



MARCH PUMPS

1819 PICKWICK AVE., GLENVIEW, IL 60026-1306, U.S.A

PHONE: (847) 729-5300 - FAX: (847) 729-7062

WWW.MARCHPUMP.COM

CHEMICAL RESISTANCE GUIDE

TO MAKE A GOOD PUMP SELECTION, CHEMICAL COMPATIBILITY MUST HAVE PRIME CONSIDERATION. MANY FACTORS SUCH AS CONCENTRATION, TEMPERATURE, TIME, IMPURITIES, AND THE DEGREE OF AGITATION INFLUENCE THE RATE AND DEGREE OF CORROSION. THIS LIST HAS BEEN ACCUMULATED FROM AVAILABLE PRINTED DATA AND EQUAL EXPERIENCES AND ALL POSSIBLE ATTEMPTS HAVE BEEN MADE TO MAKE IT ACCURATE AND PRACTICAL; HOWEVER, IT IS NOT TO BE CONSIDERED INFALLIBLE. SINCE IN MOST CASES IT IS DIFFICULT AND SOMETIMES IMPOSSIBLE TO SIMULATE WORKING CONDITIONS, MARCH RECOMMENDS THAT THE CUSTOMER TEST THE DESIRED PRODUCT UNDER WORKING CONDITIONS TO DETERMINE SUITABILITY BEFORE INSTALLING PUMPS IN QUANTITY FOR PRODUCTION PURPOSES. ALL TEST DATA LISTED IS AT A TEMPERATURE OF 68°F. MARCH DOES NOT CERTIFY NOR WARRANT DATA STATED, MERELY THIS IS OUR BEST JUDGMENT OF THE EFFECT OF CHEMICAL SOLUTION ON MARCH COMPONENTS.

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| March Chemical Chart | | | | **A-Recommended **B-Questionable **C-Not Recommended | | | | | | | | | | | | | | | |
|-------------------------|--|-----------------|-------------------------------|--|----------------------|--------|-------|---------|--------|---------------|---------------|-------|----------|----------|----------------|--------|---------|------------------|--------------|
| | | | | Plastics | | | | | Metals | | "O" Rings | | | Bushings | | | | | |
| Chemical Solution | FORMULA | % Concentration | Specific Gravity @ 100% Conc. | Ryton | Polypropylene | Delrin | Kynar | Cycolac | Nylon | Hastelloy "C" | St "Less 316" | Viton | Buna "N" | Teflon | Ceramic Magnet | Carbon | Ceramic | Mica Fill Teflon | Ryton-Teflon |
| | | | | Acetic Acid (Glacial) | CH ₃ COOH | 97 | | A | A | C | A | C | C | A | A | C | C | A | A |
| Acetic Acid | CH ₃ COOH | 50 | 1.05 | A | A | B | A | B | C | A | A | A | C | A | A | A | A | A | A |
| Acetic Anhydride | (CH ₃ CO) ₂ O | 100 | 1.08 | A | A | B | C | C | C | A | A | C | C | A | | A | A | | A |
| Acetone | CH ₃ COCH ₃ | 100 | 0.80 | A | A | B | C | C | A | A | A | C | C | A | A | A | A | A | A |
| Acetophenone | C ₆ H ₅ COCH ₃ | 100 | 1.03 | A | B | | C | C | B | A | A | C | C | A | | A | A | | A |
| Acetyl Chloride | CH ₃ COCl | 100 | 1.10 | A | B | | A | C | C | | A | A | C | A | | A | | | A |
| Aluminum Chloride | AlCl ₃ | | 2.44 | A | A | B | A | | C | A | B | A | A | A | B | A | A | A | A |
| Aluminum Fluoride | AlF ₃ | | 2.88 | | A | B | A | | C | A | B | A | A | A | B | A | A | | |
| Aluminum Sulfate (Alum) | Al ₂ (SO ₄) ₃ | | 2.70 | A | A | B | A | A | A | A | A | A | A | A | B | A | A | | A |
| Ammonia (Aqueous) | NH ₄ OH | 10 | | A | A | C | C | C | | A | A | B | B | A | A | A | A | A | A |
| Ammonium Carbonate | (NH ₄) ₂ CO ₃ | SAT. | | | A | C | A | A | A | A | B | A | C | A | A | A | A | A | |
| Ammonium Chloride | NH ₄ Cl | SAT. | 1.50 | A | A | B | A | | A | A | B | A | A | A | A | A | A | A | A |
| Ammonium Fluoride | NH ₄ F | 20 | 1.30 | C | A | B | A | C | | A | C | C | C | A | | A | A | | C |
| Ammonium Hydroxide | NH ₄ OH | 10 | | A | A | C | A | A | A | A | A | B | C | A | A | A | A | | A |
| Ammonium Nitrate | NH ₄ NO ₃ | SAT. | 1.70 | A | A | B | A | | C | A | A | C | A | A | | A | A | | A |
| Ammonium Persulfate | (NH ₄) ₂ S ₂ O ₈ | SAT. | 2.00 | | A | C | C | | C | A | A | A | A | A | A | A | A | | |
| Ammonium Sulfate | (NH ₄) ₂ SO ₄ | SAT. | 1.80 | A | A | A | A | | C | A | B | C | A | A | A | A | A | | A |
| Ammonium Sulfide | (NH ₄) ₂ S | SAT. | | | A | | A | A | | A | A | C | A | A | | A | A | | |
| Ammonium Thiocyanate | NH ₄ SCN | SAT. | 1.30 | | A | A | A | A | | A | A | A | A | A | | A | A | | |
| Amyl Acetate | CH ₃ CO ₂ C ₅ H ₁₁ | 100 | 0.86 | A | C | A | A | C | B | A | A | C | C | A | | A | A | A | A |
| Amyl Alcohol | C ₅ H ₁₁ OH | 100 | 0.80 | A | A | A | A | A | A | A | A | C | A | A | | A | A | A | A |
| Amyl Chloride | CH ₃ (CH ₂) ₃ CH ₂ Cl | 100 | 0.80 | A | C | A | A | C | C | A | A | B | C | A | | A | A | | |
| Aniline | C ₆ H ₅ NH ₂ | 100 | 1.02 | A | A | B | A | C | C | A | A | C | C | A | | A | A | A | A |
| Aqua Regia | | | | C | C | C | C | C | C | C | C | B | C | A | C | C | B | | C |

