Stainless Steel Rotary Drum Pump
(P/N 272397)
Operating Instructions and Parts Manual

ATTENTION: TO INSURE SAFE AND EASY USE OF YOUR WESCO ROTARY PUMP, READ THESE INSTRUCTIONS BEFORE USING.

Description

The Wesco Stainless Steel Rotary Pump is commonly used for aggressive chemicals, such as Esters, Alcohols, Alkali, Strong Acids, and Hydrocarbons that are compatible with pump materials of construction. Also suitable for transferring Petroleum based fluids, such as Automotive Additives, Diesel, Lube Oils, Kerosene, Solvents, Thinner, Benzene, Cleaning Solutions, Fuel Oils, Transmission Fluid and water based chemicals, Anti-Freeze, Soaps, Waxes, Edible Liquids, etc. Supplied with 2" bung adapter, and a 3-piece stainless steel suction tube to fit most 15, 30 and 55 gallon drums.

This product is distributed by:

Wesco Industrial Products, Inc
1250 Welsh Road
North Wales, PA 19454
Tel: 215-699-7031 Fax: 215-699-3836

Contact the factory for parts information and ordering.
Visit us on the web at www.wescomfg.com

Unpacking

When unpacking the Wesco Product, check carefully for shipping damage and missing parts. If damage has occurred or any parts are missing, file a claim with the delivering carrier within 24 hours and notify the dealer from whom the unit was purchased.

Specifications

Pump Type	Rotary – Vane
Flow	9.5 oz / Stroke
Maximum Fluid Temperature	140° F / 60° C
Bung Adapter	2" Male
Inlet	1-1/4" O.D.
Outlet	1" O.D. Curved Spout
Maximum Viscosity	2,000 SSU

Warranty Repairs

If the unit does not work properly, contact your dealer or the factory (215-699-7031) for units less than 90 days old.

Non-Warranty Service

If units are older than 90 days, repairs can be made easily on site with factory supplied parts.
NOTE: Do not send units to the factory for service without first obtaining a "Return Merchandise Authorization" (RMA) number from the customer service department. We will not be responsible for merchandise returned without proper authorization.

General Safety Information

The Wesco Stainless Steel Rotary Pumps are designed for specific functions. To insure proper use, the following instructions must be adhered to:

(1) Always carefully read, thoroughly understand and follow the pump operating instructions. Use this pump correctly and with care for the purpose for which it is intended. Failure to do so may cause damage or personal injury and will invalidate the warranty. Retain instructions for future reference.
(2) Contact your chemical or fluid supplier to check for compatibility with pump prior to installation and operation.
(3) Prior to use, always carefully and thoroughly read and understand the OSHA information contained in the Safety Data Sheet supplied for the chemical which is to be pumped.
(4) Wear protective clothing (goggles, face masks, long sleeves, long pants, gloves, aprons, etc.) as set forth in the OSHA Safety Data Sheet when pumping hazardous chemicals.
(5) When using flammable liquids, pump containers should be grounded to avoid static electricity.
(6) Any pump used for transferring flammable liquids must be stored in a ventilated area after use.
(7) Pump should be washed out before it is used since processing lubricants may contaminate the fluids.
(8) Prior to use, inspect your pump thoroughly verifying its proper assembly.
(9) If pump is removed from drum, it should be thoroughly rinsed in a liquid that is compatible with both the pump and fluid.

LIMITED WARRANTY

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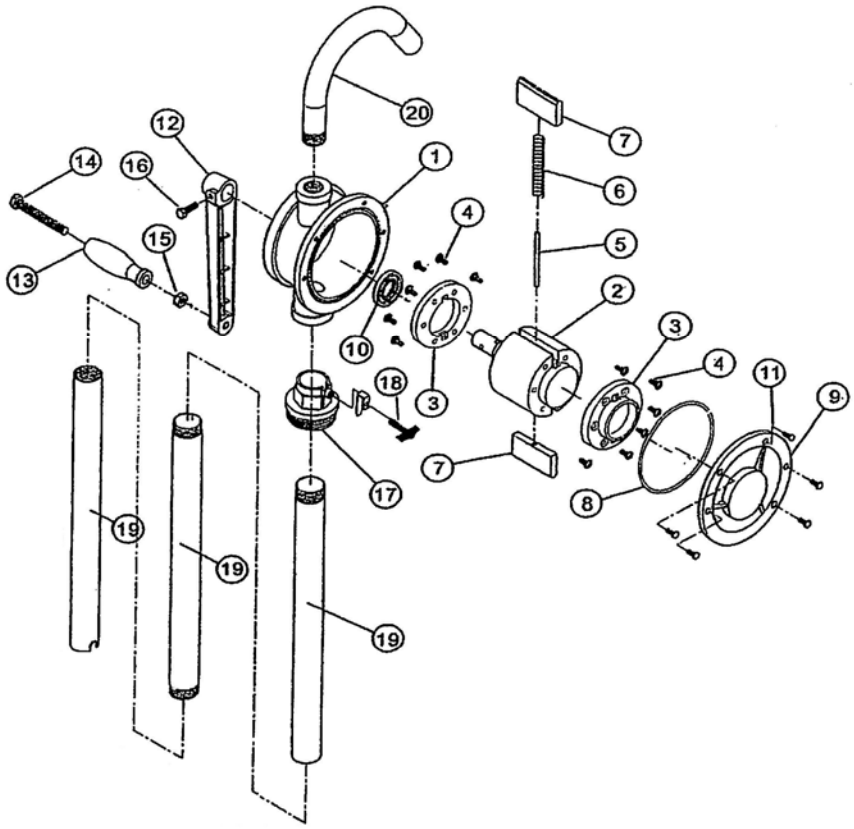
Part Breakdown



Parts List

Item	Description	Qty
1	Pump Body	1
2	Rear Cover	1
3	Front Cover	1
4	Rotor	1
5	Vane	2
6	Spring	1
7	Spring Rod	1
8	Lip Seal	1
9	Discharge Spout	1
10	Cap Screw	10
11	O-Ring	2
12	Crank Arm	1
13	Set Screw	1
14	Handle	1
15	Handle Shaft	1
16	Hex Bridge	1
17	Bung Adapter	1
18	Fixed Nut	1
19	Fixed Ring	1
20	Suction Tube	1

Assembly and Installation

(1) Check to see if all parts are included.
(2) Screw and discharge spout (Item 20) into pump body (Item 1) outlet using PTFE sealant tape provided. Do not use pipe sealant.
(3) Screw handle assemble to crank arm (Item 12) using hex nut (Item 15) supplied. Keep handle shaft from turning. Tighten hex nut against crank arm. Then insert crank arm assembly onto pump shaft, taking care to align set screw (Item 16) to indent in rotor (Item 2).
(4) In order to avoid leakage, please use PTFE tape provided to seal three suction tubes (Item 19). Insert bung adapter (Items 17) into section tube (Item 19) and thread suction tube into pump inlet.
(5) Insert pump and suction tube assembled with bung adapter into the drum, and then tighten bung adapter thumb screw (Item 18) by hand. Be sure to set pump and suction tube assembly so that suction tube is at the desired depth in the drum and is not blocked.

