - | 1 | 1 | 2 | 1 | 1 | X | 1 |
| Barium Chloride | X | 1 | 1 | 1 | 1 | 1 | 1 | 1 | X | 2 | 2 | X | 2 |
| Barium Chloride, 5% | X | 1 | - | - | - | - | 1 | X | 2 | 1 | 1 | X | - |
| Barium Chloride, Aqueous Solution (Hot) | X | 1 | - | - | - | - | 1 | X | 2 | 2 | 2 | X | - |
| Barium Hydroxide | 1 | 1 | 1 | 1 | 1 | X | 1 | 1 | X | 1 | 1 | X | X |
| Barium Sulfate | 1 | 1 | - | 1 | 2 | - | 1 | 1 | 2 | 1 | 1 | 2 | 2 |
| Barium Sulfate, Aqueous Solution (Hot) | X | - | - | - | - | - | 1 | X | 2 | 1 | 1 | 2 | - |
| Barium Sulfide | 2 | 1 | 1 | 1 | 1 | - | 1 | 2 | X | 1 | 1 | X | X |
| Bayol D | - | 1 | - | - | - | - | - | - | - | - | - | - | - |
| Bayol 35 | - | 1 | - | - | - | - | - | - | - | - | - | - | - |
| Beet Sugar Liquors | X | 1 | 1 | 1 | 1 | X | 1 | - | 2 | 2 | 2 | 2 | X |
| Bellows 80-20 Hydraulic Oil | - | 1 | - | - | - | 2 | 1 | - | - | - | - | - | - |
| Benzaldehyde | X | X | X | 2 | X | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Benzene, Benzol | X | X | X | X | X | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Benzene Sulfonic Acid | X | - | - | - | - | - | 1 | - | X | - | 2 | X | - |
| Benzine, Petroleum Ether | X | 2 | X | 1 | - | 2 | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Benzoic Acid 21°C (70°F) | X | X | X | 1 | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Benzol | X | X | X | X | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Benzyl Alcohol | X | X | - | 1 | - | - | 1 | X | 1 | 1 | 1 | 1 | - |
| Benzyl Benzoate | - | - | - | - | - | - | 1 | - | 1 | 1 | 1 | - | - |
| Benzyl Chloride | X | X | X | X | - | - | 1 | 2 | 1 | - | - | - | - |
| Biodiesel** | - | - | - | - | - | - | 1 | 1 | - | 1 | 1 | - | - |
| Bismuth Carbonate | X | - | - | - | - | - | 1 | - | 1 | 1 | 1 | - | - |
| Black Point 77 | - | 1 | - | - | - | - | - | - | - | - | - | - | - |
| Black Sulfate Liquor | 2 | 2 | 2 | 2 | 2 | - | 1 | 1 | 1 | 1 | 1 | - | 1 |
| Blast Furnace Gas | X | X | X | - | X | X | 1 | - | 1 | 1 | 1 | 2 | 1 |
| Borax, Sodium Borate | X | 2 | 2 | 1 | 1 | 1 | 1 | X | 2 | 1 | 1 | X | 2 |
| Bordeaux Mixture | 2 | 2 | 2 | - | - | 1 | 1 | 1 | X | - | 1 | 1 | X |
| Boric Acid | 1 | 1 | 1 | - | 1 | 1 | 1 | X | X | 2 | 2 | 1 | X |
| Boron Fuels, HEF | X | X | - | - | - | - | - | - | - | - | - | - | - |
| Brake Fluid, Petroleum Base | 2 | 1 | 2 | 1 | X | - | 1 | - | 1 | 1 | 1 | - | 1 |
| Brake Fluid, Synthetic Base | X | X | X | 1 | X | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Bray GG - 130 | X | 2 | - | - | - | - | - | - | - | - | - | - | - |
| Brayco 719-r (VV-H-910) | 2 | X | - | - | - | - | - | - | - | - | - | - | - |
| Brayco 885 (MIL-L-6085A) | X | 2 | - | - | - | - | - | - | - | - | - | - | - |
| Brayco 910 | 2 | 2 | - | - | - | - | - | - | - | - | - | - | - |
| Brine | 1 | 1 | 1 | 1 | - | - | 1 | 1 | 2 | 1 | 1 | - | 2 |
| Brom-113 | X | 2 | - | - | - | - | - | - | - | - | - | - | - |
| Brom-114 | 2 | 2 | - | - | - | - | - | - | - | - | - | - | - |
| Bromine, Dry | X | X | X | - | - | - | x | - | X | X | X | - | X |
| Bunker Oil | X | 2 | 2 | - | X | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Butadiene | X | 2 | - | - | - | - | 1 | 1 | - | 1 | 1 | - | 1 |
| Butane | X | X | X | - | X | X | 1 | X | 1 | 1 | 1 | - | 1 |
| Butter Oil | 2 | - | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Butyric Acid | X | - | - | 1 | - | - | 1 | X | X | 1 | 1 | - | 2 |
| Butyl Acetate | X | X | X | 2 | X | - | 1 | - | 2 | 1 | 1 | 1 | 1 |
| Butyl Alcohol | 1 | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Butyl Amine | - | - | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Butyl Carbitol | 2 | 2 | - | 1 | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Butyl Mercaptan | - | - | - | - | - | - | 1 | - | - | 1 | 1 | 1 | - |
| Butyl Stearate | X | 2 | 2 | 2 | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Butyraldehyde | X | X | - | 2 | - | - | 1 | - | - | - | - | - | 1 |

○Cover stock rating only; Rating for tube stock "X"

**Rating Scale:**
**1** Excellent
**2** Good resistance
**X** Not recommended
**–** Testing recommended

| Chemical Name | Gates Hose Polymers (Trade Names) A: Neoprene | C: Nitrile | $C_2$: Nitrile/PVC | J: CPE | J: Hypalon | Z: Urethane (cover rating only) | Z: PTFE | Z: Nylon | Couplings & Adapters: Carbon Steel | Stainless Steel 304 | Stainless Steel 316 | Aluminum | Brass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **C** | | | | | | | | | | | | | |
| Calcium Acetate | X | X | X | 1 | X | - | 1 | - | 2 | 2 | 2 | X | 1 |
| Calcium Arsenate | - | - | - | - | - | 1 | 1 | 1 | - | - | - | - | - |
| Calcium Bisulfate | 1 | 1 | 2 | 1 | 1 | - | 1 | - | - | 2 | 1 | - | X |
| Calcium Bisulfide | 1 | 1 | 2 | 1 | 1 | 1 | 1 | - | - | 2 | 2 | X | X |
| Calcium Bisulfite | 1 | 1 | 1 | 1 | 1 | - | 1 | 1 | X | 1 | 1 | 1 | X |
| Calcium Carbonate | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | X | 1 |
| Calcium Chlorate | 1 | 1 | 1 | - | 1 | - | 1 | - | 2 | 2 | 1 | 1 | - |
| Calcium Chloride | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | X | 2 | 1 | X | - |
| Calcium Hydroxide | 1 | 2 | 2 | 1 | 1 | X | 1 | - | X | X | 1 | - | 2 |
| Calcium Hydroxide, 10% Boiling | - | 2 | - | - | - | - | 1 | X | 2 | 1 | 1 | X | X |
| Calcium Hydroxide, 20% Boiling | - | - | - | - | - | - | 1 | X | - | 1 | 1 | X | X |
| Calcium Hydroxide, 50% Boiling | - | - | - | - | - | - | 1 | X | - | X | 2 | X | X |
| Calcium Hypochlorite, 5% (Under 100°F) | X | 2 | X | 1 | 2 | - | 1 | X | X | X | 2 | X | X |
| Calcium Hypochlorite, 15% (Under 100°F) | X | - | X | 1 | 2 | - | 1 | X | - | X | 2 | X | X |
| Calcium Nitrate | 1 | 1 | 1 | 1 | 1 | - | 1 | 1 | X | 2 | 2 | X | 1 |
| Calcium Silicate | - | 2 | - | 1 | 2 | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Calcium Sulfate | 1 | 1 | 1 | 1 | 1 | - | 1 | - | 2 | 1 | 1 | 2 | 1 |
| Calcium Sulfide | 1 | 2 | - | 1 | - | - | 1 | 2 | 2 | 1 | 1 | 2 | - |
| Caliche Liquors | 1 | 2 | - | 1 | 1 | 1 | 1 | - | 1 | 1 | 1 | - | - |
| Cane Sugar Liquors | 1 | 1 | 2 | 1 | - | - | 1 | - | 1 | 1 | 1 | 1 | 2 |
| Carbolic Acid, Phenol | X | X | X | 1 | X | X | 1 | X | X | 1 | 1 | 2 | X |
| Carbon Dioxide, Dry | 2 | 1 | 1 | 1 | 1 | 1 | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Carbon Dioxide, Wet | 2 | 1 | 1 | 1 | 1 | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Carbon Disulfide | X | X | - | 2 | X | 2 | 1 | 1 | 2 | 1 | 1 | 2 | X |
| Carbon Monoxide, Under 150°F (Hot) | 2 | 2 | 2 | 1 | 1 | - | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Carbon Tetrachloride, 5%-10% | - | - | - | - | - | - | 1 | - | - | X | - | - | - |
| Carbon Tetrachloride, Pure | X | X | X | 2 | X | X | 1 | X | X | X | 2 | 2 | 2 |
| Carbonic Acid | 1 | 1 | 1 | 1 | 1 | X | 1 | - | X | 1 | 1 | 2 | X |
| Castor Oil | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Caustic Soda, 20% | 2 | X | X | 1 | 1 | X | 1 | 2 | 2 | 1 | 1 | X | X |
| Caustic Soda, 50% | 2 | X | X | 1 | 1 | X | 1 | 2 | 2 | 1 | 1 | X | X |
| Cellosolve Acetate, Under 100°F | X | X | X | 2 | X | - | 1 | - | 2 | 2 | 2 | 1 | - |
| Cellosolve, Butyl, Under 100°F | X | X | X | - | X | - | 1 | - | 2 | 2 | 2 | 2 | - |
| Cellosolve, Union Carbide, Under 100°F | X | X | - | - | - | - | 1 | - | 2 | 2 | 2 | 2 | - |
| Cellugard, Cellugard 200 | 1 | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Cellulube 90, 150, 220, 300, 550 | X | X | X | - | X | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Cellulube 1000, 220A, ST220, A60 | X | X | X | - | X | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Cellutherm 2505A | X | 2 | - | - | - | - | - | - | - | - | - | - | - |
| Chevron Fr-10,13,20.8 | - | - | - | - | - | - | 1 | - | 1 | 1 | 1 | - | 1 |
| Chlordane | X | X | X | - | X | - | 1 | 1 | - | - | - | - | - |
| Chlorinate Paraffin & Petroleum Oil | - | - | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Chlorine Gas, Dry | N/A | X | N/A | N/A | - | - | 1 | - | 2 | X | X | - | 2 |
| Chlorine Gas, Wet | N/A | X | N/A | N/A | - | - | 1 | - | X | X | X | X | X |
| Chlorine Trifluoride | X | X | - | - | - | - | - | - | 1 | 1 | 1 | 1 | - |
| Chlorine Water, 3% Chlorine | X | X | X | - | - | - | 1 | - | - | X | X | - | - |
| Chlorine Water, 25% Chlorine | X | X | X | - | 2 | 2 | 1 | 2 | - | X | X | - | - |
| Chloroacetic Acid (Under 100°F) | X | X | X | - | 2 | - | 1 | X | X | X | X | - | 2 |
| Chlorobenzene | X | X | X | X | X | - | 1 | X | 2 | 2 | 2 | X | 1 |
| Chlorobromo Methane | X | X | X | - | X | - | 1 | - | 2 | 2 | 2 | X | 1 |
| Chloroform | X | X | X | X | X | - | 1 | X | 2 | 1 | 1 | X | 1 |
| O-Chloronaphthalene | X | X | X | - | - | - | 1 | 2 | 1 | 1 | 1 | - | 1 |
| Chlorosulfonic Acid | 2 | X | X | X | - | - | 1 | X | 1 | - | - | - | - |
| Chlorotoluene | X | X | X | X | X | X | 1 | - | 1 | 1 | 1 | X | 1 |
| Chlorox, Bleach | 2 | 2 | - | 1 | 2 | - | 1 | 1 | X | X | 2 | X | X |
| Chromic Acid, 5% | X | X | - | - | - | - | 1 | X | X | X | 2 | X | X |
| Chromic Acid, 10% | X | X | X | 1 | 2 | X | 1 | X | X | X | 2 | X | X |
| Chromic Acid, 25% | X | X | X | 1 | 2 | X | 1 | X | X | X | 2 | X | X |

*Use Gates fuel hose or contact Denver Product Applications Department.
**Nitrile 150°F or less, no constant contact.