March Chemical Chart

**A-Recommended **B-Questionable **C-Not Recommended

| Chemical Solution | FORMULA | % Concentration | Specific Gravity @ 100% Conc. | Plastics | | Metals | | "O" Rings | | | Bushings | | | | | | | | |
|--------------------------|--|-----------------|-------------------------------|----------|---------------|--------|-------|-----------|-------|---------------|---------------|-------|----------|--------|----------------|--------|---------|------------------|--------------|
| | | | | Ryton | Polypropylene | Delrin | Kynar | Cycolac | Nylon | Hastelloy "C" | St "Less 316" | Viton | Buna "N" | Teflon | Ceramic Magnet | Carbon | Ceramic | Mica Fill Teflon | Ryton-Teflon |
| | | | | | | | | | | | | | | | | | | | |
| Barium Carbonate | BaCO ₃ | SAT. | 4.30 | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | |
| Barium Chloride | BaCl ₂ | SAT. | 3.10 | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | |
| Barium Hydroxide | Ba(OH) ₂ | | 2.20 | A | A | B | A | A | A | A | A | A | A | A | A | A | A | A | |
| Barium Sulfate | BaSO ₄ | SAT. | 4.40 | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | |
| Barium Sulfide | BaS | SAT. | 4.30 | A | A | A | A | A | A | B | B | A | A | A | A | A | A | A | |
| Beer | | | | | A | A | A | A | B | A | A | A | A | A | A | A | A | | |
| Benzaldehyde | C ₆ H ₅ CHO | 100 | 1.05 | C | A | A | C | C | C | A | A | C | C | A | | A | A | A | C |
| Benzene | C ₆ H ₆ | 100 | 0.90 | B | C | A | A | C | A | A | A | C | A | A | A | A | A | A | B |
| Benzene Sulfonic Acid | C ₆ H ₅ SO ₃ H | 100 | | A | B | | A | | C | A | A | A | C | A | | A | A | A | A |
| Benzoic Acid | C ₆ H ₅ COOH | | 1.30 | A | A | B | A | A | C | A | A | A | C | A | | A | A | A | |
| Benzyl Alcohol | C ₆ H ₅ CH ₂ OH | 100 | 1.05 | A | A | A | A | C | | | A | A | C | | | A | A | A | A |
| Benzyl Chloride | C ₆ H ₅ CH ₂ Cl | | 1.10 | A | A | | A | C | | | A | B | C | | | | | | |
| Bismuth Carbonate | (BiO) ₂ CO ₃ | SAT. | 6.80 | | A | A | A | A | | | | C | A | | | A | A | | |
| Boric Acid | H ₃ BO ₃ | | 1.40 | | A | A | A | | B | A | A | A | A | A | | A | A | A | |
| Brine | | SAT. | | A | A | A | A | A | | A | | A | A | A | A | A | A | | A |
| Bromine Liquid | Br | 100 | 3.10 | C | C | C | B | C | C | A | C | B | C | A | A | A | A | | C |
| Butane | CH ₃ CH ₂ CH ₂ CH ₃ | | 0.80 | A | A | A | A | B | A | A | A | A | | A | | A | | | A |
| Butyl Acetate | CH ₃ COO(CH ₂) ₃ CH ₃ | | 0.90 | A | C | A | C | C | | A | A | C | C | A | | A | A | A | A |
| Butyl Alcohol | CH ₃ (CH ₂) ₂ CH ₂ OH | | 0.90 | A | A | A | A | C | A | A | A | B | A | A | | A | A | | A |
| Butyl Ether | C ₄ H ₉ OC ₄ H ₉ | | | A | C | | B | C | | | | C | C | A | | | | | A |