Operation

(1) To begin pumping fluid, rotate handle clockwise several times making complete revolutions until fluid begins to flow. Several revolutions will be made with no fluid dispensed as pump needs to prime, once primed, fluid flow begins as handle is rotated.
(2) For siphoning or draining fluid back into drum, place handle in the straight down position.
(3) To stop siphoning and maintain suction or prime, leave handle in horizontal position.
(4) If corrosion builds up in pump due to lack of use or fluid being pumped, adding penetrating oil into the pump inlet may help free pump. Remove pump from application, add penetrating oil, let soak, and then crank several times.
(5) Regularly check pump and suction tubes for leaks. Leaks in the suction line or in pump housing will cause inefficient pumping and loss of prime.

Pump Compatibility Chart

Chemical Resistance Chart

Chemical Resistance Chart

RATINGS-CHEMICAL EFFECT

A=NO effect-Excellent

B=Minor effect-Good

C=Moderate effect-Fair

D=Severe effect-Not recommended

— =No test data available

FOOTNOTES

1.P.V.C -Satistactory to 72° F.

2.Polypropylene-Satistactory to 72° F.

3.Polypropylene-Satistactory to 120° F.

4.Buna-N - Satistactory FOR "0" Rings

5.Polyacetal-Satistactory to 72° F.

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	Titanium	Hastelloy C	Cast Bronze	Brass	Cast Iron	Carbon Steel	Kynar	PVC(Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cycolac (ABS)	Polyethylene	Polypropylene	Ryton	Carbon	Ceramic	Ceramagnet"A"	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene	Rubber (Natural)	Epoxy
Acetaldehyde[5]	A	A	A	—	B	A	A	D	—	—	C	—	D	D	A	—	A	A	D	C	B	A	A	A	—	D	B	B	D	B	C	A
Acetamide	—	B	A	—	—	—	—	—	—	—	C	—	—	—	—	—	B	—	—	—	—	—	—	A	—	A	A	—	A	A	D	A
Acetate Solvent[2]	A	B	A	B	B	—	—	A	C	B	A	—	B	D	A	—	—	A	—	B	D	—	A	A	—	D	D	—	D	—	—	A
Acetic Acid.Glacia[1]	—	B	A	A	B	A	A	C	C	D	A	—	C	B	A	C	D	D	D	B	B	A	A	A	—	D	D	B	C	B	C	B
Acetic Acid 20%	—	B	A	—	—	A	A	—	C	—	—	A	B	—	A	A	—	D	—	—	A	A	—	A	—	A	C	—	C	—	—	B
Acetic Acid 80%	—	B	A	—	—	A	A	—	C	—	—	A	D	—	A	B	—	D	—	—	B	—	—	A	—	A	C	—	D	—	—	B
Acetic Acid	—	B	A	B	B	A	A	C	C	D	C	B	A	B	A	A	D	D	C	B	A	A	A	A	—	C	C	—	C	B	C	A
Acetic Anhydride	B	A	A	B	B	A	A	C	D	B	D	D	D	D	A	D	D	D	D	A	A	A	A	A	—	D	A	C	B	B	C	A
Acetone[6]	A	A	A	B	A	A	A	A	A	A	A	D	D	D	A	D	B	A	D	C	B	A	A	A	A	D	D	B	C	A	D	B
Acetyl Chloride	—	C	A	—	—	—	—	D	—	—	—	—	—	—	A	—	—	—	—	—	—	A	—	—	—	A	—	—	—	—	A	A
Acetylene[2]	A	A	A	A	A	B	—	B	—	A	A	—	B	—	—	—	A	A	—	—	D	A	A	A	—	A	A	C	B	A	C	A
Acrylonitrile	A	A	C	—	B	B	B	A	—	C	—	—	—	—	—	—	B	—	D	—	B	A	A	A	—	C	D	—	D	D	—	A
Alcohol, Amyl	A	A	A	—	C	A	A	A	B	C	C	A	A	B	A	C	A	A	B	B	B	A	A	A	—	A	A	D	A	A	C	A
Alcohol, Benzyl	—	A	A	—	B	A	A	A	C	—	—	—	D	B	—	A	A	A	D	D	A	—	A	A	—	A	D	—	B	B	D	A
Alcohol, Butyl	A	A	A	—	B	B	A	B	C	C	C	A	A	B	A	A	A	A	—	B	B	A	A	A	—	A	A	D	A	A	A	A
Alcohol, Diacetone2	—	A	A	—	A	A	A	A	C	—	A	—	D	—	—	A	A	A	—	—	D	—	A	A	—	D	D	—	D	A	D	A
Alcohol, Ethyl	—	A	A	A	B	A	A	A	C	A	A	—	A	C	—	A	B	A	B	B	A	—	A	A	A	A	A	B	A	B	A	A
Alcohol, Hexyl	—	A	A	—	A	A	A	A	C	—	A	—	—	—	—	A	A	A	—	—	A	—	A	A	—	A	A	D	B	A	A	A
Alcohol, Isobutyl	—	A	A	—	B	A	A	A	C	—	A	—	—	—	—	A	A	A	B	—	A	—	A	A	—	A	C	B	A	A	A	A
Alcohol, Isopropyl	—	A	A	—	B	A	A	A	C	C	A	—	—	—	—	A	A	A	—	—	A	—	A	A	—	A	C	C	B	A	A	A
Alcohol, Methyl[5]	—	A	A	A	B	A	A	A	C	A	A	—	B	—	A	A	C	A	D	B	A	—	A	A	A	C	B	—	A	A	A	A
Alcohol, Octyl	—	A	A	—	A	A	A	A	C	—	A	—	—	—	—	A	A	A	—	—	—	—	A	A	—	A	B	—	B	A	C	A
Alcohol, Propyl	—	A	A	—	A	A	A	A	—	—	A	B	A	—	A	A	A	A	—	—	A	—	A	A	—	A	A	B	A	A	A	A
Aluminum Chloride 20%	—	D	C	D	B	A	A	D	—	D	A	—	A	B	—	A	C	A	—	B	A	A	A	A	—	A	A	—	A	A	A	A
Aluminum Chloride	C	D	C	—	D	C	A	C	—	D	B	A	A	A	A	A	—	D	—	—	A	A	A	A	—	A	A	C	A	—	—	A
Aluminum Fluoride	—	D	C	D	—	D	B	—	—	—	A	A	A	—	A	A	C	D	—	B	A	—	A	—	—	A	A	C	A	—	C	A
Aluminum Hydroxide[7]	—	A	A	A	A	—	—	A	—	D	A	—	A	—	A	A	B	A	—	—	A	—	A	A	A	A	A	—	A	—	A	A
Aluminum Potassium Sulfate (Alum), 10%	—	A	—	—	A	—	B	—	—	D	A	—	A	—	A	—	—	A	—	A	—	—	A	A	—	A	—	—	A	—	A	A
Aluminum Potassium Sulfate (Alum), 100%	—	D	A	B	B	—	B	C	—	—	A	—	A	B	A	A	C	D	—	B	A	—	A	A	—	A	A	—	A	—	A	A
Aluminum Sulfate	—	C	C	A	A	A	A	C	C	D	A	A	A	B	A	A	C	A	—	B	A	A	A	A	—	A	A	—	A	A	A	A
Amines	A	A	A	—	A	B	A	B	—	A	B	—	C	A	A	B	D	A	—	—	—	—	A	A	—	D	D	C	B	B	C	A
Ammonia 10%	—	—	A	—	—	A	A	—	—	—	—	D	A	—	A	A	—	A	—	—	A	A	—	A	—	A	D	—	A	—	—	B
Ammonia, Anhydrous	A	B	A	A	B	B	A	D	—	D	B	D	A	B	A	A	D	A	—	B	A	B	C	A	—	D	B	B	A	A	D	A
Ammonia, Liquids	—	A	A	A	D	—	B	D	—	A	A	—	A	B	A	A	D	—	—	D	A	—	A	A	—	D	B	B	A	A	D	A
Ammonia, Nitrate	—	A	A	A	C	—	—	D	—	—	A	—	B	B	—	A	C	—	—	—	A	—	A	A	—	—	A	—	C	—	—	A
Ammonium Bifluoride	—	C	A	—	D	—	B	—	—	—	—	—	A	—	—	A	D	—	—	—	A	—	—	A	—	A	A	—	A	—	—	A
Ammonium Carbonate	B	A	A	A	C	A	B	B	—	C	B	—	A	B	A	A	D	A	—	—	A	—	A	A	—	B	D	C	A	A	—	A
Ammonium Casenite	—	—	A	—	—	—	—	—	—	—	—	—	—	—	—	A	D	—	—	—	—	—	—	—	—	—	—	—	A	—	—	A
Ammonium Chloride	C	A	C	A	C	D	A	D	C	D	D	A	A	B	A	A	B	A	—	B	A	A	A	A	—	A	A	C	A	A	A	A
Ammonium Hydroxide	A	A	A	A	C	A	A	D	D	A	C	—	A	B	A	A	D	A	B	B	A	A	A	A	—	B	B	B	A	A	C	A
Ammonium Nitrate	A	A	A	A	B	A	A	D	D	A	D	—	A	B	A	A	C	D	—	B	A	A	A	A	—	D	A	C	A	A	A	A
Ammonium Oxalate	—	A	A	A	—	—	A	—	—	—	A	—	—	—	—	—	B	—	—	—	—	—	A	—	—	—	A	—	A	—	—	A
Ammonium Persulfate	—	A	A	A	C	C	A	A	—	D	A	D	A	—	A	A	D	D	—	—	A	—	A	A	—	C	A	—	A	A	A	A
Ammonium Phosphate,Dibasic	B	A	A	A	B	A	A	C	—	—	D	—	A	—	A	A	B	A	—	B	A	—	A	A	—	A	A	B	A	A	A	A
Ammonium Phosphate,Monobasic	—	A	A	A	B	A	A	D	—	—	A	—	A	A	A	A	B	A	—	B	A	—	A	A	—	A	A	B	A	A	A	A
Ammonium Phosphate,Tribasic	B	A	A	A	B	A	A	C	—	C	D	—	A	—	A	A	B	A	—	B	A	—	A	A	—	A	A	B	A	A	A	A
Ammonium Sulfate	C	D	B	A	B	A	A	B	C	C	C	A	A	D	A	A	B	D	—	B	A	A	A	A	—	D	A	B	A	A	A	A
Ammonium Thio-Sulfate	—	—	A	—	—	A	—	—	—	D	A	—	—	—	—	—	B	—	—	—	—	—	A	A	—	—	A	—	A	—	—	A
Amyl-Acetate	B	A	A	C	B	A	A	C	—	—	C	C	D	D	A	D	A	B	—	D	D	A	A	A	—	D	D	D	D	A	D	A
Amyl Alcohol	—	A	A	—	B	A	A	A	—	—	A	A	A	B	A	C	A	A	—	B	A	—	A	A	—	B	B	D	A	A	C	A
Amyl Chloride	—	C	B	—	D	—	A	A	—	—	A	A	D	C	A	D	A	C	—	D	D	—	A	A	—	A	D	—	D	D	D	A
Aniline	B	A	A	A	C	A	B	C	—	—	C	C	D	D	A	D	D	C	D	C	B	A	A	A	—	C	D	C	D	B	D	A
Antifreeze	—	A	A	—	A	—	A	B	B	B	C	—	A	B	A	A	A	A	B	B	A	A	A	A	A	A	A	C	A	A	A	A