# Chemical Resistance Table

**Rating Scale:**
**1** Excellent
**2** Good resistance
**X** Not recommended
**–** Testing recommended

| Chemical Name | Gates Hose Polymers (Trade Names) A: Neoprene | C: Nitrile | $C_2$: Nitrile/PVC | J: CPE | Z: Hypalon | Z: Urethane (cover rating only) | Z: PTFE | Z: Nylon | Couplings & Adapters: Carbon Steel | Stainless Steel 304 | Stainless Steel 316 | Aluminum | Brass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chromic Acid, 50% | X | X | X | 1 | 2 | X | 1 | X | X | X | 2 | 1 | X |
| Chromic Acid, 100% | - | - | - | - | - | X | 1 | - | X | X | 2 | - | X |
| Circo Light Process Oil | 1 | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Citgo FR Fluids | - | X | - | X | - | 2 | 1 | - | 1 | 1 | 1 | - | 1 |
| Citgo Glycol FR-20XD | - | 1 | - | - | - | 2 | 1 | - | 1 | 1 | 1 | - | 1 |
| Citgo Sentry (Under 100°F) | 2 | 2 | 1 | - | X | 2 | 1 | - | 1 | 1 | 1 | - | 1 |
| Citgo Tractor Hydraulic Fluid | - | 1 | - | - | - | 2 | 1 | - | 1 | 1 | 1 | - | 1 |
| Citric Acid, 5% | - | 2 | - | - | - | - | 1 | 1 | X | 1 | 1 | 1 | X |
| Citric Acid, 5% @150°F | - | 2 | - | - | - | - | 1 | X | X | X | 1 | 2 | X |
| Citric Acid, 15% | 1 | 2 | - | - | - | - | 1 | 1 | X | X | 1 | - | 1 |
| Citric Acid, 15% Boiling | 1 | 2 | - | - | - | - | 1 | X | X | 2 | 1 | X | X |
| Citric Acid, Concentrated Boiling | 1 | X | 1 | - | 1 | 2 | 1 | X | X | X | 1 | X | X |
| Coal Gas | 1 | X | - | 1 | - | 1 | 1 | - | - | - | - | - | - |
| Coal Tars | X | 2 | X | 2 | 2 | - | 1 | X | 1 | 1 | 1 | 1 | 1 |
| Cod Liver Oil | 1 | 1 | 1 | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Coke Oven Gas (Under 100°F) | X | 2 | X | - | 2 | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Condor 1000,1002,1004, 1006,1008 | - | 2 | - | - | - | - | - | - | - | - | - | - | - |
| Condor 1008,1010,1012, 1014,1016 | - | 2 | - | - | - | - | - | - | - | - | - | - | - |
| Convelex 10 | X | X | - | - | - | - | - | - | - | - | - | - | - |
| Copper Arsenate, Cupric Arsenate | - | - | - | - | 2 | - | 1 | - | 1 | 1 | 1 | - | - |
| Copper Chloride, 1% | 1 | 1 | - | - | - | - | 1 | X | X | X | 1 | - | X |
| Copper Chloride, 5% | 1 | 1 | - | - | - | - | 1 | X | X | X | 1 | - | - |
| Copper Chloride, Cupric Chloride | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | X | X | 1 | - | X |
| Copper Cyanide, Cupric Cyanide | 2 | 2 | 2 | - | 2 | - | 1 | X | 1 | 1 | 1 | - | X |
| Copper Nitrate, 1% & 5% | 1 | 1 | - | - | - | - | 1 | 1 | X | 1 | 1 | X | X |
| Copper Nitrate, Cupric Nitrate | 1 | 1 | 1 | 1 | 1 | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Copper Sulfate, Cupric Sulfate | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | X | 1 | 1 | X | X |
| Copper Sulfate, 10% | 1 | 1 | - | - | - | - | 1 | - | X | 2 | 2 | X | - |
| Copper Sulfate, 50% | 1 | 1 | - | - | - | - | 1 | - | - | 2 | 2 | - | - |
| Corn Oil | X | 2 | 2 | 2 | X | X | 1 | - | 1 | 1 | 1 | - | 1 |
| Corn Syrup | 2 | 2 | - | 2 | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Cottonseed Oil | 2 | 2 | 1 | 2 | 2 | X | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Creosote, Wood Or Coal Tar (Under 100°F) | X | 2 | X | - | X | X | 1 | X | 2 | 1 | 1 | 1 | X |
| Cresol, Cresylic Acid (Under 100°F) | X | X | X | 1 | X | - | 1 | X | 2 | 1 | 1 | 2 | - |
| Cyesylic Acid | X | X | - | - | - | - | 1 | X | 1 | 1 | 1 | 1 | - |
| Crude Petroleum Oil (Under 100°F) | X | X | 2 | 2 | 2 | 2 | 1 | - | X | X | 2 | 1 | - |
| Cutting Oil, Water Soluble | X | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | - | 1 |
| Cutting Oil, Sulfur Base | X | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Cutting Oil | 2 | 1 | 2 | 1 | X | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Cyclohexane | X | 2 | - | 1 | X | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cyclohexanone | X | X | X | 2 | X | 1 | 1 | 1 | - | 1 | 1 | 2 | - |
| Cymene | X | X | X | X | X | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| **D** | | | | | | | | | | | | | |
| Dasco FR150, FR200, FR200B, FR310 | - | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Dasco IFR | - | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| DC200, DC510, DC550, DC560 | - | 1 | - | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 |
| Decalin | X | 2 | - | 2 | X | - | 1 | 1 | - | - | - | - | 1 |
| Dectol R&O Oils | X | 1 | - | - | - | 2 | - | - | - | - | - | - | - |
| Denatured Alcohol | 1 | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Developing Fluids, Photo | 1 | 1 | - | 1 | - | - | - | - | X | X | 2 | - | - |
| Developing Solutions, Hypos | 2 | - | - | 1 | 2 | - | 1 | - | - | 1 | 1 | - | - |
| Diacetone | X | X | X | 1 | X | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Diacetone Alcohol | - | X | - | 1 | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Dibenzel Ether | X | X | - | 2 | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Dibutyl Ether | X | X | - | 1 | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Dibutyl Phthalate (Under 120°F) | X | X | X | 2 | X | 2 | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Dibutyl Sebacate | X | X | X | 2 | - | - | 1 | - | - | - | - | - | 1 |

**Rating Scale:**
**1** Excellent
**2** Good resistance
**X** Not recommended
**–** Testing recommended

| Chemical Name | Gates Hose Polymers (Trade Names) A: Neoprene | C: Nitrile | $C_2$: Nitrile/PVC | J: CPE | Z: Hypalon | Z: Urethane (cover rating only) | Z: PTFE | Z: Nylon | Couplings & Adapters: Carbon Steel | Stainless Steel 304 | Stainless Steel 316 | Aluminum | Brass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorobenzene | X | X | X | X | X | X | 1 | 1 | - | 1 | 1 | - | 1 |
| Dichloroethane | X | X | X | X | - | - | 1 | X | - | X | X | X | X |
| Diesel, Biodiesel** | - | - | - | - | - | - | 1 | 1 | - | 1 | 1 | - | - |
| Diesel Oil, Fuel ASTM #2 | ② | 1 | ② | 2 | X | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Diester Lubricant MIL-l-7808 | X | 2 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Diester Synthetic Lubricants | X | 2 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Diethylamine (Under 120°F) | 2 | 2 | - | 2 | X | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Diethylene Glycol | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Diethy Ether | X | X | - | 1 | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Diethyl Phthalate | - | X | - | 2 | - | - | 1 | - | - | 1 | 1 | - | 1 |
| Diethyl Sebacate | X | X | X | 2 | - | - | 1 | - | - | 1 | 1 | - | 1 |
| Diisobutylene | X | 2 | - | 1 | X | - | 1 | - | 2 | 1 | 1 | 2 | 1 |
| Diisobutyl Ketone | X | X | X | 2 | X | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Diisopropyl Ketone | X | X | X | 2 | X | - | 1 | 1 | - | 1 | 1 | - | 1 |
| Dimethyl Aniline | X | X | X | 2 | X | - | 1 | - | - | - | - | - | 1 |
| Dimethyl Formamide (Under 120°F) | X | X | X | - | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Dimethyl Phthalate | X | X | X | 1 | X | - | 1 | - | - | - | - | - | 1 |
| Dioctyl Phthalate | X | X | X | 2 | X | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Dioctyl Sebacate | X | X | X | X | X | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Dioxane | X | X | X | 2 | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Dipentene | X | X | - | 2 | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Dirco Oils | - | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Dispersing Oil #10 | X | X | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Dowtherm A | X | X | X | 2 | X | X | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Dowtherm E | X | X | - | 2 | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| DP47, 200 Flow - DOW | - | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Duro FR-HD | - | 1 | - | - | - | X | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Duro Oils | - | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **E** | | | | | | | | | | | | | |
| Elco 28-EPLubricant | X | 1 | - | - | - | - | - | - | 1 | 1 | 1 | 1 | - |
| Enamels | - | - | - | - | - | - | 1 | 1 | - | - | - | - | 1 |
| Energol HL68 | - | 1 | - | - | - | - | - | - | 1 | 1 | 1 | 1 | 1 |
| Energol HLPC 68 | - | 1 | - | - | - | - | - | - | 1 | 1 | 1 | 1 | 1 |
| EPHydraulic Oils, Chevron | - | 1 | - | - | - | - | - | - | 1 | 1 | 1 | 1 | 1 |
| Epichlorohydrin (Under 120°F) | X | X | - | - | - | - | 1 | - | 1 | 2 | 1 | 1 | - |
| Esam-6 Fluid | 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ethanol | 1 | 1 | - | 1 | - | X | 1 | 1 | X | 1 | 1 | - | 1 |
| Ethanolamine, Aminoethanol | 2 | 2 | - | 1 | X | X | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Ethers (Under 120°F) | X | 2 | X | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Ethyl Acetate | X | X | X | 2 | X | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| Ethyl Acetoacetate | X | X | X | 1 | X | X | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Ethyl Acrylate | X | X | X | 2 | X | X | 1 | - | 1 | 1 | 1 | 1 | - |
| Ethyl Alcohol | 1 | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Ethyl Amine, Monoethylamine | X | X | X | 1 | X | X | 1 | - | 2 | 1 | 1 | 2 | 1 |
| Ethyl Benzene | X | X | X | 2 | X | 1 | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Ethyl Bromide, Di | X | X | X | 2 | X | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Ethyl Butyrate | X | X | X | - | - | - | 1 | - | - | 1 | 1 | 1 | - |
| Ethyl Cellulose | - | - | - | 1 | - | - | 1 | - | 1 | 1 | 1 | - | 1 |
| Ethyl Chloride | X | X | X | - | - | X | 1 | - | 2 | 1 | 1 | 1 | 2 |
| Ethyl Ether | | X | X | X | - | - | 1 | - | 2 | 1 | 1 | 1 | 1 |
| Ethyl Mercaptan | X | X | X | - | X | X | 1 | - | 2 | - | - | - | - |
| Ethyl Oxalate | X | X | - | 1 | X | X | 1 | - | - | - | - | - | - |
| Ethyl Pentachlorobenzene | - | X | - | X | - | 1 | 1 | - | 2 | 1 | 1 | - | 1 |
| Ethyl Silicate | 1 | 1 | 1 | 1 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Ethylene Chloride | X | X | X | X | - | 1 | 1 | X | 2 | 1 | 1 | - | 2 |
| Ethylene Chlorohydrin, Under 100°F | X | X | X | - | - | X | 1 | X | 1 | 1 | 2 | X | - |
| Ethylene Diamine (Under 100°F) | 2 | 2 | 2 | 1 | X | X | 1 | - | - | - | - | - | 1 |
| Ethylene Dichloride | X | X | - | 2 | - | 1 | 1 | 1 | - | 1 | 1 | X | - |
| Ethylene Glycol | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 |