| Calcium Carbonate | CaCO ₃ | SAT. | 2.70 | A | A | A | A | | A | A | A | A | A | A | | A | A | | A |
| Calcium Chlorate | Ca(ClO ₃) ₂ | SAT. | 2.70 | | A | C | A | A | A | A | A | A | A | A | | A | A | | |
| Calcium Chloride | CaCl ₂ | 50 | 2.10 | A | A | A | A | B | B | A | A | A | A | A | | A | A | A | A |
| Calcium Hydroxide (Lime) | Ca(OH) ₂ | | 2.30 | A | A | A | A | A | A | A | A | A | A | A | A | A | A | | A |
| Calcium Hypochlorite | Ca(OCL) ₂ | 20 | 2.30 | A | A | B | A | A | B | A | C | A | B | A | | A | A | A | A |
| Calcium Nitrate | Ca(NO ₃) ₂ | | 1.80 | A | A | A | A | A | C | A | A | A | A | A | | A | A | | A |
| Calcium Phosphate | CaHPO ₄ | 50 | 2.30 | | A | | A | | | | | | | | | A | A | | |
| Calcium Sulfate | CaSO ₄ | | 2.90 | A | A | A | A | B | B | A | A | A | B | A | A | A | A | | A |
| Carbon Dioxide (Wet) | CO ₂ | | | | A | A | A | A | A | A | A | B | A | A | | A | A | | |
| Carbon Disulfide | CS ₂ | 100 | 1.30 | A | B | A | B | C | A | A | A | A | C | A | | A | A | A | A |
| Carbon Tetrachloride | CCl ₄ | 100 | 1.60 | A | C | A | A | C | A | A | A | A | B | A | A | A | A | A | A |
| Carbonic Acid | H ₂ CO ₃ | | | | A | A | A | A | A | A | A | A | B | A | | A | A | | |
| Castor Oil | | | 0.95 | A | A | A | A | A | A | | A | A | A | A | A | A | A | | A |
| Cetyl Alcohol | C ₁₆ H ₃₃ OH | 100 | 0.81 | A | A | A | | | A | | A | | | A | A | A | A | | A |
| Chlorine (Liquid) | Cl ₂ | | | C | C | C | A | C | C | B | C | A | B | A | C | C | A | A | C |
| Chlorobenzene | C ₆ H ₅ Cl | 100 | 1.10 | A | C | A | A | C | A | A | A | A | C | A | A | A | A | A | A |
| Chloroform | CHCl ₃ | 100 | 1.50 | B | C | A | A | C | C | A | A | A | C | A | A | A | A | A | B |
| Chlorosulfonic Acid | ClSO ₂ HO | 100 | 1.80 | C | C | C | C | C | C | A | C | C | C | A | | A | A | A | C |
| Chrome Alum | | | 1.80 | | A | B | A | | | | | A | A | A | | A | A | A | |
| Chromic Acid | CrO ₃ | 80 | 2.70 | C | C | C | C | B | C | B | C | A | C | A | | C | A | | C |
| Chromic Acid | CrO ₃ | 10 | 2.70 | A | A | C | A | B | C | A | B | A | C | A | | A | A | A | A |
| Cider | | | | | A | A | B | | A | | A | A | A | | A | A | A | | |
| Citric Acid | C ₆ H ₈ O ₇ H ₂ O | | 1.50 | A | A | B | A | A | A | A | A | A | A | A | | A | A | A | A |
| Copper Chloride | CuCl ₂ | SAT. | 3.40 | A | B | B | A | A | C | A | A | A | A | A | | A | A | | A |
| Copper Cyanide | Cu(CN) ₂ | SAT. | | A | A | B | A | A | A | A | A | A | A | A | A | A | A | | |
| Copper Fluoride | CuF ₂ | SAT. | 2.90 | | A | B | A | | | | | A | A | A | | A | A | | |
| Copper Nitrate | Cu(NO ₃) ₂ | SAT. | 2.30 | | A | A | A | A | C | A | A | A | A | A | A | A | A | | |
| Copper Sulfate | CuSO ₄ | SAT. | 2.30 | A | A | A | A | | C | A | A | A | A | A | A | A | A | | |