Chemical Resistance Chart

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	Titanium	Hastelloy C	Cast Bronze	Brass	Cast Iron	Carbon Steel	Kynar	PVC(Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cycolac (ABS)	Polyethylene	Polypropylene	Ryton	Carbon	Ceramic	Ceramagnet"A"	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene	Rubber (Natural)	Epoxy
Antimony Trichloride	—	D	D	—	D	C	A	—	—	—	—	—	A	A	A	—	—	D	—	A	—	—	—	A	—	A	—	—	C	—	A	A
Aqua Regia (80%,HCL,20%,HNO)	—	D	D	—	D	A	D	D	—	—	—	C	D	D	A	D	D	D	—	D	C	—	—	D	—	C	D	C	D	D	D	D
Arochlor 1248	—	—	—	—	—	—	—	—	—	—	A	—	—	—	—	D	—	—	—	—	—	—	A	—	—	A	D	—	D	B	D	A
Aromatic Hydrocarbons	—	—	A	—	A	—	—	A	—	A	A	—	D	—	—	D	A	—	—	C	—	—	A	—	—	A	D	—	D	D	D	A
Arsenic Acid	B	A	A	—	D	—	—	D	B	D	D	A	A	B	A	A	D	A	—	B	A	—	A	A	—	A	A	—	A	—	C	A
Asphalt	—	B	A	—	C	—	—	A	—	C	—	—	A	—	—	—	A	A	—	—	A	A	—	A	A	A	B	C	B	D	D	A
Barium Carbonate	B	A	A	A	B	A	A	B	—	B	B	—	A	A	A	A	A	A	—	B	A	—	A	A	A	A	A	—	A	—	A	A
Barium Chloride	C	D	A	A	D	A	A	B	—	—	C	A	A	B	A	A	A	B	—	B	A	A	A	A	—	A	A	B	A	A	A	A
Barium Cyanide	—	—	A	—	—	—	—	C	—	—	A	—	—	—	—	—	B	—	—	B	—	—	A	—	—	A	C	—	A	A	—	A
Barium Hydroxide	B	C	A	A	D	B	B	B	—	C	C	A	A	—	A	A	D	A	—	B	A	A	A	A	A	A	A	C	A	A	A	A
Barium Nitrate	—	A	A	—	—	A	—	D	—	A	A	—	B	—	—	A	A	—	—	—	—	—	A	A	—	A	A	—	A	A	—	B
Barium Sulfate	B	A	A	A	D	A	A	C	—	C	C	A	A	—	A	A	A	A	—	B	A	A	A	B	—	A	A	D	A	A	—	B
Barium Sulfide	B	A	A	—	D	B	—	C	—	C	C	—	A	A	A	A	A	A	—	B	A	—	A	A	—	A	A	C	A	A	A	A
Beer$_2$	A	A	A	—	A	A	A	A	B	D	D	A	A	—	A	A	B	D	B	B	D	—	A	A	—	A	D	C	A	A	A	A
Beet Sugar Liquids	A	A	A	—	A	—	—	A	B	A	—	—	A	—	A	A	B	A	B	—	A	—	A	A	—	A	A	—	B	A	A	A
Benzaldehyde$_3$	A	A	A	—	B	A	A	A	—	B	A	C	D	D	A	D	A	C	D	D	D	A	A	A	—	D	D	B	D	A	D	A
Benzene$_2$	B	A	A	A	B	A	B	B	A	B	C	B	D	C	A	D	A	A	D	D	D	A	A	A	A	A	D	—	D	D	D	A
Benzoic Acid$_2$	B	A	A	A	B	A	A	B	—	D	—	A	A	B	A	A	B	D	—	B	D	—	A	B	—	A	D	—	D	D	D	A
Benzol	—	A	A	—	B	A	A	B	A	—	—	—	D	—	A	D	A	A	—	—	A	—	A	A	A	D	D	—	D	—	—	A
Borax (Sodium Borate)	—	A	A	A	C	B	A	A	B	A	C	A	A	A	A	A	A	A	—	B	A	A	A	A	A	A	B	C	A	A	C	A
Boric Acid	B	A	A	A	B	A	A	B	C	D	—	A	A	B	A	A	A	A	—	B	A	—	A	A	A	A	A	—	A	A	A	A
Brewery Slop	—	—	A	—	—	—	—	A	—	A	—	—	—	—	—	—	A	—	—	—	—	—	A	A	—	A	A	—	A	—	—	A
Bromine$_2$ (wet)	D	D	D	D	D	A	A	C	—	D	D	A	B	B	A	D	D	D	D	D	D	D	D	A	D	A	D	D	D	D	D	C
Butadiene	A	A	A	—	A	—	—	C	A	C	C	A	A	—	A	—	A	A	—	—	—	B	A	A	—	A	A	—	B	A	—	A
Butane$_{2\ 1}$	A	A	A	—	A	—	—	A	A	C	C	A	A	C	A	D	A	A	B	C	D	A	A	A	—	A	A	D	B	D	D	A
Butanol	—	A	A	—	A	—	A	A	—	—	—	—	—	—	A	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Butter	—	B	A	—	A	—	—	D	—	D	—	—	—	B	—	B	A	—	B	—	—	—	A	A	—	A	A	—	B	A	D	A
Buttermilk	A	A	A	A	A	—	—	D	—	D	—	—	—	B	A	A	A	A	B	—	—	—	A	A	—	A	A	—	A	—	D	A
Butylene	A	B	A	—	A	—	—	A	A	A	A	—	B	—	A	—	A	—	—	—	—	A	A	A	—	A	B	—	—	D	D	A
Butyl Acetate$_1$	—	—	C	—	A	—	A	A	—	—	A	C	D	D	A	D	A	—	—	C	D	A	A	A	—	D	B	D	D	B	D	A