**Nitrile 150°F or less, no constant contact.

EQUIPMENT
HOSE/CPLG. SELECTION
GLOBALSPIRAL COUPLINGS
PCS COUPLINGS
GLOBALSPIRAL HIGH PRESSURE COUPLINGS
STAINLESS STEEL
PCM COUPLINGS
MEGACRIMP COUPLINGS
STAINLESS STEEL BRAID
POWER CRIMP COUPLINGS
FIELD ATTACHABLE G1 & G2 COUPLINGS
AIR BRAKE COPPER TUBING
SURELOK
HOSE CUTTERS & TOOLS
COMPRESSION AIR BRAKE
AIR BRAKE HOSE ASSEMBLIES
AIR BRAKE FOR RUBBER HOSE
FIELD ATTACHABLE C5 COUPLINGS
LOCK-ON HOSE
SINGLE BEAD
BARBED STEM
C14 COUPLINGS
LOW PRESSURE COUPLINGS
GLX COUPLINGS
POLARSEAL COUPLINGS
POLARSEAL II COUPLINGS
ASSEMBLY FABRICATION
POWER STEERING
PCTS THERMO-PLASTIC COUPLINGS
ADAPTERS
ACCESSORIES
QUICK DISCONNECT COUPLERS
BALL VALVES
KITS

# Chemical Resistance Table

**Rating Scale:**
**1** Excellent
**2** Good resistance
**X** Not recommended
**–** Testing recommended

| Chemical Name | Gates Hose Polymers (Trade Names: A, C, $C_2$, J, Z) Neoprene | Nitrile | Nitrile/PVC | CPE | Hypalon | Urethane (cover rating only) | PTFE | Nylon | Couplings & Adapters Carbon Steel | Stainless Steel 304 | Stainless Steel 316 | Aluminum | Brass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **F** | | | | | | | | | | | | | |
| Factovis 52 | - | 1 | - | - | - | - | - | - | 1 | 1 | 1 | 1 | 1 |
| Fatty Acids | 2 | 2 | 2 | 2 | X | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 |
| Ferric Chloride | - | - | - | 1 | 2 | - | 1 | 1 | X | X | X | X | X |
| Ferric Chloride, 1% | 1 | 1 | - | - | - | - | 1 | 1 | X | 2 | 2 | X | X |
| Ferric Chloride, 1% Boiling | - | 2 | - | - | - | - | 1 | 1 | X | X | X | X | X |
| Ferric Chloride, 5% Still | 2 | 1 | - | - | - | - | 1 | 1 | X | X | X | X | X |
| Ferric Chloride, 5% Agitated or Aerated | 2 | 2 | - | - | - | - | 1 | 1 | X | X | X | X | X |
| Ferric Chloride, 10% | 2 | 1 | - | - | - | - | 1 | 1 | X | X | X | X | X |
| Ferric Sulfate | 2 | 2 | 2 | 1 | 2 | - | 1 | 1 | X | 1 | 1 | X | X |
| Ferrous Chloride | 1 | 1 | - | 1 | 2 | - | 1 | - | X | 1 | 2 | - | 2 |
| Ferrous Nitrate | 2 | 2 | 2 | - | 2 | - | 1 | - | - | 1 | 1 | - | - |
| Ferrous Sulfate, Copper Gas | 2 | 2 | 2 | 1 | 2 | - | 1 | - | X | 1 | 1 | 1 | 2 |
| Ferrous Sulfate, 10% | 1 | 1 | - | - | - | - | 1 | 1 | X | 2 | 2 | X | - |
| Ferrous Sulfate, Saturated | 1 | - | - | - | - | - | 1 | 1 | - | 2 | 2 | X | - |
| Fire Resistant Hydraulic Fluid, Texaco | - | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Firtec 290, MF | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Fixing Solution, Photo | 2 | - | - | - | 2 | - | 1 | - | - | 1 | 1 | - | - |
| Fluoboric Acid | 1 | 1 | - | 1 | - | - | 1 | - | 1 | - | 1 | X | - |
| Fluoboric Acid, 65% | 2 | - | - | 1 | 2 | X | 1 | - | - | 1 | 1 | - | - |
| Fluosilicic Acid | 2 | 1 | - | - | - | - | 1 | - | X | X | X | X | 1 |
| Fluosilicic Acid, 50% | 2 | X | X | 1 | 2 | X | 1 | X | - | - | - | 1 | - |
| Formaldehyde | 1 | X | - | 1 | - | - | 1 | 2 | 1 | 1 | 1 | 1 | X |
| Formaldehyde, 37% | 2 | 2 | - | 1 | 2 | 2 | 1 | - | - | 1 | 1 | 1 | 1 |
| Formaldehyde, Hot | - | - | - | - | - | - | 1 | 1 | X | 2 | 1 | 2 | 1 |
| Formic Acid (Under 120°F) | 1 | X | 1 | 1 | 2 | X | 1 | 2 | X | 2 | 1 | 1 | 2 |
| Formic Acid, Dilute Hot | 1 | X | - | 1 | - | - | 1 | X | X | 2 | 1 | 2 | X |
| Freon 12 (Under 100°F) | Use Freon Hose Only | | | | | | | | 2 | 1 | 1 | 1 | 1 |
| Freon 114 | Use Freon Hose Only | | | | | | | | 1 | 1 | 1 | 1 | - |
| Fruit Juices | | | | | - | - | 1 | 1 | X | 1 | 1 | - | - |
| Fuel Oil | ② | 1 | ① | 1 | X | 2 | 1 | 1 | 2 | 2 | 2 | 1 | 2 |
| Fumaric Acid | 2 | X | - | - | - | X | 1 | - | 1 | 1 | 1 | - | - |
| Furan, Furfuran | X | X | X | 1 | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Furan Resin | X | X | - | - | - | - | 1 | - | - | - | 1 | - | - |
| Furfural Alcohol, Ant Oil | 2 | X | X | 1 | 2 | - | 1 | 1 | 2 | 1 | 1 | 1 | 1 |
| Fusel Oil, Grain Oil | X | X | - | - | - | - | 1 | - | - | - | - | - | - |
| Fyrguard 150, 200 | - | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Fyrquel A60, 90, 100, 150, 220, 300, 500 | X | X | - | - | - | - | 1 | - | 1 | - | - | 1 | - |
| Fyrquel 1000, 15R&O, 220R&O, 550R&O | X | X | - | - | - | - | 1 | - | 1 | - | - | 1 | - |
| **G** | | | | | | | | | | | | | |
| Gallic Acid (Under 100°F) | X | X | X | 1 | - | X | 1 | 2 | X | 1 | 1 | X | - |
| Gas, Natural | - | - | - | X | - | - | 1 | - | 1 | 1 | 1 | - | 2 |
| Gasohol | 2 | * | * | - | X | - | 1 | - | 2 | 1 | 1 | 1 | 1 |
| Gasoline, Aviation | X | - | 2 | - | - | - | 1 | - | - | 1 | 1 | 1 | 1 |
| Gasoline, Meter | X | * | - | - | - | - | 1 | X | 1 | 1 | 1 | 1 | X |
| Gasoline, Premium | ② | * | * | - | X | X | 1 | - | 2 | 1 | 1 | 1 | 1 |
| Gasoline, Sour | X | X | - | - | - | - | 1 | - | 2 | 1 | 1 | X | - |
| Gasoline, Standard | ① | * | * | 2 | X | X | 1 | - | 2 | 1 | 1 | 1 | 1 |
| Gasoline, Unleaded Under 50% Aromatics | X | * | X | - | X | X | 1 | - | 2 | 1 | 1 | 1 | 1 |
| Gelatin | 1 | 1 | - | - | - | - | 1 | 1 | X | 1 | 1 | 1 | - |
| Glauber's Salt | 2 | X | - | - | - | - | 1 | - | 1 | 1 | 1 | - | - |
| Glucose | 1 | 1 | 1 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Glue (Under 120°F) | 2 | 2 | 2 | - | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | X |
| Glycerine, Glycerol | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 |
| Glycol FR Fluids | - | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Glycols (Under 120°F) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 |
| Grease, Ester Base | - | - | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Grease, Petroleum Base | 2 | 1 | 2 | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Grease, Silicone Base | - | - | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Green Sulfate Liquor, Under 100°F | 2 | 2 | 1 | 2 | 1 | - | 1 | - | 1 | 1 | 1 | - | - |
| Gulf FR Fluid G-200 | - | 1 | - | - | - | X | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Gulf FR Fluid P37, P40, P43, P45, P47 | - | X | - | - | - | X | 1 | - | - | - | - | - | - |
| **H** | | | | | | | | | | | | | |
| Halowax Oil | X | X | X | - | X | - | 1 | - | - | - | - | - | - |
| Heptachlor, In Petroleum | - | 2 | X | - | - | - | 1 | - | - | - | - | - | - |
| Heptane (Under 100°F) | ② | 1 | ② | 1 | X | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| N-Hexaldehyde | 2 | X | 2 | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Hexane (Under 120°F) | 2 | 1 | ② | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Hexene | ② | 2 | - | 1 | - | - | 1 | - | 1 | 1 | 1 | - | 1 |
| Hexyl Alcohol | 1 | 2 | 1 | 1 | - | - | 1 | - | 1 | 1 | 1 | 1 | 2 |
| High Viscosity Lubricant, U4 | 2 | 1 | - | - | - | - | 1 | - | - | - | - | - | - |
| High Viscosity Lubricant, H2 | 2 | 1 | - | - | - | - | 1 | - | - | - | - | - | - |
| Hilo MS #1 | X | X | - | - | - | - | - | - | - | - | - | - | - |
| Houghto-Safe 1010,1055 (Phos. Ester) | X | X | X | 1 | X | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Houghto-Safe 1115,1120, 1130 (Phos. Ester) | X | X | X | 1 | X | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Houghto-Safe 271,416,520, 616 (Water/Glycol) | 2 | 1 | 1 | - | - | 2 | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Houghto-Safe 620, 625, 640, 525 (Water/Glycol) | 1 | 1 | 1 | - | - | 2 | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Houghto-Safe 5046, 5046W (Water/Oil Emulsion) | 2 | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Hy-Chock Oil | - | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | - | - |
| Hydrafluid 760, Texaco and Houghton | - | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | - | 1 |
| Hydrafluid AZR&O, A, B, AA, C | - | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | - | 1 |
| Hydrasol A | - | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | - | - |
| Hydraulic Fluid, Phosphate Ester Base | X | X | X | 1 | - | X | 1 | 1 | 1 | 1 | 1 | - | - |
| Hydraulic Fluid, Std. Petroleum Oils | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Hydraulic Fluid, Water Glycol Base | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Hydraulic Fluid HF - 18, HF - 20 | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Hydraulic Fluid HF - 31 | - | - | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Hydraulic Oils, Petroleum | 2 | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Hydraulic Oils, Synthetic | - | X | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Hydraulic Safety Fluid 200 & 300, Texaco | - | 1 | - | - | - | 1 | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Hydrazine | X | X | X | - | - | 2 | 1 | - | - | - | - | - | - |
| Hydro-Drive Oil, Houghton | - | 1 | - | - | - | 2 | 1 | - | - | - | - | - | - |
| Hydrobromic Acid | X | X | - | - | - | - | 1 | X | 1 | 1 | 1 | X | - |
| Hydrobromic Acid, 37% | X | X | X | 1 | 2 | X | 1 | X | 1 | 1 | 1 | X | - |
| Hydrochloric Acid | 2 | X | - | - | - | - | 1 | X | X | X | X | X | X |
| Hydrochloric Acid, 3 Molar | 2 | X | - | - | - | - | 1 | X | X | X | X | X | X |
| Hydrochloric Acid, Concentrated | X | X | - | - | - | - | 1 | X | X | X | X | X | X |
| Hydrochloric Acid, 15% | X | X | X | 1 | 2 | X | 1 | X | X | X | X | X | X |
| Hydrochloric Acid, 37% | X | - | X | 1 | 2 | X | 1 | X | X | X | X | X | X |
| Hydrocyanic Acid, 20% Under 100°F | X | X | X | - | 2 | X | 1 | 1 | X | 1 | 1 | 1 | X |
| Hydrocyanic Acid, 98% | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Hydrofluoric Acid, 10% | 2 | 2 | X | 1 | 1 | X | 1 | X | X | X | X | X | X |
| Hydrofluoric Acid, 20% (Under 120°F) | 2 | X | X | 1 | 2 | X | 1 | X | X | X | X | X | X |
| Hydrofluoric Acid, 48% (Under 120°F) | 2 | X | X | 1 | 2 | X | 1 | X | X | X | X | X | X |
| Hydrofluoric Acid, 70% | - | X | X | - | 2 | X | 1 | X | X | X | X | X | X |
| Hydrofluoric Acid, Concentrated | X | X | X | 1 | 2 | X | 1 | X | X | X | X | X | X |
| Hydrofluoric Acid, Anhydrous | - | X | - | - | - | - | 1 | - | - | - | - | - | - |
| Hydrofluosilicic | X | X | X | X | - | - | 1 | X | X | X | X | X | 1 |
| Hydrogen | 1 | 1 | - | 1 | - | - | 1 | - | X | X | X | 1 | - |
| Hydrogen Chloride Gas | - | - | - | 1 | - | - | 1 | - | - | 1 | 1 | - | - |
| Hydrogen Cyanide Gas | - | - | - | - | - | - | - | - | - | - | - | 1 | - |
| Hydrogen Fluoride (Under 100°F) | - | X | - | - | - | - | 1 | - | 2 | 2 | 1 | - | - |

○ Cover stock rating only; Rating for tube stock "X"
*Use Gates fuel hose or contact Denver Product Applications Department.