| March Chemical Chart | | | | **A-Recommended **B-Questionable **C-Not Recommended | | | | | | | | | | | | | | | |
|------------------------------|--|-----------------|-------------------------------|--|---------------|--------|-------|--------|--------|---------------|---------------|-------|----------|----------|----------------|--------|---------|------------------|--------------|
| | | | | Plastics | | | | | Metals | | "O" Rings | | | Bushings | | | | | |
| Chemical Solution | FORMULA | % Concentration | Specific Gravity @ 100% Conc. | Ryton | Polypropylene | Delrin | Kynar | Cyclac | Nylon | Hastelloy "C" | St "Less 316" | Viton | Buna "N" | Teflon | Ceramic Magnet | Carbon | Ceramic | Mica Fill Teflon | Ryton-Teflon |
| | | | | Cottonseed Oil | | | 0.90 | A | A | A | A | A | A | | A | A | A | A | |
| Cresol | CH ₃ C ₆ H ₄ OH | 100 | 1.05 | A | A | B | A | C | C | A | A | A | C | A | | A | | | A |
| Cuprous Chloride | CuCl | SAT. | 4.14 | A | A | | A | | | A | | | | | | A | A | A | A |
| Cyclohexane | C ₆ H ₁₂ | 100 | 0.80 | A | C | | A | A | A | A | A | A | B | A | | A | | A | A |
| Cyclohexanol | C ₁₀ H ₁₁ OH | 100 | 0.94 | A | A | | A | A | A | | | A | B | A | | A | A | A | A |
| Cyclohexanone | C ₆ H ₁₀ O | 100 | 0.95 | A | B | A | C | C | A | A | A | C | C | A | | A | A | A | A |
| Detergents | | 2 | | A | A | A | A | A | A | A | A | A | A | A | | A | A | A | A |
| Developers (Photographic) | | | | | A | | A | A | | A | A | A | A | A | A | A | A | | |
| Dibutyl Phthalate | C ₆ H ₄ (COOC ₄ H ₉) ₂ | 100 | 1.05 | A | A | | C | C | | A | A | C | C | A | | A | A | A | A |
| Dichloroethylene | ClHC | 100 | 1.25 | C | A | | A | C | | A | A | A | C | A | | A | A | A | C |
| Diesel Fuel | | 100 | | A | C | | A | | A | A | A | A | A | A | | A | | | A |
| Diethanolamine | (HOCH ₂ CH ₂) ₂ NH | 100 | 1.10 | A | A | | C | A | | A | A | | | A | | A | A | | A |
| Dimethylformamide | HCON(CH ₃) ₂ | 100 | 0.95 | A | | | C | | | A | C | C | A | | | | | | A |
| Dimethylsulfoxide | (CH ₃) ₂ SO | 100 | 1.01 | A | | | C | | A | | | | | A | | | | | A |
| Dowtherm | | 100 | | A | A | | | | A | A | A | A | C | A | | A | | | A |
| Ethanolamine | HOCH ₂ CH ₂ NH ₂ | 100 | 1.02 | A | A | C | C | | A | A | A | A | A | A | | A | A | | A |
| Ether | | | | | A | A | A | C | C | B | A | C | C | A | | A | | | |
| Ethyl Acetate | CH ₃ COOC ₂ H ₅ | 100 | | A | B | A | C | C | A | A | A | C | C | A | | A | A | A | A |
| Ethyl Alcohol | C ₂ H ₅ OH | 96 | 0.80 | A | A | A | A | B | A | A | A | B | A | A | | A | A | | A |