Butyric Acid$_1$	B	B	A	A	B	A	A	C	—	D	—	A	B	—	A	A	C	D	D	—	A	—	A	D	—	D	D	—	D	B	—	A
Calcium Bisulfate	C	D	A	—	D	—	—	D	D	D	—	—	A	A	A	—	—	A	—	—	—	—	—	—	—	A	A	C	C	—	A	A
Calcium Bisulfide	—	—	B	—	C	A	A	C	—	—	—	—	A	—	A	A	D	A	—	B	A	—	A	A	—	A	A	—	A	D	—	A
Calcium Bisulfite	—	B	A	—	C	A	A	C	—	—	—	A	A	—	A	A	—	A	—	—	A	—	—	A	—	A	A	—	A	—	A	—
Calcium Carbonate	B	A	A	A	C	A	A	C	—	D	—	—	A	A	A	A	A	A	—	B	A	—	A	A	—	A	A	—	A	—	A	A
Calcium Chlorate	—	B	A	—	—	B	B	C	—	—	—	—	A	A	A	—	—	A	—	A	—	—	A	—	—	A	—	—	A	—	A	A
Calcium Chloride	C	A	D	C	C	A	A	B	—	C	—	A	A	A	A	A	D	A	B	B	A	A	A	A	B	A	A	B	D	A	A	A
Calcium Hydroxide	B	A	A	—	C	A	A	B	—	—	—	—	A	A	A	A	B	A	—	B	A	—	A	A	A	A	A	C	A	A	A	A
Calcium Hypochlorite	D	D	C	C	C	A	B	D	—	D	—	A	D	—	A	A	D	D	—	B	A	—	A	A	—	A	B	C	D	A	C	A
Calcium Sulfate	B	A	A	A	B	A	B	B	—	—	—	A	A	A	A	A	A	A	C	B	A	A	A	A	—	A	A	—	D	—	C	A
Calgon	—	A	A	—	—	—	—	C	—	D	—	—	—	—	—	A	B	—	—	—	A	—	A	A	—	A	A	—	A	—	—	A
Cane Juice$_2$	—	A	A	—	B	—	—	B	C	A	—	—	A	—	—	—	A	A	—	—	D	—	A	A	—	—	A	—	A	—	A	A
Carbolic Acid (See Phenol)																																
Carbon Bisulfide$_2$	B	A	A	A	A	—	—	C	—	B	—	—	D	D	—	—	A	A	—	—	D	—	A	A	A	A	D	—	D	D	D	A
Carbon Dioxide (wet)	—	A	A	—	C	—	A	C	C	C	—	—	—	—	A	—	—	—	—	—	—	—	A	A	—	—	—	—	—	—	—	—
Carbon Disulfide$_2$	—	B	A	—	C	—	—	C	C	B	C	—	D	C	A	D	A	A	—	D	D	A	A	B	—	A	D	—	D	D	D	A
Carbon Monoxide	—	A	A	—	A	—	—	—	—	—	—	—	A	—	—	B	A	A	—	B	A	—	A	A	—	A	A	B	B	A	C	A
Carbon Tetrachloride$_{2\ 1}$	B	B	B	A	C	A	A	C	A	C	D	A	C	C	A	D	A	A	D	D	D	C	A	A	A	A	C	C	D	—	D	C
Carbonated Water	B	A	A	A	A	—	—	B	—	D	—	—	A	—	—	A	A	A	—	—	A	—	A	A	—	A	A	—	A	A	—	A
Carbonic Acid	B	A	B	A	A	—	A	B	—	D	—	A	A	—	A	A	A	A	—	B	A	—	A	A	—	A	B	B	A	A	A	A
Catsup	—	A	A	A	D	—	—	C	—	D	—	—	A	—	—	A	B	A	B	—	A	—	A	A	—	A	A	—	C	—	—	A
Chloracetic Acid$_2$	D	D	D	D	C	A	A	D	—	D	—	D	A	D	A	—	D	D	—	D	D	—	A	A	—	D	D	—	D	B	D	B
Chloric Acid	—	D	D	—	—	—	—	—	—	—	—	—	D	—	A	—	—	—	—	—	—	—	—	—	—	—	D	—	D	—	—	D
Chlorinated Glue	—	A	A	—	D	—	—	C	—	D	—	—	—	—	—	C	—	C	D	—	—	—	—	A	—	A	C	—	D	B	D	A
Chlorine, Anhydrous Liquid	—	D	D	D	D	D	A	D	—	C	—	—	D	B	A	A	D	D	—	D	D	C	A	D	—	A	D	—	D	B	D	B
Chlorine (dry)	B	A	A	—	D	D	A	A	B	A	—	—	—	—	A	—	—	—	—	—	—	C	A	A	—	D	—	—	D	—	D	D
Chlorine Water	D	—	D	—	D	A	B	D	D	D	—	A	A	—	A	C	—	D	—	—	D	C	C	A	—	A	D	C	D	—	—	—
Chlorobenzene (Mono)	A	A	A	—	B	—	A	B	—	B	C	A	D	D	A	D	A	A	D	D	D	A	A	A	—	A	D	—	D	D	D	A
Chloroform	A	A	A	A	D	A	A	B	—	D	C	C	D	C	A	D	A	C	D	D	D	C	A	A	A	A	D	D	D	D	D	A
Chlorosulfonic Acid$_1$	D	D	—	D	D	A	B	D	—	—	D	D	C	C	A	D	D	D	—	D	D	D	—	C	—	D	D	D	D	D	D	C
Chlorox (Bleach)	—	A	A	—	C	—	A	A	—	D	C	—	A	B	A	A	D	D	B	—	D	C	A	A	—	A	C	—	B	B	D	A
Chocolate Syrup	—	A	A	—	A	—	—	—	—	D	—	—	—	—	—	A	A	A	—	—	A	—	—	A	—	A	A	—	A	—	D	A
Chromic Acid 5%	—	A	A	B	C	A	A	D	D	D	—	—	A	B	—	C	D	D	B	B	A	A	D	C	—	A	D	C	D	A	B	B