# Chemical Resistance Table

**Rating Scale:**
**1** Excellent
**2** Good resistance
**X** Not recommended
**–** Testing recommended

| Chemical Name | Gates Hose Polymers (Trade Names) | | | | | | | | Couplings & Adapters | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | C | $C_2$ | J | | | Z | | | | | | |
| | Neoprene | Nitrile | Nitrile/PVC | CPE | Hypalon | Urethane (cover rating only) | PTFE | Nylon | Carbon Steel | Stainless Steel 304 | Stainless Steel 316 | Aluminum | Brass |
| Hydrogen Peroxide, Dilute | 1 | 2 | - | - | - | - | 1 | 1 | 1 | - | 1 | - | X |
| Hydrogen Peroxide, 10% | X | 1 | X | 1 | 2 | X | 1 | X | X | 2 | 1 | 1 | X |
| Hydrogen Peroxide, 30% | X | 2 | X | 1 | 2 | X | 1 | X | X | 2 | 1 | 1 | X |
| Hydrogen Peroxide, 70% | X | X | X | 1 | - | X | 1 | X | X | 2 | 1 | 1 | X |
| Hydrogen Peroxide, 90% | X | X | - | - | - | - | 1 | - | X | 2 | 1 | - | X |
| Hydrogen Sulfide | 2 | X | - | - | - | - | 1 | 1 | 2 | 2 | 1 | - | X |
| Hydrogen Sulfide Aqueous Solution | 2 | X | - | - | - | - | 1 | - | X | - | - | X | - |
| Hydrogen Sulfide, Gas | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hydrolube, Water Glycol | 2 | 1 | - | - | - | X | 1 | - | 1 | 1 | 1 | - | 1 |
| Hydrolubric Oil, Houghton | - | 2 | - | - | - | 2 | 1 | 1 | - | - | - | - | - |
| Hydroquinone | X | - | - | - | X | - | 1 | - | - | 1 | 1 | 2 | - |
| Hykil No.6 (33%); Water (67%) | - | 2 | - | - | - | - | 1 | - | 1 | - | - | - | - |
| Hypochlorous Acid (Under 120°F) | X | X | X | - | 2 | - | 1 | 1 | 2 | 2 | 2 | X | - |
| Hypoid Grease (Parapoid 10-C) | - | 1 | - | - | - | - | 1 | - | - | - | - | - | - |
| **I** | | | | | | | | | | | | | |
| Imol, Imol S150, S220, S300, S500 | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | - |
| Industron 53 | - | 1 | - | - | - | - | 1 | - | - | - | - | - | - |
| Ink (Printers) | 1 | 1 | - | - | - | - | 1 | 1 | 2 | 2 | 1 | - | 2 |
| Ink Oil | - | 2 | - | - | - | - | 1 | - | 1 | 1 | 1 | - | 1 |
| Insulating Oil (Transformer) | 2 | 1 | 2 | - | X | - | 1 | - | 1 | 1 | 1 | - | 1 |
| Isobutyl Alcohol | 2 | 2 | 2 | 1 | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Iodine (Under 100°F) | X | X | - | 1 | 2 | X | 1 | 1 | 2 | 2 | 2 | X | - |
| Iodine, In Alcohol | 2 | - | - | - | - | X | 1 | - | - | - | - | X | - |
| Iodine Pentafluoride | X | X | - | - | - | - | 1 | - | X | 2 | 2 | X | - |
| Isooctane | 1 | 1 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 |
| Isooctyl Thioglucolate | - | - | - | - | - | - | 1 | 1 | - | - | - | - | - |
| Isobutane - WET | X | X | - | - | - | X | 1 | X | X | 1 | 1 | 2 | 1 |
| Isopropyl Acetate | X | X | X | - | X | 2 | 1 | 1 | 2 | 2 | 1 | X | 1 |
| Isopropyl Alcohol (Isopropanol) | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Isopropyl Ether | X | X | X | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **J** | | | | | | | | | | | | | |
| Fuel JP-3 (Under 100°F) | ② | 1 | ② | - | X | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 |
| Jet Fuel JP-4 (Under 100°F) | Ⓧ | 1 | 2 | - | X | - | 1 | 1 | 1 | 1 | 1 | 2 | 1 |
| Jet Fuel JP-5 | X | 1 | X | - | X | - | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Jet Fuel JP-6 | X | 1 | X | - | X | - | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| Jet Fuel JP-x | 2 | 1 | X | - | X | - | 1 | 1 | 2 | 1 | 1 | 2 | 1 |
| **K** | | | | | | | | | | | | | |
| Kerosene | X | 1 | ② | 1 | X | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Ketchup | 1 | 1 | - | - | - | - | 1 | 1 | - | 1 | 1 | - | - |
| Ketones | X | X | X | - | X | X | 1 | 1 | 1 | 1 | 1 | 2 | 1 |
| **L** | | | | | | | | | | | | | |
| Lacquer Solvents | X | X | X | - | X | 2 | 1 | 1 | X | 2 | 1 | 1 | 1 |
| Lacquers | X | X | X | - | X | - | 1 | 1 | X | X | 1 | 1 | 1 |
| Lactic Acid | 1 | X | X | - | 1 | X | 1 | - | X | 2 | 1 | X | 2 |
| Lactic Acid (5%) | 2 | 1 | - | - | - | - | 1 | 1 | X | 2 | 1 | 1 | X |
| Lactic Acid (5% Boiling) | X | X | - | - | - | - | 1 | - | X | 2 | 1 | 2 | X |
| Lactic Acid (10% Boiling) | X | X | - | - | - | - | 1 | - | X | 2 | 1 | X | X |
| Lactol | 2 | 2 | 2 | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Lard | 2 | 1 | - | 1 | - | - | 1 | 1 | 1 | 1 | 1 | 1 | X |
| Lasso (Ag Spray) | - | - | - | - | - | - | 1 | 1 | - | 1 | 1 | - | - |
| Latex | 1 | 1 | - | - | X | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Lead Acetate | X | X | - | 1 | 2 | 1 | 1 | - | 2 | 2 | 2 | X | 1 |
| Lead Arsenate | 2 | 2 | - | - | - | - | 1 | - | 1 | 1 | 1 | - | - |
| Lead Nitrate | 2 | 2 | - | - | 1 | 1 | 1 | - | 1 | 2 | 2 | - | - |
| Lead Sulfate | 1 | 1 | - | 1 | 2 | - | 1 | - | 1 | 1 | 1 | - | - |
| Lead, Tetraethyl (Under 100°F) | X | 2 | X | - | X | - | 1 | 2 | - | - | - | - | - |
| Lead, Tetramethyl | X | 2 | X | - | X | 1 | 1 | - | - | - | - | - | - |
| Lecithin | 2 | X | - | - | - | - | 1 | - | - | 1 | 1 | - | - |

◯Cover stock rating only; Rating for tube stock "X"
*Use Gates fuel hose or contact Denver Product Applications Department.

**Rating Scale:**
**1** Excellent
**2** Good resistance
**X** Not recommended
**–** Testing recommended

| Chemical Name | Gates Hose Polymers (Trade Names) | | | | | | | | Couplings & Adapters | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | C | $C_2$ | J | | | Z | | | | | | |
| | Neoprene | Nitrile | Nitrile/PVC | CPE | Hypalon | Urethane (cover rating only) | PTFE | Nylon | Carbon Steel | Stainless Steel 304 | Stainless Steel 316 | Aluminum | Brass |
| Ligroin (Petroleum Ether, Under 120°F) | X | 1 | - | - | X | - | 1 | - | 2 | 1 | 1 | X | - |
| Lime (Chlorinated, Free Chlorine 20%) | - | 1 | - | 1 | - | 1 | - | - | - | - | 2 | - | - |
| Lime Bleach (Under 100°F) | X | 2 | X | - | X | - | - | - | X | 2 | 1 | - | - |
| Lime Sulphur | 1 | X | - | - | - | - | 2 | 1 | 2 | 1 | 1 | X | X |
| Lime Sulfur (Under 135°F) | 1 | X | X | - | 2 | - | 2 | 1 | 2 | 1 | 1 | X | X |
| Lindane (Ag Spray) | - | - | - | - | - | - | 1 | 1 | - | 1 | 1 | - | - |
| Linoleic Acid | X | 2 | X | - | - | - | 1 | - | X | 2 | 1 | 1 | - |
| Linseed Oil | X | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| Linseed Oil (Boiled) | 2 | 2 | 1 | 1 | 1 | 1 | 1 | - | 2 | 1 | 1 | 1 | 2 |
| Lubricating Oil (SAE 10, 20, 30, 40, 50) | 2 | 2 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Lubricating Oils (Diester, Under 135°F) | X | 2 | X | - | - | X | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **M** | | | | | | | | | | | | | |
| Machine Oil (Under 135°F) | 1 | 1 | 2 | - | 2 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Magnesium Carbonate | 1 | 1 | 1 | - | 1 | 1 | 1 | - | 2 | 2 | 2 | 1 | - |
| Magnesium Chloride | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | X | 2 | 1 | X | 2 |
| Magnesium Hydroxide | 2 | 2 | 2 | 1 | 1 | X | 1 | - | 1 | 1 | 1 | X | X |
| Magnesium Nitrate | 2 | 2 | 2 | - | 1 | - | 1 | - | 2 | 2 | 2 | X | 1 |
| Magnesium Sulfate | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 |
| Malathion (Ag Spray Dilute) | - | 2 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | - | 1 |
| Maleic Acid | 2 | X | - | - | - | - | 1 | - | 2 | 2 | 1 | - | - |
| Malic Acid | - | - | - | - | - | - | 1 | - | 2 | 2 | 1 | - | - |
| Manganese Salts | - | 1 | 1 | - | 1 | - | 1 | - | - | - | - | - | - |
| Maxmul (Penzoil Hydraulic Fluid) | 2 | 1 | 2 | - | - | - | 1 | - | 1 | - | 1 | - | - |
| Mercuric Chloride | 1 | 2 | 2 | 1 | 1 | 2 | 1 | X | X | 1 | 1 | X | X |
| Mercuric Cyanide | 1 | 2 | 2 | - | 1 | - | - | - | 2 | 2 | 2 | X | - |
| Mercurous Nitrate (Under 120°F) | 1 | 2 | 2 | - | 1 | - | 1 | - | 1 | 1 | 1 | X | - |
| Mercury | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | X | X |
| Mesityl Oxide | X | X | X | 2 | X | X | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Methane | 2 | 1 | - | - | - | - | 1 | - | - | 1 | 1 | - | - |
| Methoxychlor (Insecticide) | - | - | - | - | - | - | 1 | X | 1 | 1 | 1 | - | - |
| Methyl Acetate | X | X | X | 1 | X | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Methyl Acrylate | X | X | X | - | X | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Methyl Alcohol | 1 | 1 | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Methyl Amine (25% Aqueous Solution) | 2 | X | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Methyl Amine (60%) | 2 | 2 | - | - | - | - | 1 | 2 | 1 | 1 | 1 | 1 | 2 |
| Methyl Amine (99%) | X | X | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | X |
| Methyl Bromide | X | X | X | - | X | X | 1 | 1 | 1 | 1 | 1 | X | 1 |
| Methyl Butyl Ketone (MBK) | X | X | X | 2 | X | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Methyl Cellosolve (Under 100°F) | 2 | X | - | 1 | X | - | 1 | - | 2 | 2 | 2 | 2 | 1 |
| Methyl Chloride | X | X | X | X | X | - | 1 | 1 | 1 | 1 | 1 | - | 1 |
| Methyl Ethyl Ketone (MEK) | X | X | X | 2 | X | X | 1 | 1 | 1 | 1 | 1 | 2 | 1 |
| Methyl Formate | 2 | X | X | - | X | - | 1 | - | 2 | 1 | 1 | 1 | 1 |
| Methyl Isobutyl Ketone (MIBK, 100°F) | X | X | X | 2 | X | X | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Methyl Isopropyl Ketone | X | X | X | 2 | X | X | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Methyl Methacrylate | X | X | X | 2 | 2 | - | 1 | - | 2 | 2 | 2 | - | - |
| Methyl Salicylate | 2 | 2 | 2 | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Methyl Sulfate (Dimethyl, Under 100°F) | X | X | X | - | X | 1 | 1 | 1 | 1 | 1 | 1 | - | - |
| Methylene Chloride | X | X | X | X | X | - | 1 | X | 1 | 1 | 1 | X | 1 |
| Methylene Dichloride | X | X | X | - | - | - | 1 | 1 | 1 | 1 | 1 | X | 1 |
| Mineral Oil (Under 120°F) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 |
| Mineral Spirits | - | 1 | 2 | - | X | - | 1 | - | 1 | 1 | 1 | 2 | 1 |
| Mobile Therm 603 | - | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Molasses (Under 120°F) | 2 | 2 | 2 | - | 1 | 1 | 1 | - | 2 | 1 | 1 | 2 | X |
| Monochlorobenzene | X | X | X | X | X | X | 1 | - | 1 | 1 | 1 | X | 1 |
| Monoethanolamine | X | 2 | - | 1 | X | - | 1 | - | 1 | 1 | 1 | 2 | 1 |