| Ethyl Chloride | C ₂ H ₅ Cl | 100 | 0.92 | A | C | A | A | C | A | A | A | A | A | A | A | A | A | A | A |
| Ethyl Ether | (C ₂ H ₅) ₂ O | 100 | 0.71 | | B | A | B | C | | A | A | C | C | A | | A | A | | |
| Ethylene Dichloride | ClCH ₂ CH ₂ Cl | 100 | 1.25 | B | B | A | A | C | A | A | A | A | C | A | | A | A | A | B |
| Ethylene Glycol | CH ₂ OHCH ₂ OH | | 1.10 | A | A | A | A | B | A | | A | A | A | A | A | A | A | A | A |
| Fatty Acids | | 100 | | A | A | B | A | A | B | A | A | A | B | A | | A | A | | A |
| Ferric Chloride | FeCl ₃ | SAT. | 2.90 | A | A | B | A | A | B | A | C | A | A | A | | A | A | A | A |
| Ferric Nitrate | Fe(NO ₃) ₃ | SAT. | 1.70 | A | A | B | A | | C | A | A | A | A | A | | A | A | | A |
| Ferric Sulfate | Fe ₂ (SO ₄) ₃ | SAT. | 3.10 | A | A | B | A | C | B | A | A | A | B | A | A | A | A | | A |
| Ferrous Chloride | FeCl ₂ | SAT. | 3.20 | A | A | B | A | A | C | A | C | A | B | A | | A | A | A | A |
| Ferrous Sulfate | FeSO ₄ | SAT. | 1.90 | A | A | B | A | A | C | A | A | A | B | A | A | A | A | | A |
| Fluoboric Acid | HF ₄ | | 1.80 | C | B | C | A | | C | A | C | A | B | A | C | C | A | C | C |
| Fluosilicic Acid | H ₂ SIF ₆ | | | B | A | B | A | | C | A | B | A | A | A | C | B | A | C | B |
| Formaldehyde | HCHO | 40 | 1.01 | A | A | A | A | B | C | A | | C | B | A | | A | A | A | A |
| Formic Acid | HCOOH | 100 | 1.20 | B | A | C | A | C | C | A | A | B | C | A | | A | A | A | B |
| Freon 11 | | | | A | C | | | C | A | | A | B | A | A | A | A | A | | A |
| Fructose (Fruit Sugar) | C ₆ H ₁₂ O ₆ | | | | A | A | A | A | | | | | | | | A | A | | |
| Fruit Juices | | | | A | A | A | A | | A | | A | A | A | | A | A | A | A | A |
| Furfural | C ₄ H ₃ OCHO | 100 | 1.20 | A | C | | B | C | A | A | A | C | C | A | | A | A | A | A |
| Gelatin | | | | A | A | | A | A | B | A | A | A | A | A | | A | A | | A |
| Glucose | C ₆ H ₁₂ O ₆ | 20 | 1.54 | A | A | A | A | A | A | | A | A | A | A | | A | A | | A |
| Glycerin (Glycerol) | C ₃ H ₅ (OH) ₃ | 100 | 1.30 | A | A | A | A | B | A | A | A | A | A | A | A | A | A | A | A |
| Glycolic Acid | CH ₂ OHCOOH | | 1.30 | A | | | B | | | A | A | A | A | A | | A | | | A |
| Hexane | CH ₃ (CH ₂) ₄ CH ₃ | 100 | 0.70 | A | B | A | A | C | A | A | A | A | B | A | | A | A | A | A |
| Hydrobromic Acid | HBr | 50 | 48% 1.50 | A | A | C | A | | C | A | C | A | C | A | | A | A | A | A |
| Hydrochloric Acid (Muriatic) | HCl | 30 | 38% 1.20 | C | A | C | A | A | C | A | C | A | C | A | C | A | A | A | C |
| Hydrofluoric Acid | HF | 40 | | C | B | C | A | C | C | A | C | A | C | A | C | A | B | C | C |