Chemical Resistance Chart

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	Titanium	Hastelloy C	Cast Bronze	Brass	Cast Iron	Carbon Steel	Kynar	PVC(Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cycolac (ABS)	Polyethylene	Polypropylene	Ryton	Carbon	Ceramic	Ceramagnet"A"	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene	Rubber (Natural)	Epoxy
Chromic Acid 10%	—	B	—	—	—	A	A	—	D	—	—	A	A	—	A	A	—	D	—	—	A	—	—	A	—	A	D	—	D	—	—	C
Chromic Acid 30%	—	B	—	—	—	A	A	—	D	—	—	B	A	—	A	D	—	D	—	—	A	—	—	A	—	A	D	—	D	—	—	D
Chromic Acid 50%	C	B	B	—	C	A	A	D	D	D	—	C	B	B	A	D	D	D	C	C	B	B	D	A	—	A	D	—	D	A	D	C
Cider	—	A	A	A	B	—	—	A	—	D	—	—	A	—	—	A	B	—	—	B	—	—	A	A	—	A	A	—	A	—	—	A
Citric Acid	—	A	A	A	C	A	A	D	C	D	—	A	A	—	A	A	B	C	C	B	B	—	A	A	B	A	D	C	A	A	A	A
Citric Oils	—	A	A	—	C	—	—	B	—	—	—	—	—	—	—	A	B	—	—	—	A	—	A	A	—	A	A	C	D	—	—	A
Coffee	A	A	A	A	A	—	—	B	—	C	—	—	—	—	A	A	A	A	—	—	A	—	A	A	—	A	A	—	A	—	A	A
Copper Chloride	C	D	D	B	D	A	A	D	—	D	—	A	A	B	A	A	B	D	—	B	A	A	—	A	—	A	A	—	A	A	A	A
Copper Cyanide	—	A	A	A	D	A	A	C	—	D	—	A	A	—	A	A	B	A	—	B	A	A	A	A	—	B	B	—	A	A	A	C
Copper Fluoborate	—	D	D	—	D	—	B	D	—	D	—	—	A	—	A	—	B	—	—	A	—	—	A	—	—	A	B	—	A	—	A	A
Copper Nitrate	B	A	A	B	D	A	A	D	—	—	—	A	A	—	A	A	B	D	—	B	A	—	A	A	—	A	A	—	A	—	—	A
Copper Sulfate (5% Solution)	—	A	A	A	D	A	A	D	D	D	—	—	A	—	A	A	B	D	—	B	A	A	A	A	—	A	A	C	A	—	C	A
Copper Sulfate	B	B	—	—	—	A	A	C	D	—	—	A	A	—	A	A	—	C	—	—	A	—	—	A	—	B	B	—	A	A	—	A
Cream	—	A	A	—	A	—	—	C	—	D	—	—	—	—	—	A	A	A	—	—	A	—	A	A	—	A	A	—	C	—	—	A
Cresols$_2$	—	A	A	—	B	—	—	D	C	—	—	—	D	D	—	—	D	—	D	D	C	A	A	A	—	D	D	D	D	D	D	A
Cresylic Acid	B	A	A	—	C	A	B	C	—	—	—	B	B	D	A	—	D	D	—	C	—	—	A	A	—	A	D	—	D	D	D	A
Cyclohexane	—	A	—	—	A	A	—	A	—	—	A	—	—	D	—	D	A	—	—	—	D	A	A	A	—	A	A	D	D	D	D	A
Cyanic Acid	—	A	—	—	—	—	—	—	—	—	—	—	—	—	—	—	D	—	—	—	—	—	—	—	—	—	C	—	D	—	—	A
Detergents	—	A	A	—	A	—	—	A	—	—	A	—	A	—	—	A	B	A	B	B	A	A	A	A	—	A	A	—	B	A	C	A
Dichlorethane	—	A	A	—	—	—	A	—	—	—	—	—	D	D	A	—	—	A	—	D	—	—	—	—	—	B	—	—	D	—	D	A
Diesel Fuel	A	A	A	—	A	—	—	A	—	A	A	—	—	—	—	D	A	—	—	—	D	A	A	A	—	A	A	—	D	D	D	A
Diethylamine	A	A	—	—	A	—	—	A	—	—	—	—	D	—	A	B	D	—	—	—	C	—	A	A	—	D	B	—	B	B	C	A
Diethlene Glycol	—	A	—	—	—	—	—	A	—	—	—	—	—	—	—	A	A	A	B	B	—	—	A	A	—	A	A	C	A	A	A	A
Diphenyl Oxide	—	A	—	—	—	—	—	A	—	—	—	—	—	—	—	—	A	—	—	—	—	—	A	A	—	A	D	—	D	D	D	A
Dyes	—	A	A	—	B	—	—	C	—	—	—	—	—	—	—	A	A	—	—	—	—	—	—	—	—	A	—	—	C	—	—	A
Epsom Salts (Magnesium Sulfate)	B	A	A	A	A	A	B	B	—	—	—	—	A	—	—	A	A	—	—	—	A	—	A	A	—	A	A	—	A	—	C	A
Ethane	A	A	—	—	A	—	—	A	—	—	—	—	—	—	—	D	A	—	—	—	—	—	A	A	—	A	A	—	B	D	D	A
Ethanolamine	—	A	A	—	—	—	—	—	—	—	C	—	—	—	—	—	D	—	—	—	—	A	A	A	—	D	B	C	B	—	C	A
Ether$_3$	A	A	A	A	A	—	B	B	A	—	B	—	D	C	—	D	A	C	—	—	—	A	A	A	A	C	D	—	D	C	D	A
Ethyl Acetate$_2$	—	A	A	—	B	—	B	B	—	—	C	D	D	D	A	D	A	A	D	C	C	A	A	A	—	D	D	C	D	B	D	A
Ethyl Chloride	—	A	A	A	B	A	B	B	—	C	D	A	D	D	A	D	A	A	—	D	D	A	A	A	—	A	D	D	C	A	A	A
Ethyl Sulfate	—	D	—	—	—	—	—	—	—	—	—	—	—	—	—	—	B	—	—	—	—	—	A	A	—	A	A	—	—	—	—	A
Ethylene Chloride$_2$	—	A	A	—	C	B	B	A	—	C	C	—	D	—	A	D	A	—	D	—	D	A	A	A	—	A	D	D	D	C	D	A
Ethylene Dichloride	—	A	A	—	D	A	B	C	—	—	C	—	D	D	A	D	A	A	—	D	A	A	C	A	—	A	D	D	D	C	D	A
Ethylene Glycol$_4$	—	A	A	—	A	—	A	B	B	B	C	A	A	B	A	A	A	A	B	B	A	A	A	A	A	A	A	C	A	A	A	A
Ethylene Oxide	—	—	A	—	A	—	—	A	—	—	—	—	D	—	A	A	A	A	—	—	—	—	A	A	—	D	D	D	D	C	D	A
Fatty Acids	—	A	A	—	B	A	A	C	—	D	—	A	A	B	A	B	A	A	—	B	A	—	A	A	—	A	C	C	B	C	C	A
Ferric Chloride	—	D	D	D	D	A	B	D	D	D	—	A	A	B	A	A	B	D	—	B	A	A	A	A	—	A	D	C	B	A	A	A
Ferric Nitrate	—	A	A	A	D	A	A	D	—	—	—	A	A	—	A	A	B	D	—	B	A	A	A	A	—	A	A	D	A	A	A	A
Ferric Sulfate	—	A	C	A	D	A	A	D	D	D	—	A	A	B	A	A	B	A	C	—	A	A	C	A	—	A	B	C	A	—	A	A
Ferrous Chloride	—	D	D	—	D	A	B	C	—	D	—	A	A	B	A	A	B	D	—	B	A	A	A	A	—	A	B	C	A	—	A	A
Ferrous Sulfate	B	A	C	—	D	A	B	C	—	D	D	A	A	B	A	A	B	D	—	B	A	A	A	A	—	A	B	—	A	—	A	A
Fluoboric Acid	—	D	B	—	—	D	A	—	—	D	—	A	A	B	A	B	B	C	—	B	A	—	A	D	—	A	B	—	A	—	—	A
Fluorine	D	D	D	—	D	D	A	D	—	D	D	—	C	—	C	—	—	D	—	C	—	—	D	—	—	—	—	—	—	—	—	D
Fluosilicic Acid	—	—	B	—	D	D	B	—	—	D	—	A	A	B	A	A	B	D	—	B	A	—	A	D	—	B	A	—	A	—	—	C
Formaldehyde 40%	—	—	A	—	—	A	A	—	—	—	—	B	B	—	A	A	—	D	—	—	A	A	—	A	—	D	B	B	A	—	—	A
Formaldehyde	A	A	A	—	A	A	B	A	B	D	A	—	A	B	A	D	A	A	—	B	A	A	A	A	—	D	C	B	D	B	C	A
Formic Acid$_6$	C	A	B	B	D	C	A	C	C	D	D	A	D	B	A	A	D	D	—	B	A	A	A	A	B	B	D	C	D	A	C	B
Fruit Juice	A	A	A	A	B	—	—	B	—	D	D	—	A	—	D	A	B	A	—	B	A	—	A	A	A	A	A	—	A	—	—	A
Fuel Oils	A	A	A	—	A	A	A	B	—	C	B	A	A	—	A	A	A	A	—	D	B	A	A	A	—	A	A	C	B	D	D	A
Furan Resin	—	A	A	—	A	—	—	A	—	A	A	—	—	—	A	—	A	—	—	—	—	A	—	A	—	A	D	—	D	—	D	A
Furfural$_1$	A	A	A	—	A	—	B	A	—	—	A	D	D	—	A	D	B	A	D	D	D	A	A	A	—	D	D	D	D	B	D	A
Gallic Acid	B	A	A	—	A	—	A	A	—	D	D	—	A	A	A	—	—	A	—	—	—	—	—	—	—	B	A	—	—	—	—	—
Gasoline$_{1,4}$	A	A	A	A	A	D	A	A	—	A	A	A	C	—	A	D	A	A	D	D	C	A	A	A	A	A	A	D	D	C	D	A
Gelatin	A	A	A	A	A	—	A	A	C	D	D	—	A	—	A	A	A	A	—	—	A	—	A	A	—	A	A	—	A	A	A	A
Glucose	A	—	A	—	A	—	—	A	A	B	B	—	A	B	A	B	A	A	B	B	A	—	A	A	—	A	A	B	A	A	A	A
Glue P.V.A.$_1$	B	B	A	—	B	A	—	A	—	—	A	—	A	B	A	—	A	A	—	—	—	—	A	A	—	A	A	—	A	—	—	A
Glycerine	A	A	A	A	A	A	A	A	B	B	B	A	A	B	A	A	A	A	C	—	A	—	A	A	—	A	A	B	A	A	A	A
Glycolic Acid	—	—	—	—	—	—	A	—	—	—	—	—	—	A	—	A	C	—	—	B	A	A	A	—	—	A	A	—	A	—	—	A
Gold Monocyanide	—	—	A	—	—	—	—	A	—	D	—	—	—	—	—	—	A	—	—	—	—	—	A	A	—	A	A	—	A	—	—	A
Grape Juice	—	A	A	—	B	—	—	B	—	D	—	—	A	—	—	A	B	—	B	B	—	—	A	A	—	A	A	—	A	—	—	A
Grease$_4$	A	A	A	—	A	—	—	B	—	A	A	—	—	—	A	—	A	A	—	—	—	—	A	A	—	A	A	—	D	—	—	A