EQUIPMENT
HOSE/CPLG. SELECTION
GLOBALSPIRAL COUPLINGS
PCS COUPLINGS
GLOBALSPIRAL HIGH PRESSURE COUPLINGS
STAINLESS STEEL
PCM COUPLINGS
MEGACRIMP COUPLINGS
STAINLESS STEEL BRAID
POWER CRIMP COUPLINGS
FIELD ATTACHABLE G1 & G2 COUPLINGS
AIR BRAKE COPPER TUBING
SURELOK
HOSE CUTTERS & TOOLS
COMPRESSION AIR BRAKE
AIR BRAKE HOSE ASSEMBLIES
AIR BRAKE FOR RUBBER HOSE
FIELD ATTACHABLE C5 COUPLINGS
LOCK-ON HOSE
SINGLE BEAD
BARBED STEM
C14 COUPLINGS
LOW PRESSURE COUPLINGS
GLX COUPLINGS
POLARSEAL COUPLINGS
POLARSEAL II COUPLINGS
ASSEMBLY FABRICATION
POWER STEERING
PCTS THERMO-PLASTIC COUPLINGS
ADAPTERS
ACCESSORIES
QUICK DISCONNECT COUPLERS
BALL VALVES
KITS

# Chemical Resistance Table

**Rating Scale:**
**1** Excellent
**2** Good resistance
**X** Not recommended
**–** Testing recommended

| Chemical Name | Gates Hose Polymers (Trade Names) A: Neoprene | C: Nitrile | $C_2$: Nitrile/PVC | J: CPE | Z: Hypalon | Z: Urethane (cover rating only) | Z: PTFE | Z: Nylon | Couplings & Adapters: Carbon Steel | Stainless Steel 304 | Stainless Steel 316 | Aluminum | Brass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Morpholine (Pure Additive) | - | - | - | - | - | - | 1 | - | - | 1 | 1 | - | - |
| Motor Oils (Under 135°F) | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Mould Oil | - | - | - | - | - | - | 1 | - | 1 | 1 | 1 | - | - |
| Muriatic Acid (Hydrochloric) | X | X | X | 1 | 2 | X | 1 | X | X | X | X | X | X |
| Mustard | 1 | 2 | 1 | - | 1 | - | 1 | - | X | 1 | 1 | 2 | - |
| **N** | | | | | | | | | | | | | |
| Naphtha (Low Aromatic Content) | X | 2 | X | 1 | X | - | 1 | 1 | 2 | 1 | 1 | 1 | 1 |
| Naphthalene (Tar Camphor) | X | X | X | 1 | X | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Naphthalene | X | X | X | - | X | - | 1 | - | 1 | 1 | 1 | - | 1 |
| Naphthenic Acid | - | 2 | - | - | - | - | 1 | - | - | 2 | 1 | - | - |
| Natural Gas | - | - | - | - | - | - | 1 | - | 1 | 1 | 1 | - | 2 |
| Nickel Acetate | - | - | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Nickel Chloride | 2 | 2 | 2 | 1 | 2 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Nickel Nitrate | 2 | 2 | 2 | 1 | 2 | - | 1 | 1 | 2 | 2 | 2 | X | - |
| Nickel Plating Solution | - | 2 | - | - | 2 | X | 1 | - | - | 1 | 1 | - | - |
| Nickel Salts | 2 | - | 1 | - | - | - | 1 | - | - | - | - | - | - |
| Nicotine Salts | - | - | - | - | - | 1 | 1 | - | 1 | X | 2 | - | - |
| Nitric Acid | X | X | - | - | - | - | 1 | - | X | 1 | 1 | - | X |
| Nitric Acid, 3 Molar | X | X | - | - | - | - | 1 | - | X | 1 | 1 | - | X |
| Nitric Acid, Concentrated (Boiling) | X | X | - | - | - | - | 1 | X | X | 2 | 2 | X | X |
| Nitric Acid, Inhibited Red Fuming (IRFNA) | X | X | - | - | - | - | 1 | - | X | 1 | 1 | 1 | X |
| Nitric Acid, Red Fuming (RNFA) | X | X | X | - | X | X | 1 | X | X | 2 | 2 | 2 | X |
| Nitric Acid, 5% To 10% | X | X | X | 1 | 2 | X | 1 | X | X | 2 | 2 | 1 | X |
| Nitric Acid, 20% | X | X | X | 1 | 2 | X | 1 | X | X | 2 | 2 | X | X |
| Nitric Acid, 50% (Boiling) | X | X | X | X | X | X | 1 | X | X | 2 | 2 | X | X |
| Nitric Acid, 65% (Boiling) | X | X | X | X | X | X | 1 | X | X | 2 | 2 | X | X |
| Nitric Acid & Hydrochloric Acid | - | X | - | - | - | - | 1 | - | X | X | X | X | - |
| Nitrobenzene (Under 100°F) | X | X | X | 2 | X | X | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Nitroethane | X | X | X | 1 | 2 | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Nitrogen | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Nitrogen Oxide Up To 50% (Under 100°F) | 1 | 1 | 2 | 1 | 1 | - | 1 | 1 | 1 | 1 | 1 | - | X |
| Nitromethane | X | X | X | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Nitropropane | X | X | X | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Nyvac 20 (WG), 30 (WG) | - | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Nyvac FR Fluid | - | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Nyvac FR200 Fluid | - | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| N-Octane | X | 2 | - | 1 | X | - | - | - | 1 | 1 | 1 | - | 1 |
| **O** | | | | | | | | | | | | | |
| Octyl Alcohol | 2 | 2 | 2 | 1 | - | - | 1 | 1 | 1 | 1 | 1 | - | 2 |
| Oils, Crude | X | 2 | - | - | - | - | 1 | - | 1 | - | - | - | - |
| Oil (SAE, Under 100°F) | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Oleic Acid (Under 120°F) | 2 | 2 | 2 | 1 | 2 | 1 | 1 | - | 2 | 2 | 1 | 1 | 2 |
| Oleum | X | X | X | X | X | - | 1 | X | - | - | 1 | - | - |
| Olive Oil | X | 2 | 2 | 2 | X | - | 1 | - | 2 | 1 | 1 | 1 | 2 |
| OS 45 Type III (OS45) | 1 | 2 | - | - | - | - | 1 | - | - | - | - | - | - |
| OS 45 Type IV (OS45-1) | 1 | 2 | - | - | - | - | 1 | - | - | - | - | - | - |
| OS 70 | 1 | 2 | - | - | - | - | 1 | - | - | - | - | - | - |
| Oxalic Acid (5%, Hot And Cold) | 2 | 2 | - | - | - | - | 1 | 2 | X | 2 | 1 | 1 | X |
| Oxalic Acid (10%) | 2 | 2 | - | - | - | - | 1 | 2 | X | 2 | 1 | 1 | X |
| Oxalic Acid (10% Boiling) | X | X | - | - | - | - | 1 | - | X | X | X | X | X |
| Oxalic Acid | X | X | X | 1 | 2 | X | 1 | X | X | 2 | 1 | 2 | X |
| Oxygen, Gaseous | - | - | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Ozone (Dry) | 2 | X | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Ozone (Wet) | - | X | - | - | - | - | 1 | - | X | 2 | 1 | 2 | - |
| **P** | | | | | | | | | | | | | |
| Paint | X | - | - | - | X | X | 1 | 2 | - | 1 | 1 | 1 | 1 |
| Paint Solvents (Oil Base) | X | X | - | - | X | X | 1 | 2 | - | 1 | 1 | 1 | 1 |
| Paints (Oil Base) | - | 1 | - | - | 1 | - | 1 | 1 | - | - | - | - | - |
| Paint Thinner, Duco | 2 | 1 | - | - | - | - | 1 | 1 | 2 | 2 | 1 | 2 | X |