March Chemical Chart

**A-Recommended **B-Questionable **C-Not Recommended

| Chemical Solution | | % Concentration | Specific Gravity @ 100% Conc. | Plastics | | | | | | | | | | Metals | | "O" Rings | | | Bushings | | | |
|---------------------------|---|-----------------|-------------------------------|----------|---------------|--------|-------|--------|-------|---------------|---------------|-------|----------|--------|----------------|-----------|---------|------------------|--------------|---------|--|--|
| | | | | Ryton | Polypropylene | Delrin | Kynar | Cyclac | Nylon | Hastelloy "C" | St "Less 316" | Viton | Buna "N" | Teflon | Ceramic Magnet | Carbon | Ceramic | Mica Fill Teflon | Ryton-Teflon | | | |
| | | | | | | | | | | | | | | | | | | | | FORMULA | | |
| Hydrogen Peroxide | H ₂ O ₂ | 30 | 1.50 | C | A | C | A | B | C | A | A | A | A | A | A | A | A | A | A | C | | |
| Hydrogen Sulfide | H ₂ S | | 1.20 | A | A | B | A | | C | A | A | C | B | A | A | A | A | | A | | | |
| Hydroquinone | C ₆ H ₄ (OH) ₂ | | 1.30 | | A | A | A | A | | A | A | B | B | A | | A | A | A | | | | |
| Inks | | | | | A | A | | | A | | A | A | | A | A | A | | | | | | |
| Iodine Tincture | | | | | A | C | | C | | C | A | B | | | A | A | | | | | | |
| Isooctane | | 100 | 0.70 | A | C | | A | | | | A | A | | | | | A | A | | | | |
| Isopropyl Alcohol | (CH ₃) ₂ CHOH | | 0.80 | A | A | | A | | C | A | A | A | B | A | | A | A | A | A | | | |
| Kerosene | | | 0.81 | B | C | A | A | A | A | B | A | A | A | A | B | A | A | | B | | | |
| Ketones | | | | A | A | | | C | A | A | A | C | C | A | | A | A | | A | | | |
| Lactic Acid | CH ₃ CHOHCOOH | 20 | 1.20 | A | A | A | B | | C | A | A | A | B | A | | A | A | | A | | | |
| Lanolin | | 100 | | A | A | | A | | A | A | | A | | | A | A | | | A | | | |
| Lead Acetate | Pb(C ₂ H ₃ O ₂) ₂ ·3H ₂ O | SAT. | 2.50 | | A | A | A | | A | A | A | C | B | A | | A | A | A | | | | |
| Linseed Oil | | 100 | 0.94 | A | A | A | A | B | A | A | A | A | A | A | A | A | A | A | A | | | |
| Lubricating Oil | | 100 | | A | A | A | A | B | A | | A | A | A | A | A | A | A | A | A | | | |
| Magnesium Carbonate | MgCO ₃ | SAT. | 3.00 | A | A | A | A | A | | A | A | A | A | A | A | A | A | | A | | | |
| Magnesium Chloride | MgCl ₂ | SAT. | 2.30 | A | A | A | A | A | B | A | B | A | A | A | | A | A | A | A | | | |
| Magnesium Hydroxide | Mg(OH) ₂ | SAT. | 2.40 | A | A | A | A | A | A | A | A | B | B | A | | A | A | A | A | | | |
| Magnesium Nitrate | Mg(NO ₃) ₂ | SAT. | 1.50 | A | A | A | A | A | A | A | A | A | A | A | A | A | A | | A | | | |
| Magnesium Sulfate | MgSO ₄ | SAT. | 2.60 | A | A | A | A | A | A | A | A | A | A | A | | A | A | | A | | | |
| Mercuric Chloride | HgCl ₂ | 40 | 5.40 | | A | A | A | C | B | A | C | A | A | A | | A | A | A | | | | |
| Mercuric Cyanide | Hg(CN) ₂ | SAT. | 4.00 | | A | A | A | C | | A | | A | A | | A | A | | | | | | |
| Mercurous Nitrate | HgNO ₃ | SAT. | 4.80 | | A | A | | C | | A | C | | A | A | A | A | | | | | | |
| Methyl Alcohol (Methanol) | CH ₃ OH | 100 | 0.80 | A | A | A | A | C | A | A | A | C | A | A | A | A | A | A | A | | | |
| Methylene Chloride | CH ₂ Cl ₂ | 100 | 1.30 | A | C | A | C | C | A | A | A | C | B | A | | A | A | A | A | | | |
| Methyl Ethyl Ketone | CH ₃ COCH ₂ CH ₃ | 100 | 0.82 | A | A | B | C | C | A | A | A | C | C | A | A | A | A | A | A | | | |
| Methyl Methacrylate | CH ₂ C(CH ₃)COOCH ₃ | | 0.95 | | A | | B | | | | | C | C | A | | A | A | | | | | |
| Milk | | | | | A | A | A | A | A | A | A | A | A | A | A | A | A | A | | | | |
| Mineral Oil | | 100 | | A | A | A | A | | A | | A | A | A | A | A | A | A | A | A | | | |
| Molasses | | | | | A | A | A | | A | | A | A | A | A | A | A | A | | | | | |
| Motor Oil | | 100 | | A | A | A | A | A | A | | A | A | A | A | A | A | A | | A | | | |
| Naphthalene | C ₁₀ H ₈ | 100 | 1.15 | A | A | | A | C | | A | A | B | C | A | | A | A | A | A | | | |
| Nickel Chloride | NiCl ₂ | SAT. | 3.50 | | A | A | A | A | B | A | B | A | A | A | | A | A | | | | | |
| Nickel Nitrate | Ni(NO ₃) ₂ ·6H ₂ O | SAT. | 2.10 | | A | B | A | A | | A | A | A | A | A | A | A | A | | | | | |
| Nickel Sulfate | NiSO ₄ | SAT. | 3.70 | | A | B | A | A | A | A | A | A | A | A | | A | A | | | | | |
| Nitric Acid | HNO ₃ | 25 | 1.50 | C | A | C | A | C | C | A | A | B | C | A | C | B | A | A | C | | | |
| Nitric Acid (Fuming) | HNO ₃ | | | C | C | C | C | C | C | B | C | C | C | A | C | C | A | | C | | | |
| Nitrobenzene | C ₆ H ₅ NO ₂ | 100 | 1.20 | A | A | A | B | C | C | A | B | A | C | | | A | A | | A | | | |
| Oleic Acid | | | 0.90 | | A | B | A | A | | A | A | B | B | A | | A | A | A | | | | |
| Olive Oil | | 100 | 0.90 | A | A | A | A | | A | | A | A | A | | | A | A | | A | | | |
| Oxalic Acid (Aqueous) | (COOH) ₂ | 50 | 1.70 | A | A | B | A | | | A | B | A | B | A | | A | A | A | | | | |
| Paraffin | | 100 | | A | A | | A | A | A | A | A | A | A | A | | A | A | A | A | | | |
| Perchloroethylene | (CCl ₂) ₂ | | 1.60 | B | C | A | A | C | | A | A | A | C | A | | A | A | A | B | | | |
| Petroleum Ether | | 100 | 0.70 | A | C | | | | | A | A | | | A | A | A | A | A | A | | | |