Chemical Resistance Chart

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	Titanium	Hastelloy C	Cast Bronze	Brass	Cast Iron	Carbon Steel	Kynar	PVC(Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cycolac (ABS)	Polyethylene	Polypropylene	Ryton	Carbon	Ceramic	Ceramagnet"A"	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene	Rubber (Natural)	Epoxy
Heptane[1]	A	—	A	—	A	—	A	A	—	—	B	A	A	—	A	D	A	A	C	D	D	A	A	A	—	A	A	—	B	D	—	A
Hexane[1]	A	A	A	—	A	—	A	B	—	—	B	A	C	—	A	D	A	A	D	—	C	A	A	A	—	A	A	B	B	D	D	A
Honey	—	A	A	—	A	—	—	A	—	A	—	—	A	—	—	A	A	A	B	—	A	—	A	A	—	A	A	—	A	A	—	A
Hydraulic oils (Petroleum)[1]	A	A	A	—	A	—	—	B	—	A	A	—	—	—	A	—	A	A	—	—	D	—	A	A	—	A	A	—	B	D	D	A
Hydraulic Oils (Synthetic)[1]	—	A	A	—	A	—	—	A	—	A	—	—	—	—	—	—	A	A	—	—	D	—	A	A	—	A	C	D	—	—	—	A
Hydrazine	—	A	A	—	—	—	—	—	—	C	—	—	—	—	—	—	D	—	—	—	—	—	A	—	—	A	B	D	B	A	C	A
Hydrobromic Acid 20%	—	—	D	—	—	A	A	—	—	—	—	A	A	—	A	A	—	D	—	—	A	—	—	B	—	A	D	—	C	—	—	B
Hydrobromic Acid[4]	D	D	D	D	D	A	A	D	—	D	D	A	A	B	A	C	D	D	—	B	B	—	A	A	—	A	D	D	D	A	A	A
Hydrochloric/Muratic Acid (Dry gas)	D	C	A	—	D	—	A	—	—	—	D	—	A	—	A	—	—	—	—	—	—	—	A	—	—	—	—	—	—	A	—	A
Hydrochloric/Muratic Acid (20%)[4]	—	D	D	D	D	C	B	D	—	D	—	A	A	B	A	A	D	D	B	A	A	D	A	A	D	A	C	—	C	A	C	A
Hydrochloric/Muratic Acid (37%)[5]	—	D	D	D	D	C	B	D	—	D	—	A	A	B	A	A	D	D	C	A	A	D	A	C	D	A	C	C	C	C	D	A
Hydrochloric/Muratic Acid (100%)	—	D	D	—	D	D	C	D	—	D	—	—	A	A	A	—	—	D	—	A	—	—	A	C	—	C	D	—	C	—	A	A
Hydrocyanic Acid	A	A	A	C	A	A	C	D	D	—	C	—	A	B	A	A	B	A	—	B	A	—	A	A	—	A	C	—	B	—	A	A
Hydrocyanic Acid (Gas 10%)	—	D	D	—	—	—	—	—	—	—	—	—	A	—	A	—	—	—	—	—	—	—	—	—	—	—	—	—	C	A	C	A
Hydrofluoric Acid (20%)[1]	—	D	D	D	D	D	B	D	—	D	—	—	D	B	A	A	D	D	—	C	A	C	B	C	D	A	D	—	C	A	C	B
Hydrofluoric Acid (75%)[12]	—	C	D	—	D	D	C	D	—	D	—	A	C	B	A	D	D	D	—	C	B	C	D	D	D	A	D	D	D	C	C	C
Hydrofluoric Acid 100%	D	D	D	—	D	D	B	D	—	D	D	—	C	D	A	—	—	—	—	D	—	C	D	D	—	—	D	—	D	—	D	A
Hydrofluosilicic Acid (20%)	—	D	D	—	D	D	B	A	—	D	—	—	D	—	A	B	D	D	—	—	A	—	A	D	—	A	B	—	B	A	A	C
Hydrofluosilicic Acid	—	D	D	—	C	—	C	D	—	—	—	—	—	C	A	—	—	—	—	—	—	—	A	—	—	—	—	D	A	—	—	—
Hydrogen Gas	A	A	A	—	A	—	—	A	—	B	B	A	A	—	A	—	—	—	—	—	—	—	—	—	—	A	—	—	—	—	—	A
Hydrogen Peroxide 10%	—	C	C	—	A	C	A	D	D	D	—	—	A	A	A	—	—	D	—	A	—	B	A	A	—	—	A	—	D	—	C	D
Hydrogen Peroxide 30%	—	—	B	—	—	B	A	—	D	—	—	—	A	—	A	—	—	D	—	—	A	C	—	—	—	A	D	—	C	—	—	B
Hydrogen Peroxide	—	A	B	A	A	B	A	D	D	D	D	C	A	C	A	B	D	D	—	B	A	C	—	A	A	A	D	C	D	C	C	A
Hydrogen Sulfide,Aqueous Solution	—	D	A	C	C	A	A	D	C	D	—	A	A	B	A	A	D	D	—	B	A	A	A	A	A	D	C	—	B	A	D	A
Hydrogen Sulfide (dry)	A	C	A	—	D	—	A	D	C	B	B	—	A	—	A	—	—	D	—	—	—	A	—	A	—	D	—	—	—	—	A	A
Hydroxyacetic Acid (70%)	—	—	—	—	D	B	—	—	—	—	—	—	A	—	—	—	D	—	—	—	—	—	A	A	—	A	A	—	A	A	—	A
Ink	A	A	A	—	C	—	—	C	—	D	D	—	—	—	—	B	A	A	—	B	—	—	A	A	A	A	A	—	A	—	—	A