**Rating Scale:**
**1** Excellent
**2** Good resistance
**X** Not recommended
**–** Testing recommended

| Chemical Name | Gates Hose Polymers (Trade Names) A: Neoprene | C: Nitrile | $C_2$: Nitrile/PVC | J: CPE | Z: Hypalon | Z: Urethane (cover rating only) | Z: PTFE | Z: Nylon | Couplings & Adapters: Carbon Steel | Stainless Steel 304 | Stainless Steel 316 | Aluminum | Brass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Palmetic Acid | 2 | 2 | 2 | 1 | X | 1 | 1 | 1 | 2 | 2 | 1 | 1 | X |
| Palm Oil | 2 | 1 | 2 | - | 2 | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Paraffin (Petroleum) | 2 | 1 | 2 | 1 | X | - | 1 | 1 | 2 | 1 | 1 | 1 | 1 |
| Paraformaldehyde | 2 | 2 | 2 | - | 2 | 2 | 1 | - | 1 | 1 | 1 | 1 | - |
| Peanut Oil (Less Than 100°F) | 2 | 1 | 2 | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Pentasol | 2 | 2 | 2 | - | 2 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Perchloric Acid | X | X | - | - | 2 | X | 1 | X | X | 2 | 1 | X | - |
| Perchloroethylene (Tetrachloroethylene) | X | X | X | 2 | X | - | 1 | 2 | 1 | 1 | 1 | X | X |
| Petroleum Ether | X | 2 | - | 1 | - | - | 1 | - | 2 | 1 | 1 | - | 1 |
| Petroleum Oil (Crude) | 2 | 1 | - | - | - | - | 1 | - | - | - | - | - | - |
| Petroleum Oil (Below 250°F) | 2 | 1 | - | - | - | - | 1 | - | - | - | - | - | - |
| Petroleum Oil (Above 250°F) | X | X | - | - | - | - | 1 | - | - | - | - | - | - |
| Petroleum Oils (Under 100°F) | 2 | 1 | 2 | - | 2 | 2 | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Petroleum Oils (Refined) | 2 | 1 | 2 | - | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Petroleum Oils (Sour) | 2 | 2 | - | - | X | 2 | 1 | - | 2 | 1 | 1 | 1 | X |
| Phenol (Carbolic Acid) | X | X | X | 1 | X | X | 1 | X | 2 | 1 | 1 | 1 | X |
| Phenol (70/30 Water) | X | X | - | - | - | - | 1 | - | - | 1 | 1 | 1 | - |
| Phenol (85/15 Water) | X | X | - | - | - | - | 1 | - | - | 1 | 1 | 1 | - |
| Phorone (Diisopropylidene Acetone) | X | X | - | - | X | X | 1 | - | 1 | 1 | 1 | - | 1 |
| Phosphate Esters (Concentrated) | X | X | - | X | X | X | 1 | 2 | - | - | - | - | - |
| Phosphate Esters (3 Molar) | X | X | - | 2 | 2 | X | 1 | 2 | - | - | - | - | - |
| Phosphate Esters (Dilute) | X | X | - | 1 | 1 | X | 1 | 2 | - | - | - | - | - |
| Phosphoric Acid | 2 | 2 | - | - | - | - | 1 | - | - | - | 2 | - | - |
| Phosphoric Acid (3 Molar) | X | X | - | - | - | - | 1 | - | - | - | - | - | - |
| Phosphoric Acid (Concentrated) | X | X | - | - | - | - | 1 | - | - | - | - | - | - |
| Phosphoric Acid (1%) | 2 | - | - | - | - | - | 1 | - | - | 1 | 1 | - | X |
| Phosphoric Acid (5%) | 2 | X | - | - | - | - | 1 | - | - | 1 | 1 | - | X |
| Phosphoric Acid (10%) | 2 | X | - | - | - | - | 1 | - | X | - | 1 | X | X |
| Phosphoric Acid (10% Hot) | 2 | X | - | - | - | - | 1 | - | X | - | 1 | X | X |
| Phosphoric Acid (50%) | 2 | 2 | 2 | 1 | 1 | X | 1 | X | X | 2 | 1 | X | 2 |
| Phosphoric Acid (50% Hot) | 2 | X | - | - | - | - | 1 | - | X | X | 2 | X | X |
| Phosphoric Acid (85%) | 2 | X | - | 1 | 1 | X | 1 | X | X | 2 | 2 | X | X |
| Phosphoric Acid (85% Hot) | 2 | X | - | - | - | - | 1 | - | X | X | X | X | X |
| Phosphoric Acid (Aerated) | - | - | - | - | - | - | 1 | - | X | - | 2 | - | - |
| Phosphoric Acid Air Free | - | - | - | - | - | - | 1 | - | X | - | - | X | - |
| Photographic Developers | 1 | 1 | - | - | - | - | 1 | - | X | 1 | 1 | - | - |
| Photographic, Emulsions | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Photographic, Fixing Solutions | 2 | - | - | - | 2 | - | 1 | - | - | 1 | 1 | - | - |
| Phthalic Acid | - | - | - | - | - | - | - | - | 2 | 2 | 1 | 2 | - |
| Picric Acid (Water Solution 100°F) | 2 | 2 | 2 | - | 2 | - | 1 | X | X | 1 | 1 | X | X |
| Pinene | X | 2 | - | 2 | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Pine Oil | X | 2 | - | 2 | X | - | 1 | 1 | 1 | 1 | 1 | 1 | - |
| Piperazine Hydrochloride Solution (34%) | - | 2 | - | - | - | - | 1 | - | - | - | - | - | - |
| Pitch | 2 | 1 | - | - | 2 | 2 | 1 | 1 | - | - | - | - | - |
| Plating Solutions (Chrome) | X | X | - | - | - | X | 1 | X | - | X | X | - | - |
| Plating Solutions (Other) | - | 1 | - | - | - | - | 1 | - | - | - | - | - | - |
| Polyester Resin | - | - | - | - | - | - | - | 2 | - | - | - | - | - |
| Polyurethane Foam (Under 125°F) | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Potassium Acetate | 2 | 2 | - | 1 | 2 | X | 1 | - | 2 | 1 | 1 | X | - |
| Potassium Bicarbonate | 1 | 1 | - | - | 1 | - | 1 | 1 | 1 | 2 | 2 | 1 | - |
| Potassium Bisulfite | - | 1 | - | - | - | - | 1 | 1 | - | - | - | - | - |
| Potassium Bromate | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Potassium Bromide | 1 | 1 | - | - | 1 | 2 | 1 | 1 | X | X | 2 | X | - |
| Potassium Carbonate (Potash) | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | X | X |
| Potassium Chlorate | 1 | 1 | - | - | - | 2 | 1 | 1 | 2 | 2 | 2 | 2 | - |
| Potassium Chloride (1% To 5%) | 1 | 1 | - | 1 | - | 2 | 1 | 1 | 1 | 2 | 2 | X | X |
| Potassium Chloride (Boiling) | - | - | - | - | - | - | 1 | - | - | 2 | 2 | - | X |
| Potassium Cyanide | 1 | 1 | - | 1 | - | - | 1 | 1 | 2 | 1 | 1 | X | X |
| Potassium Dichromate | 1 | 1 | - | 1 | - | - | 1 | 2 | 1 | 2 | 2 | 2 | - |
| Potassium Ferrocyanide | - | - | - | - | - | - | 1 | - | 2 | 1 | 1 | 2 | - |

○Cover stock rating only; Rating for tube stock "X"  *Use Gates fuel hose or contact Denver Product Applications Department.

# Chemical Resistance Table

**Rating Scale:**
**1** Excellent
**2** Good resistance
**X** Not recommended
**–** Testing recommended

| Chemical Name | Gates Hose Polymers (Trade Names A, C, $C_2$, J, Z): Neoprene | Nitrile | Nitrile/PVC | CPE | Hypalon | Urethane (cover rating only) | PTFE | Nylon | Couplings & Adapters: Carbon Steel | Stainless Steel 304 | Stainless Steel 316 | Aluminum | Brass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Potassium Fluoride | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Potassium Hydroxide | 2 | 2 | - | - | - | - | 1 | - | 1 | 1 | 1 | - | - |
| Potassium Hydroxide (5%) | 1 | 1 | - | - | - | - | 1 | 1 | 2 | 2 | 2 | X | X |
| Potassium Hydroxide (27% Boiling) | - | - | - | - | - | - | 1 | - | 2 | 2 | 1 | X | X |
| Potassium Hydroxide (30%, Caustic Potash) | - | - | - | 1 | - | - | 1 | - | - | - | - | - | - |
| Potassium Hydroxide (50% Boiling) | - | - | - | - | - | - | 1 | - | 2 | 2 | 2 | X | X |
| Potassium Hydroxide (70%) | - | X | - | - | - | - | 1 | - | - | - | - | X | X |
| Potassium Hydroxide (70% Hot) | - | - | - | - | - | - | 1 | - | X | - | - | X | X |
| Potassium Iodide | 1 | 1 | - | - | 1 | - | 1 | 1 | 1 | 2 | 2 | - | - |
| Potassium Nitrate | 1 | 1 | - | 1 | - | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| Potassium Nitrate (1% To 5%) | 1 | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 2 |
| Potassium Permanganate | 1 | 2 | - | - | - | - | 1 | 2 | 1 | 2 | 2 | 2 | - |
| Potassium Permanganate (5%) | 1 | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | - |
| Potassium Persulfate | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Potassium Phosphate | 1 | - | - | - | 1 | - | 1 | - | X | 2 | 2 | X | - |
| Potassium Sulfate | 1 | 1 | - | 1 | - | 1 | 1 | 1 | 1 | 2 | 2 | 1 | - |
| Potassium Sulfate - 1% & 5% | 1 | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | X |
| Potassium Sulfide | 1 | 1 | - | - | - | - | 1 | - | 2 | 2 | 2 | - | - |
| Potassium Sulfite | 1 | 1 | - | 1 | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Potassium Thiosulfate | 1 | - | - | - | 1 | - | 1 | - | - | - | - | - | - |
| Primatol A, S, P (Ag Spray) | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Propane Gas | X | X | - | - | - | X | 1 | - | 1 | 1 | 1 | - | 1 |
| Propionic Acid | X | X | - | - | - | - | 1 | - | 1 | - | 2 | 2 | - |
| Propyl Acetate | X | X | - | 2 | - | - | 1 | - | 1 | - | - | - | - |
| Propyl Alcohol | 1 | 1 | 2 | 1 | - | X | 1 | 1 | 1 | 1 | 1 | - | 2 |
| Propylene (Liquid Or Gas, Ambient) | X | X | - | 1 | - | - | 1 | 2 | 1 | 1 | 1 | 1 | - |
| Propylene Dichloride | - | - | - | - | - | - | 1 | - | 1 | 2 | 1 | X | - |
| Propylene Glycol | 1 | 1 | - | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | - | - |
| Propylene Oxide | X | X | - | - | - | - | - | - | 2 | 1 | 1 | 2 | - |
| Purina Insecticide | X | X | - | - | - | - | 1 | 2 | 1 | 1 | 1 | 1 | 2 |
| Puropale RX Oils | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Pyranol, Transformer Oil | 2 | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Pydraul | X | X | - | - | - | - | 1 | - | - | - | - | - | - |
| Pydraul 10E, 29E-LT, 30E, 60, 65E, 115E | X | X | - | 2 | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Pydraul 135 | - | X | - | 2 | - | - | 1 | 2 | 1 | 1 | 1 | - | - |
| Pydraul 150 | X | X | X | 2 | X | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Pydraul 280 | X | X | X | 2 | X | 2 | 1 | 2 | 1 | 1 | 1 | - | - |
| Pydraul 312 | X | X | X | 2 | - | 2 | 1 | 1 | 1 | 1 | 1 | - | - |
| Pydraul 50E | - | - | - | 2 | - | 2 | 1 | 1 | 1 | 1 | 1 | - | - |
| Pydraul 540 | X | X | X | 2 | X | X | 1 | X | 1 | 1 | 1 | - | - |
| Pydraul 625 | X | X | X | 2 | X | 2 | 1 | 2 | 1 | 1 | 1 | - | - |
| Pydraul A-200 | X | X | X | 2 | X | X | 1 | 2 | 1 | 1 | 1 | - | - |
| Pydraul F-9 | X | X | X | 2 | X | 2 | 1 | 1 | 1 | 1 | 1 | - | - |
| Pyridine (50%) | X | X | - | - | X | 1 | 1 | - | 1 | 1 | 1 | 1 | 1 |
| Pyrogard 160, 230, 630 | - | - | - | - | - | - | 1 | - | 1 | 1 | 1 | - | - |
| Pyrogard 51, 53, 55 | - | X | - | - | - | - | 1 | - | 1 | 1 | 1 | - | - |
| Pyrogard C, D | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Q** | | | | | | | | | | | | | |
| Quench Oil | 2 | 2 | - | - | - | - | 1 | - | - | 1 | 1 | 1 | - |
| Quintolubric 822 | 2 | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | 1 |
| **R** | | | | | | | | | | | | | |
| Ramrod (Ag Spray) | - | - | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Rando Oils | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Rape Seed Oil | 2 | X | - | - | X | - | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Red Oil (Comm. Oleic Acid, MIL-H-5606) | 2 | 2 | 2 | 1 | 2 | - | 1 | 1 | 2 | 2 | 1 | 1 | 2 |
| Refined Wax (Petroleum) | 2 | 1 | 2 | - | - | 2 | 1 | 1 | 1 | 1 | 1 | - | 1 |
| Regal Oils R&O | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Richfield Weed Killer | X | 2 | - | - | X | - | 1 | - | - | - | - | - | - |
| Round Up | 2 | 2 | - | - | - | - | 1 | 1 | 2 | 1 | 1 | 1 | 1 |
| Rubilene Oils | - | 1 | - | - | - | 2 | 1 | 1 | - | - | - | - | - |
| **S** | | | | | | | | | | | | | |
| Salicylic Acid | 1 | X | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 2 | - |
| Salt Water (Sea Water) | 2 | 2 | 2 | - | 2 | 1 | 1 | 1 | 2 | 1 | 1 | X | 2 |
| Santosafe W-G15, W-G20, W-G30 | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Santo Safe 300 | X | X | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Sevin | - | - | - | - | - | - | 1 | 1 | - | - | - | - | - |
| Sewage | 2 | 2 | 2 | 1 | 2 | - | 1 | 1 | X | 1 | 1 | 2 | 1 |
| SFR Fluid B (Shell) | - | X | - | - | - | - | 1 | - | - | - | - | - | - |
| SFR Fluid C (Shell) | - | X | - | - | - | - | 1 | - | - | - | - | - | - |
| Shellac | 2 | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | - |
| Shellac (Bleached) | 2 | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Shellac (Orange) | 2 | 1 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Silicone Greases | 2 | 2 | 2 | - | 2 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Silicone Oils | 2 | 2 | 2 | - | 2 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Silver Cyanide | 1 | - | - | - | - | - | 1 | - | 1 | 1 | 1 | X | - |
| Silver Nitrate | 1 | 1 | 1 | 1 | 1 | - | 1 | 1 | 2 | 1 | 1 | 1 | 2 |
| Skydrol 500A& 7000 | X | X | X | 2 | X | - | 1 | 1 | 1 | 1 | 1 | 1 | - |
| Soap Oil | X | X | - | - | X | - | 1 | - | 1 | 1 | 1 | - | - |
| Soap Solutions | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Soda Ash (Sodium Carbonate) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | X | 2 |
| Soda Water | - | - | - | - | - | 1 | 1 | 1 | - | - | - | - | - |
| Sodium Acetate | X | X | X | 1 | X | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sodium Benzoate | - | - | - | - | - | 1 | 1 | - | - | - | - | - | - |
| Sodium Bicarbonate | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 |
| Sodium Bisulfate (Niter Cake) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | X | 2 | 1 | X | X |
| Sodium Bisulfite | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | - |
| Sodium Borate | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - |
| Sodium Carbonate | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | X | 2 |
| Sodium Chlorate | 2 | 1 | - | - | 1 | 1 | 1 | 1 | 2 | 2 | 2 | X | - |
| Sodium Chloride | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | X | X |
| Sodium Chloride - 2% | 1 | 1 | - | - | - | - | 1 | 1 | 2 | 2 | 1 | X | X |
| Sodium Chloride - 5% | 1 | 1 | - | - | - | - | 1 | 1 | - | 2 | 1 | X | X |
| Sodium Chloride - 5% @ 150°F | 1 | 1 | - | - | - | - | 1 | 1 | - | 2 | 1 | - | X |
| Sodium Chloride Saturated | 1 | 1 | - | - | - | - | 1 | 1 | - | 1 | 1 | X | - |
| Sodium Chloride Saturated (Boiling) | - | - | - | - | - | - | 1 | - | - | 2 | 1 | X | - |
| Sodium Chloride Slurry | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Sodium Cyanide | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | X | X |
| Sodium Dichromate | 2 | 1 | - | 1 | 2 | 1 | 1 | 1 | - | - | - | - | - |
| Sodium Ferricyanide | - | - | - | - | - | - | 1 | - | 2 | 2 | 2 | - | - |
| Sodium Ferrocyanide | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Sodium Fluoride | - | 1 | - | - | - | - | 1 | - | 2 | 2 | 2 | - | - |
| Sodium Fluoride (5%) | - | 1 | - | - | - | - | 1 | 1 | 2 | 2 | 2 | - | - |
| Sodium Fluoride (70%) | - | - | - | - | - | - | 1 | - | - | - | 2 | - | - |
| Sodium Hydrosulfide | 1 | X | - | - | - | - | 1 | - | - | - | - | - | - |
| Sodium Hydrosulfite | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Sodium Hydroxide | 2 | 2 | - | - | - | - | 1 | - | 2 | - | - | - | X |
| Sodium Hydroxide (3 Molar) | 2 | 2 | - | - | - | - | 1 | - | - | - | - | - | X |
| Sodium Hydroxide (10%) | - | - | - | 1 | - | - | 1 | - | - | - | - | - | - |
| Sodium Hydroxide (20% Cold) | 1 | 2 | - | - | - | - | 1 | 1 | 1 | 1 | 1 | X | X |
| Sodium Hydroxide (20% Hot) | 1 | X | - | - | - | - | 1 | - | 2 | 1 | 1 | X | X |
| Sodium Hydroxide (40%) | 1 | 2 | 2 | 1 | 1 | - | 1 | 2 | 2 | 1 | 1 | X | X |
| Sodium Hydroxide (50% Cold) | 2 | X | X | 1 | 1 | - | 1 | 2 | 2 | 2 | 2 | X | X |
| Sodium Hydroxide (50% Hot) | - | - | - | 1 | 2 | - | 1 | X | X | 2 | 2 | X | X |
| Sodium Hydroxide (60%) | 2 | X | X | 1 | 2 | - | 1 | X | X | 2 | 2 | X | X |
| Sodium Hydroxide (70% Cold) | 1 | 2 | - | - | - | - | 1 | - | - | - | 2 | X | X |
| Sodium Hydroxide (70% Hot) | - | - | - | - | - | - | 1 | - | - | - | - | - | - |