March Chemical Chart

**A-Recommended **B-Questionable **C-Not Recommended

| Chemical Solution | | % Concentration | Specific Gravity @ 100% Conc. | Plastics | | | | | | Metals | | "O" Rings | | | Bushings | | | | | |
|------------------------------|--|-----------------|-------------------------------|----------|---------------|--------|-------|--------|-------|---------------|---------------|-----------|----------|--------|----------------|--------|---------|------------------|--------------|--|
| | | | | Ryton | Polypropylene | Delrin | Kynar | Cyclac | Nylon | Hastelloy "C" | St "Less 316" | Viton | Buna "N" | Teflon | Ceramic Magnet | Carbon | Ceramic | Mica Fill Teflon | Ryton-Teflon | |
| FORMULA | | | | | | | | | | | | | | | | | | | | |
| Phenol | C ₆ H ₅ OH | 100 | 1.10 | A | A | | A | C | C | A | A | A | C | A | | A | A | A | A | |
| Phosphoric Acid | H ₃ PO ₄ | 95 | 1.80 | C | A | C | A | B | C | A | B | A | B | A | C | A | A | A | C | |
| Phosphorus Trichloride | PCl ₃ | 100 | 1.60 | B | C | C | A | C | C | A | A | A | C | A | | A | | | B | |
| Plating Solutions | | | | | | | | | | | | | | | | | | | | |
| Acid Copper | | | | A | A | | A | C | | | | A | A | A | | A | A | | A | |
| Brass | | | | | A | | A | C | | | | A | A | A | | A | A | | | |
| Cadmium | | | | A | A | | A | C | | | | A | A | A | | A | A | | A | |
| Chromium | | | | A | A | | A | | | | | A | A | A | | A | A | | A | |
| Copper | | | | A | A | | A | C | | | | A | A | A | | A | A | | A | |
| Gold | | | | A | A | | A | C | | | | A | A | A | | | A | | A | |
| Indium | | | | A | A | | | | | | | A | A | A | | A | A | | A | |
| Lead | | | | A | A | | A | C | C | | | A | A | A | | | A | | A | |
| Nickel | | | | A | A | | A | C | | | | A | A | A | | A | A | | A | |
| Rhodium | | | | A | A | | A | C | | | | A | A | A | | A | A | | A | |
| Silver | | | | A | A | | A | C | | | | A | A | A | | A | A | | A | |
| Tin | | | | A | A | | A | C | | | | A | A | A | | A | A | | A | |
| Zinc | | | | A | A | | A | C | | | | A | A | A | | A | A | | A | |
| Potassium Acetate | KC ₂ H ₃ O ₂ | 40 | 1.60 | A | A | | A | | | | | C | B | A | | A | A | A | A | |
| Potassium Bicarbonate | KHCO ₃ | SAT. | 2.20 | A | A | B | A | B | A | B | B | A | A | A | | A | A | | A | |
| Potassium Borate | KBO ₂ | 1 | | | A | B | A | C | | | | A | A | A | | A | A | | | |
| Potassium Bromate | KBrO ₃ | 10 | 3.30 | | A | A | A | | | | | A | A | A | | A | A | | | |
| Potassium Bromide | KBr | SAT. | 2.70 | A | A | A | A | | C | A | A | A | A | A | | A | A | A | A | |
| Potassium Carbonate | K ₂ CO ₃ | SAT. | 2.40 | A | A | B | A | | A | A | A | A | A | A | A | A | A | A | A | |
| Potassium Chlorate | KClO ₃ | SAT. | 2.30 | | A | | A | | C | A | A | A | A | A | | A | A | | | |
| Potassium Chloride | KCl | SAT. | 2.00 | A | A | A | A | B | C | B | A | A | A | A | | A | A | A | A | |
| Potassium Chromate | K ₂ CrO ₄ | 40 | 2.70 | | A | | A | | | B | B | A | A | A | | A | A | | | |
| Potassium Cyanide | KCN | SAT. | 1.50 | | A | B | A | | A | B | A | A | A | A | | A | A | | | |
| Potassium Dichromate | K ₂ Cr ₂ O ₇ | 40 | 2.70 | A | A | B | A | | C | B | A | A | A | A | A | A | A | A | A | |
| Potassium Ferrocyanide | K ₄ Fe(CN) ₆ | | 1.90 | | A | B | A | | A | A | A | A | C | A | A | A | A | A | | |
| Potassium Fluoride | KF | | 2.50 | | A | A | A | A | | | | A | A | A | A | | A | A | | |
| Potassium Hydroxide | KOH | 50 | 2.00 | A | A | C | C | B | A | A | A | C | B | A | A | A | A | B | A | |
| Potassium Nitrate | KNO ₃ | SAT. | 2.10 | A | A | B | A | | C | A | A | A | A | A | | A | A | A | A | |
| Potassium Perborate | | SAT. | | | A | C | A | A | | | | | | A | | A | A | | | |
| Potassium Perchlorate | KClO ₄ | 10 | 2.50 | | A | C | A | | | A | A | | C | A | | A | A | | | |
| Potassium Permanganate | KMnO ₄ | 20 | 2.70 | A | A | C | A | B | C | A | A | A | A | A | | A | A | A | A | |
| Potassium Sulfate | K ₂ SO ₄ | | 2.70 | A | A | A | A | | C | A | A | A | A | A | A | A | A | | A | |
| Potassium Sulfide | K ₂ S | | 1.80 | A | A | | A | A | | | | A | B | | A | | A | A | A | |
| Propyl Alcohol | CH ₃ CH ₂ CH ₂ OH | 100 | 0.80 | A | A | A | A | C | C | A | A | A | A | A | | A | A | | A | |
| Propylene Glycol | CH ₃ CHOHCH ₂ OH | | 1.00 | A | A | | A | A | | | | A | A | C | A | A | A | | A | |
| Pyridine | N(CH) ₄ CH | 100 | 1.00 | B | A | | C | | C | A | B | C | C | A | | A | A | A | B | |
| Silicone Oil | | | | | | | | | | | | | | | | | | | | |
| Soap Solution (Concentrated) | | | | | | | | | | | | | | | | | | | | |
| Sodium Acetate | NaC ₂ H ₃ O ₂ | | 1.50 | A | A | A | A | A | A | A | A | C | B | A | | A | A | A | A | |
| Sodium Bicarbonate | NaHCO ₃ | SAT. | 2.20 | A | A | B | A | A | A | A | A | A | A | A | A | A | A | A | A | |
| Sodium Bisulfate | NaHSO ₄ | SAT. | 2.40 | A | A | B | A | B | C | A | A | B | A | A | | A | A | | A | |
| Sodium Bisulfite | NaHSO ₃ | SAT. | 1.50 | A | A | B | A | A | C | A | A | A | A | A | | A | A | | A | |
| Sodium Borate (Borax) | Na ₂ B ₄ O ₇ | | 1.70 | A | A | A | A | | A | A | A | A | A | A | A | A | A | | A | |
| Sodium Bromide | | | | | A | B | A | A | | A | | | | A | | A | A | A | | |
| Sodium Carbonate | | SAT. | | A | A | B | A | B | A | B | A | A | A | A | A | A | A | A | A | |