Iodine	—	D	D	D	D	A	B	D	—	D	—	—	D	B	A	A	C	D	D	D	D	—	D	A	—	A	B	—	D	B	D	A
Iodine (In Alcohol)	—	—	B	—	—	D	A	—	—	—	—	—	D	—	A	C	—	D	—	—	B	—	—	A	—	A	D	—	D	—	—	—
Iodoform	B	C	A	—	A	—	—	C	—	C	B	—	—	—	A	—	—	A	—	—	—	—	—	—	—	A	—	—	—	—	—	—
Isotane[2]	—	—	—	—	A	—	—	—	—	—	—	—	—	—	—	D	A	—	—	—	D	—	—	A	—	A	A	—	—	—	D	A
Isopropyl Acetate	—	—	B	—	C	—	—	—	—	—	—	—	—	—	—	—	A	—	—	—	—	—	A	A	—	D	D	—	D	B	D	A
Isopropyl Ether[2]	A	—	A	—	A	—	—	A	—	—	A	—	—	—	A	D	A	—	—	—	D	—	A	A	—	D	B	—	D	D	D	—
Jet Fuel (JP#,JP4,JP5)	A	A	A	—	A	—	—	A	—	A	A	A	A	—	A	D	A	A	—	—	D	A	A	A	—	A	A	D	D	D	D	A
Kerosene[2]	A	A	A	A	A	A	A	A	A	A	B	A	A	D	A	D	A	A	B	D	D	A	A	A	A	A	A	D	D	A	D	A
Ketones	A	A	A	—	B	A	A	A	—	A	A	D	D	D	A	D	B	A	—	D	D	A	C	A	—	D	D	—	D	D	C	C
Lacquers	A	A	A	—	A	—	—	A	C	C	C	—	—	D	—	C	A	A	—	—	A	—	A	A	—	D	D	—	D	—	D	A
Lacquer Thinners	—	—	A	—	—	A	A	—	C	—	—	—	C	—	A	D	—	A	—	—	B	—	—	A	—	—	D	—	D	A	—	—
Lactic Acid	A	A	B	C	C	A	A	D	—	D	D	C	A	B	A	A	B	C	—	B	A	A	A	A	—	B	B	—	A	B	A	A
Lard	B	A	A	A	A	—	—	A	—	A	C	—	A	—	—	—	A	A	C	—	A	—	A	A	—	A	A	C	B	—	D	A
Latex	—	A	A	—	A	—	—	A	—	—	—	—	—	—	—	A	A	A	—	B	—	—	—	A	—	A	A	—	C	A	—	A
Lead Acetate	B	A	A	—	D	A	A	C	—	—	D	—	A	B	A	A	A	A	—	B	A	—	A	A	—	D	B	—	D	A	A	A
Lead Sulfamate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	A	—	—	—	A	—	—	—	—	A	B	C	A	D	C	A
Ligroin[3]	—	—	A	—	—	—	—	A	—	—	—	—	—	—	—	D	A	—	—	—	D	—	—	A	—	A	A	—	B	A	D	A
Lime	—	A	A	—	C	A	—	A	—	A	—	—	A	—	—	A	D	—	C	—	—	—	A	A	—	A	A	C	B	D	—	A
Lubricants	—	A	A	—	A	A	A	B	—	—	—	—	A	—	A	—	A	A	B	—	A	A	A	A	—	A	A	C	D	—	D	A
Magnesium Carbonate	—	A	A	A	—	—	B	—	—	—	—	—	A	—	—	A	A	—	—	B	A	—	—	A	—	—	A	—	A	A	—	A
Magnesium Chloride	B	B	B	A	D	A	A	B	C	D	C	—	A	B	A	A	A	A	—	B	A	A	—	A	—	A	A	—	A	A	A	A
Magnesium Hydroxide	A	A	A	—	D	A	A	C	B	B	B	A	A	—	A	A	A	A	—	B	A	A	A	A	—	A	B	—	B	—	C	A
Magnesium Nitrate	—	A	A	A	—	A	A	—	—	—	—	—	A	—	A	A	A	A	—	B	A	—	—	A	—	A	A	—	A	—	—	A
Magnesium Oxide	—	A	A	—	—	—	—	—	—	—	—	—	—	—	—	—	A	—	—	—	—	—	—	A	—	—	A	—	A	A	—	A
Magnesium Sulfate	B	B	A	—	B	A	B	B	B	C	B	—	A	B	A	A	A	A	—	B	A	A	A	A	—	A	A	—	A	D	C	A
Maleic Acid	C	A	A	A	B	A	A	C	—	—	B	—	A	B	A	A	C	A	—	—	C	—	A	A	—	A	D	—	A	D	D	A
Maleic Anhydride	—	—	—	—	—	—	A	—	—	—	—	—	—	—	—	—	C	—	—	—	—	—	A	A	—	A	D	—	D	—	D	A
Malic Acid	B	A	A	—	C	—	A	D	—	—	D	—	A	—	A	—	—	A	—	—	—	—	—	A	—	B	—	—	A	—	A	—
Mash	—	A	A	—	—	—	—	A	—	—	—	—	—	—	—	A	A	—	—	—	—	—	A	A	—	—	A	—	A	—	—	A
Mayonnaise	A	A	A	—	D	—	—	D	—	D	D	—	—	—	A	A	A	A	B	—	A	—	A	A	—	A	A	—	—	—	—	A
Melamine	—	D	D	—	—	—	—	D	—	—	—	—	—	—	—	—	D	—	—	—	—	—	A	A	—	—	C	—	—	—	—	A
Mercuric Chloride (Dilute Solution)	D	D	D	D	D	A	B	D	D	D	D	—	A	A	A	A	A	A	—	B	A	—	A	A	—	A	A	—	A	A	A	A
Mercuric Cyanide	A	A	A	—	D	A	—	D	—	—	D	—	A	—	A	A	A	—	—	B	A	—	A	A	—	—	A	—	—	—	—	A
Mercury	A	A	A	A	C	C	A	D	D	A	A	—	A	—	A	A	A	A	—	B	A	—	A	A	—	A	A	—	A	A	A	A
Methanol (See Alcohol Methyl)																																