○Cover stock rating only; Rating for tube stock "X"
*Use Gates fuel hose or contact Denver Product Applications Department.

EQUIPMENT
HOSE/CPLG. SELECTION
GLOBALSPIRAL COUPLINGS
PCS COUPLINGS
GLOBALSPIRAL HIGH PRESSURE COUPLINGS
STAINLESS STEEL
PCM COUPLINGS
MEGACRIMP COUPLINGS
STAINLESS STEEL BRAID
POWER CRIMP COUPLINGS
FIELD ATTACHABLE G1 & G2 COUPLINGS
AIR BRAKE COPPER TUBING
SURELOK
HOSE CUTTERS & TOOLS
COMPRESSION AIR BRAKE
AIR BRAKE HOSE ASSEMBLIES
AIR BRAKE FOR RUBBER HOSE
FIELD ATTACHABLE C5 COUPLINGS
LOCK-ON HOSE
SINGLE BEAD
BARBED STEM
C14 COUPLINGS
LOW PRESSURE COUPLINGS
GLX COUPLINGS
POLARSEAL COUPLINGS
POLARSEAL II COUPLINGS
ASSEMBLY FABRICATION
POWER STEERING
PCTS THERMO-PLASTIC COUPLINGS
ADAPTERS
ACCESSORIES
QUICK DISCONNECT COUPLERS
BALL VALVES
KITS

# Chemical Resistance Table

**Rating Scale:**
**1** Excellent
**2** Good resistance
**X** Not recommended
**–** Testing recommended

| Chemical Name | Gates Hose Polymers (Trade Names) A: Neoprene | C: Nitrile | $C_2$: Nitrile/PVC | J: CPE | Hypalon | Z: Urethane (cover rating only) | PTFE | Nylon | Couplings & Adapters: Carbon Steel | Stainless Steel 304 | Stainless Steel 316 | Aluminum | Brass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sodium Hydroxide (80% Hot) | 1 | X | - | - | - | - | 1 | - | X | X | X | X | X |
| Sodium Hypochlorite | 1 | X | - | - | - | - | 1 | - | X | X | X | X | - |
| Sodium Hypochlorite, 5% | - | X | X | 1 | 1 | X | 1 | 1 | X | X | 2 | X | X |
| Sodium Hypochlorite, 20% | X | X | X | 1 | 1 | X | 1 | 2 | X | X | 2 | X | X |
| Sodium Hyposulfate | X | - | - | - | - | - | 1 | - | X | 1 | 1 | X | - |
| Sodium Metaphosphate | 2 | 2 | 2 | 1 | 2 | - | 1 | 1 | X | 1 | 1 | 1 | X |
| Sodium Nitrate | X | X | - | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| Sodium Perborate | X | X | - | - | X | - | 1 | 2 | X | 1 | 1 | 1 | X |
| Sodium Peroxide (Sodium Dioxide) | 1 | 2 | 1 | 2 | 1 | - | 1 | X | X | 1 | 1 | 1 | X |
| Sodium Phosphate | X | 1 | - | 1 | - | 1 | 1 | 1 | 2 | 1 | 1 | X | X |
| Sodium Phosphate (Mono) | 1 | 1 | - | - | - | - | 1 | - | - | - | - | - | - |
| Sodium Phosphate (Dibasic) | 2 | 1 | - | - | - | - | 1 | - | - | - | - | - | - |
| Sodium Phosphate (Tribasic) | 2 | 1 | - | - | - | - | 1 | - | 2 | 2 | 2 | - | - |
| Sodium Silicate | 1 | 1 | - | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | - | 1 |
| Sodium Silicate (Hot) | 1 | 1 | - | - | - | - | 1 | - | 2 | 2 | 2 | X | X |
| Sodium Sulfate | 1 | 1 | - | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | - | 2 |
| Sodium Sulfide | 1 | 1 | - | 1 | 1 | 1 | 1 | 1 | X | X | 2 | X | X |
| Soium Sulfide, Saturated | 1 | 1 | - | - | - | - | 1 | 1 | 2 | 2 | 1 | X | X |
| Sodium Sulfite | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | - | X |
| Sodium Sulfite, 5% | 1 | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Sodium Sulfite, 10% @ 150°F | 1 | 1 | - | - | - | - | 1 | - | 2 | 2 | 2 | 2 | - |
| Sodium Thiosulfate (HPO, Antichior) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | X | 1 | 1 | 2 | X |
| Sodium Tripolyphosphate (STPP) | - | - | - | - | - | - | 1 | - | - | 1 | 1 | X | X |
| Solnus Oils | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sour Crude Oil | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Soybean Oil | 2 | 2 | 2 | - | 2 | - | 1 | 1 | 1 | 1 | 1 | 1 | - |
| Spent Acid | - | - | - | - | 2 | - | 1 | - | - | 1 | 1 | - | - |
| Stannic Chloride | X | 2 | 2 | 1 | X | - | 1 | X | X | X | X | X | X |
| Stannic Chloride, 50% | X | 1 | - | - | - | - | 1 | - | X | X | X | X | - |
| Stannous Chloride (Under 150°F) | 1 | 1 | - | 1 | 1 | - | 1 | X | - | X | 2 | X | - |
| Stannous Chloride, 15% | 1 | 1 | - | - | - | - | 1 | - | X | X | - | X | - |
| Starch | 2 | 2 | - | - | 1 | 1 | 1 | 1 | X | 1 | 1 | 1 | - |
| Steam | USE STEAM HOSE | | | | - | 2 | 1 | - | 1 | 1 | 1 | - | 2 |
| Stearic Acid | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | X | 2 | 1 | X | X |
| Stearin | - | - | - | - | - | 1 | 1 | 2 | - | - | - | - | - |
| Stoddard Solvent | 2 | 2 | X | 1 | - | X | 1 | 1 | 2 | 1 | 1 | 1 | 1 |
| Styrene (Vinyl Benzene) | X | X | - | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Styrene (Monomer) | - | X | - | 2 | - | - | 1 | 2 | 2 | X | 2 | X | 2 |
| Sucrose Solutions | 1 | 1 | 1 | - | 1 | - | 1 | - | 1 | 1 | 1 | - | - |
| Sulfamic Acid (10%, Under 170°F) | - | - | - | 1 | 2 | - | 1 | - | - | - | - | - | - |
| Sulfate Black Liquor | 1 | 1 | - | - | - | - | 1 | 1 | 2 | 2 | 2 | X | - |
| Sulfate Green Liquor | 1 | 1 | - | - | - | - | 1 | 1 | 2 | 2 | 2 | X | - |
| Sulfur | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Sulfur (Molten) | X | X | - | - | - | - | - | - | - | - | - | - | - |
| Sulfur Chloride | X | X | X | - | 2 | - | 1 | 2 | X | X | 2 | X | X |
| Sulfur Dioxide (Moist) | 2 | X | - | - | 2 | - | 1 | 1 | - | 2 | 1 | 1 | X |
| Sulfur Dioxide (Dry) | X | X | X | - | 2 | - | 1 | X | 2 | 1 | 1 | 1 | 1 |
| Sulfur Dioxide (Liquid) | 2 | X | - | - | 2 | - | 1 | - | - | - | - | - | - |
| Sulfur Hexaflouride (Gas) | 1 | 2 | - | - | 2 | - | 1 | X | - | - | - | - | - |
| Sulfur Trioxide (Dry) | X | X | X | X | X | - | 1 | 1 | 2 | 2 | 2 | 2 | X |
| Sulfuric Acid, 85% | X | X | - | - | - | - | 1 | - | X | 2 | 1 | X | - |
| Sulfuric Acid, 3 Molar | X | X | - | - | - | - | 1 | - | - | - | - | - | - |
| Sulfuric Acid, Aerated, No Velocity | - | - | - | - | - | - | 1 | - | 2 | 2 | 2 | X | - |
| Sulfuric Acid, Air Free No Velocity | - | - | - | - | - | - | 1 | - | X | X | 2 | X | - |
| Sulfuric Acid, Concentrated | X | X | - | - | - | - | 1 | - | - | 1 | 1 | - | - |
| Sulfuric Acid, Fuming, Oleum | X | - | - | - | - | - | 1 | - | 2 | 1 | 1 | 2 | - |
| Sulfuric Acid (10%) | 1 | 2 | 2 | 1 | 1 | - | 1 | X | - | X | X | 2 | X |