March Chemical Chart

**A-Recommended **B-Questionable **C-Not Recommended

| Chemical Solution | | FORMULA | % Concentration | Specific Gravity @ 100% Conc. | Plastics | | Metals | | "O" Rings | | | Bushings | | | | | | | |
|-------------------------------|---|---------|-----------------|-------------------------------|----------|---------------|--------|-------|-----------|-------|---------------|---------------|-------|----------|--------|----------------|--------|---------|------------------|
| | | | | | Ryton | Polypropylene | Delrin | Kynar | Cyclac | Nylon | Hastelloy "C" | St "Less 316" | Viton | Buna "N" | Teflon | Ceramic Magnet | Carbon | Ceramic | Mica Fill Teflon |
| Sodium Chlorate | NaClO ₃ | SAT. | 2.50 | A | A | B | A | C | B | A | A | A | A | A | A | A | A | A | |
| Sodium Chloride | NaCl | SAT. | 2.20 | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | |
| Sodium Chlorite | NaClO ₂ | 20 | | | C | | A | | | A | A | C | C | A | | A | A | | |
| Sodium Cyanide | NaCN | SAT. | | | A | A | B | A | A | B | A | A | A | A | A | A | A | A | |
| Sodium Dichromate | Na ₂ Cr ₂ O ₇ | SAT. | 2.50 | A | A | B | A | A | B | A | | | C | A | | A | A | A | |
| Sodium Ferricyanide | NaFe(CN) ₆ | SAT. | | | A | B | A | A | | | A | A | A | | | A | A | | |
| Sodium Ferrocyanide | Na ₄ Fe(CN) ₆ | SAT. | 1.50 | | A | B | A | A | | | A | | A | | | A | A | | |
| Sodium Fluoride | NaF | SAT. | 2.60 | | A | A | A | A | A | A | C | C | C | A | | A | A | | |
| Sodium Hydroxide Caustic Soda | NaOH | 50 | 2.10 | A | A | C | B | B | B | A | B | B | C | A | C | A | A | B | A |
| Sodium Hypochlorite | NaOCl | 10 | | | C | C | C | A | | C | C | C | A | B | A | A | C | A | C |
| Sodium Nitrate | NaNO ₃ | | 2.30 | A | A | B | A | A | A | A | A | B | B | A | A | A | A | A | A |
| Sodium Nitrite | NaNO ₂ | | 2.20 | A | A | B | A | A | | A | A | A | A | A | | A | A | | A |
| Sodium Silicate | Na ₂ SiO ₃ | | | | A | A | B | A | A | A | B | A | A | A | A | | A | A | A |
| Sodium Sulfate | Na ₂ SO ₄ | SAT. | 2.70 | A | A | A | A | A | A | A | A | A | A | A | | A | A | | A |
| Sodium Sulfide | Na ₂ S | 25 | 1.40 | A | A | A | A | A | A | B | A | A | A | A | | A | A | | A |
| Sodium Sulfite | Na ₂ SO ₃ | SAT. | 2.60 | A | A | A | A | A | C | A | A | A | A | A | | A | A | | A |
| Sodium Thiosulfate | Na ₂ S ₂ O ₃ | 10 | 1.70 | A | A | B | A | A | | | A | A | A | A | | A | | | A |
| Stannic Chloride | SnCl ₄ | SAT. | 2.30 | A | A | B | A | A | A | B | C | A | A | A | | A | A | A | A |
| Stannous Chloride | SnCl ₂ | SAT. | 4.00 | A | A | B | A | | C | A | A | A | C | A | | A | A | | A |
| Starch | | | | | A | A | | A | | A | | A | A | | A | A | A | | A |
| Sulfamic Acid | HSO ₃ NH ₂ | | 2.10 | | A | C | | | | | | | C | A | | A | A | | |
| Sulfur | S | | 2.10 | A | A | C | A | C | | A | A | C | C | A | | A | A | | A |
| Sulfuric Acid | H ₂ SO ₄ | 50 | 50% 1.39 | B | A | C | A | C | C | A | C | A | C | A | C | A | A | A | A |
| Sulfuric Acid | H ₂ SO ₄ | 93 | 1.80 | C | A | C | A | C | C | A | A | A | C | A | C | A | A | | C |
| Tannic Acid | C ₇₆ H ₅₂ O ₄₆ | 10 | | | A | B | A | A | C | B | A | A | B | A | A | A | A | | |
| Tartaric Acid | | | 1.80 | A | A | B | A | A | C | A | A | A | A | A | B | A | A | A | A |
| Tetrahydrofuran | CH ₂ CH ₂ CH ₂ CH ₂ O | 100 | 0.90 | B | C | | C | C | | | A | B | C | A | | A | A | A | B |
| Tetralin | | 100 | | | A | C | | | | | | A | C | A | | A | A | A | A |
| Toluene | CH ₃ C ₆ H ₅ | 100 | 0.90 | A | C | A | A | C | A | A | A | A | C | A | A | A | A | A | A |
| Transformer Oil | | 100 | | | A | A | A | C | | A | | A | A | A | A | A | A | A | A |
| Trichloroacetic Acid | CCl ₃ COOH | 100 | 1.60 | A | A | | A | | | A | C | C | B | | | A | A | | A |
| Trichloroethylene | C ₂ H ₃ Cl ₃ | 100 | 1.50 | A | C | A | A | C | C | A | A | A | C | A | A | A | A | A | A |
| Triethanolamine | (HOCH ₂ CH ₂) ₃ N | 100 | 1.10 | A | A | C | A | A | | A | | A | C | A | | A | A | A | A |
| Turpentine | C ₁₀ H ₁₆ | 100 | 0.90 | A | C | A | A | C | A | A | A | A | B | A | | A | A | A | A |
| Urea | CO(NH ₂) ₂ | | 1.30 | | A | A | A | A | | A | | A | A | A | | A | A | A | |
| Urine | | | | | A | A | | | A | | A | A | A | A | | A | A | | |
| Vinegar | | | | | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| Water (Fresh) | H ₂ O | | 1.00 | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| Water (Salt) | | | | | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| Whiskey | | | 0.90 | | A | A | A | A | A | | A | A | A | A | | A | A | | |
| Wines | | | | | A | A | A | A | A | | A | A | A | A | | A | A | A | |
| Xylene | C ₆ H ₄ (CH ₃) ₂ | 100 | 0.90 | A | C | A | A | C | A | A | A | A | C | A | | A | A | A | A |
| Zinc Chloride | ZnCl ₂ | SAT. | 2.90 | A | A | B | A | A | A | B | B | A | A | A | | A | A | A | A |
| Zinc Oxide | ZnO | | 5.50 | A | A | | | | | | | | | | | A | A | A | A |
| Zinc Sulfate | ZnSO ₄ | SAT. | 2.00 | | A | B | A | | A | A | A | A | A | A | A | A | A | | |