**Rating Scale:**
**1** Excellent
**2** Good resistance
**X** Not recommended
**–** Testing recommended

| Chemical Name | Gates Hose Polymers (Trade Names) A: Neoprene | C: Nitrile | $C_2$: Nitrile/PVC | J: CPE | Hypalon | Z: Urethane (cover rating only) | PTFE | Nylon | Couplings & Adapters: Carbon Steel | Stainless Steel 304 | Stainless Steel 316 | Aluminum | Brass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfuric Acid (30%) | 1 | - | - | 1 | 1 | - | 1 | X | X | X | 2 | X | X |
| Sulfuric Acid (50%) | 2 | X | X | 1 | 1 | - | 1 | X | X | X | 2 | X | X |
| Sulfuric Acid (75%) | X | X | X | - | 2 | - | 1 | X | X | X | 2 | X | X |
| Sulfuric Acid (93%) | X | X | X | - | X | - | 1 | X | 2 | X | 2 | X | X |
| Sulfuric Acid (98%) | X | X | X | X | X | - | 1 | X | 2 | X | 2 | X | X |
| Sulfurous Acid | 2 | 2 | - | - | - | - | 1 | X | X | X | 2 | 2 | - |
| Sulfurous Acid (10%) | - | X | - | 1 | 1 | - | 1 | - | - | X | 2 | 1 | X |
| Sulfurous Acid (75%) | X | X | X | 1 | 1 | - | 1 | X | X | X | 2 | X | X |
| Sun R&O Oils | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sunsafe (Fire Resist. Hydr. Fluid) | 2 | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | - |
| Suntac HPOils | - | 1 | - | - | - | 2 | 1 | 1 | 1 | - | 1 | 1 | - |
| Suntac WR Oils | - | 1 | - | - | - | 2 | 1 | 1 | 1 | - | 1 | 1 | - |
| Sunvis Oils 700, 800, 900 | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | - | - |
| Super Hydraulic Oils (Conoco) | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | - |
| Sutan Plus, Herbicide | X | X | X | 1 | - | - | - | 1 | 1 | 1 | 1 | 1 | - |
| Sutazine Plus, Herbicide | X | X | - | 1 | - | - | - | 1 | X | 1 | 1 | 1 | - |
| Synthetic Oil (Citgo) | - | - | - | - | - | 2 | - | 1 | 1 | 1 | 1 | - | - |
| Syrup | 2 | 1 | 2 | - | - | - | 1 | 1 | - | 1 | 1 | 1 | - |
| **T** | | | | | | | | | | | | | |
| Tall Oil (Under 150°F) | 2 | 2 | 2 | - | X | - | 1 | - | 2 | X | 2 | X | - |
| Tallow | 2 | 2 | 2 | - | - | - | 1 | 1 | 2 | 2 | 2 | 1 | 2 |
| Tannic Acid (10%) | 2 | X | - | 1 | 2 | - | 1 | X | 2 | 1 | 1 | 2 | X |
| Tar And Tar Oil | 2 | - | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Tar (Bituminous, Under 100°F) | 2 | 2 | 2 | X | - | - | 1 | - | 1 | 1 | 1 | 1 | 2 |
| Tartaric Acid | 2 | 2 | 2 | 1 | 1 | - | 1 | 1 | X | 2 | 2 | 2 | X |
| Tellus Oils | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Tenol Oils | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | - | - |
| Tergitol | - | - | - | - | - | - | 1 | - | 2 | 1 | 1 | - | 2 |
| Terpineol | X | 2 | - | 1 | 2 | - | 1 | 2 | - | - | - | - | - |
| Terresstic | - | 1 | - | - | - | - | - | 1 | 1 | 1 | 1 | - | - |
| Tetraethyl Lead | 2 | 2 | - | - | - | - | 1 | 2 | - | - | - | - | - |
| Tetraethyl Lead Blend | X | 2 | - | - | - | - | 1 | - | - | - | - | - | - |
| Tetrahydrofuran (THF) | X | X | - | - | X | 2 | 1 | 1 | 2 | - | - | - | - |
| Tetralin | X | X | - | - | X | - | 1 | 2 | 1 | 1 | 1 | 1 | - |
| Thiopen | X | X | - | - | - | - | 1 | - | - | - | - | - | - |
| Titanium Tetrachloride | X | X | X | - | - | - | 1 | - | 1 | 2 | 2 | X | X |
| Toluene (Toluol) | X | X | X | X | X | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Toluene Diisocyanate (Under 150°F) | X | - | - | - | - | - | 1 | - | 1 | 1 | 1 | - | - |
| Transformer Oil (Askarel Types) | X | X | X | 1 | X | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Transformer Oil (Petroleum Type) | 2 | 1 | 2 | 1 | X | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Transmission Fluid, Type A | 2 | 1 | 2 | 1 | 2 | - | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Tributoxyethyl Phosphate | X | X | X | X | X | - | 1 | 2 | 1 | - | - | X | - |
| Tributyl Phosphate | X | X | X | 2 | X | - | 1 | - | 1 | - | - | X | - |
| Trichloroethylene | X | X | X | 2 | X | - | 1 | 2 | X | 2 | 1 | X | 1 |
| Trichloromonofluoroethane (Freon 17) | Use Freon Hose | | | | | | | 1 | 1 | 1 | X | - | |
| Trichlorotrifluoroethane (Freon 113) | Use Freon Hose | | | | | | 1 | 1 | 1 | X | - | | |
| Tricresyl Phosphate | X | X | X | 1 | X | - | 1 | 1 | 1 | 2 | 2 | X | - |
| Triethanolamine (TEA) | 2 | 2 | - | 1 | 2 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Tripolyphosphate (STPP) | X | 1 | - | - | - | - | 1 | - | - | 2 | 1 | X | - |
| Tung Oil | 2 | 2 | - | - | 2 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Turpentine | X | 2 | - | 2 | X | 1 | 1 | 1 | X | 1 | 1 | 1 | 2 |
| Type I Fuel (MIL-S-3136) ASTM Fuel A | 2 | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Type II Fuel (MIL-S-3136) | X | 2 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Type III Fuel (MIL-3136) ASTM Fuel B | X | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | - |

○Cover stock rating only; Rating for tube stock "X"  *Use Gates fuel hose or contact Denver Product Applications Department.

# Chemical Resistance Table

**Rating Scale:**
**1** Excellent
**2** Good resistance
**X** Not recommended
**–** Testing recommended

| Chemical Name | Gates Hose Polymers (Trade Names: A, C, $C_2$, J, Z) | | | | | | | | Couplings & Adapters | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Neoprene | Nitrile | Nitrile/PVC | CPE | Hypalon | Urethane (cover rating only) | PTFE | Nylon | Carbon Steel | Stainless Steel 304 | Stainless Steel 316 | Aluminum | Brass |
| **U** | | | | | | | | | | | | | |
| Ucon Hydrolube Types 150CP, 200CP | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Ucon Hydrolube Types 275CP, 300CP, 550CP | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Ucon M1 | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Union ATF Dexron | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | - | - |
| Union ATF Type F | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Union C-2 Fluid | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | - | - |
| Union C-POil | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Union Hydraulic Oil AW | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Union Hydraulic Tractor Fluid | - | 1 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Urea Solution | 1 | 2 | - | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | - |
| **V** | | | | | | | | | | | | | |
| Varnish | X | X | X | - | X | - | 1 | 1 | 2 | 1 | 1 | 1 | 2 |
| Vegetable Oils | 2 | 1 | 2 | 1 | - | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Vegetable Oil (Hot) | - | - | - | - | - | - | 1 | 1 | 2 | 2 | 2 | 1 | 2 |
| Versilube | 1 | 1 | - | - | - | - | 1 | - | 1 | 1 | 1 | 1 | - |
| Versilube F-50, F-44 | 2 | 2 | 2 | - | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Vinegar | 2 | X | X | 2 | X | - | 1 | 1 | X | 2 | 1 | X | X |
| Vinyl Acetate | X | X | X | 1 | X | - | 1 | - | 2 | 1 | 2 | 1 | 2 |
| Vinyl Chloride (Chloroethylene, Monomer) | X | X | X | X | X | - | 1 | - | 2 | 1 | 1 | 2 | X |
| Vitrea Oils | X | X | X | - | - | 2 | 1 | 1 | 1 | 1 | 1 | - | - |

**Rating Scale:**
**1** Excellent
**2** Good resistance
**X** Not recommended
**–** Testing recommended

| Chemical Name | Gates Hose Polymers (Trade Names: A, C, $C_2$, J, Z) | | | | | | | | Couplings & Adapters | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Neoprene | Nitrile | Nitrile/PVC | CPE | Hypalon | Urethane (cover rating only) | PTFE | Nylon | Carbon Steel | Stainless Steel 304 | Stainless Steel 316 | Aluminum | Brass |
| **W** | | | | | | | | | | | | | |
| Water | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 |
| Water, Acid Mine | 2 | X | - | - | - | - | 1 | 1 | X | 2 | 2 | X | X |
| Water, Brine | 2 | 2 | - | - | 1 | 1 | 1 | 1 | X | 2 | 2 | - | - |
| Water Deionized, (Demineralized) | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Water, Distilled | 2 | 1 | - | - | 1 | 1 | 1 | 1 | X | 1 | 1 | 1 | 1 |
| Water, Fresh | 1 | 1 | - | - | - | - | 1 | 1 | X | 1 | 1 | 1 | X |
| Water In Oil Emulsions | - | - | - | - | - | 2 | 1 | 1 | - | - | - | - | - |
| Water, Potable (FDA Tube Only) | Use FDA Hose Only | | | | | | | - | - | - | - | - | - |
| Water, Salt | 2 | 1 | - | - | - | - | 1 | 1 | X | 2 | 2 | X | X |
| White & Bagley No. 2190 Cutting Oil | 2 | 1 | - | - | - | - | 1 | - | - | - | - | -. | - |
| Wines | 2 | 1 | 1 | 1 | 1 | - | 1 | 1 | 2 | 2 | 2 | 1 | - |
| Wood Oil | 2 | 1 | - | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - |
| **X** | | | | | | | | | | | | | |
| Xylene | X | X | - | X | - | 2 | 1 | X | 2 | 2 | 2 | - | - |
| **Z** | | | | | | | | | | | | | |
| Zeric | - | 1 | - | - | - | 2 | 1 | 2 | - | - | - | - | - |
| Zinc Acetate | 2 | X | - | - | X | - | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Zinc Chloride Solutions | 1 | 1 | 1 | 1 | 1 | - | 1 | 1 | X | 2 | 1 | X | X |
| Zinc Chromate | - | - | - | 1 | 1 | - | 1 | - | - | 1 | 1 | - | - |
| Zinc Hydrate | - | - | - | - | - | 2 | 1 | - | - | - | - | - | - |
| Zinc Sulfate Solutions | 2 | 2 | 2 | 1 | 2 | - | 1 | 2 | X | 2 | 1 | X | X |

○Cover stock rating only; Rating for tube stock "X"  *Use Gates fuel hose or contact Denver Product Applications Department.


EQUIPMENT
HOSE/CPLG. SELECTION
GLOBALSPIRAL COUPLINGS
PCS COUPLINGS
GLOBALSPIRAL HIGH PRESSURE COUPLINGS
STAINLESS STEEL
PCM COUPLINGS
MEGACRIMP COUPLINGS
STAINLESS STEEL BRAID
POWER CRIMP COUPLINGS
FIELD ATTACHABLE G1 & G2 COUPLINGS
AIR BRAKE COPPER TUBING
SURELOK
HOSE CUTTERS & TOOLS
COMPRESSION AIR BRAKE
AIR BRAKE HOSE ASSEMBLIES
AIR BRAKE FOR RUBBER HOSE
FIELD ATTACHABLE C5 COUPLINGS
LOCK-ON HOSE
SINGLE BEAD
BARBED STEM
C14 COUPLINGS
LOW PRESSURE COUPLINGS
GLX COUPLINGS
POLARSEAL COUPLINGS
POLARSEAL II COUPLINGS
ASSEMBLY FABRICATION
POWER STEERING
PCTS THERMO-PLASTIC COUPLINGS
ADAPTERS
ACCESSORIES
QUICK DISCONNECT COUPLERS
BALL VALVES
KITS