Chemical Resistance Chart

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	Titanium	Hastelloy C	Cast Bronze	Brass	Cast Iron	Carbon Steel	Kynar	PVC(Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cycolac (ABS)	Polyethylene	Polypropylene	Ryton	Carbon	Ceramic	Ceramagnet"A"	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene	Rubber (Natural)	Epoxy
Methyl Acetate	A	—	A	—	A	—	A	A	—	—	B	—	—	—	A	—	A	—	D	—	—	—	A	A	—	D	D	D	B	B	D	—
Methyl Acrylate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	A	—	—	—	—	—	A	A	—	D	D	—	B	B	D	A
Methyl Acetone	A	—	A	—	A	—	—	A	—	A	A	—	—	—	A	D	A	—	—	—	—	—	—	A	—	D	D	—	D	—	—	C
Methyl Alcohol 10%	A	—	A	—	C	—	A	C	—	—	B	—	A	—	A	—	—	A	—	—	—	—	—	—	—	—	B	—	—	—	A	A
Methyl Bromide	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	A	—	—	D	—	—	A	A	—	A	B	—	D	D	D	B
Methyl Butyl Ketone	—	—	A	—	A	—	—	—	—	—	—	—	—	—	—	D	B	—	—	—	—	—	A	A	—	D	D	C	D	A	D	B
Methyl Cellosolve	—	—	—	—	A	—	—	A	—	—	—	—	—	—	—	C	B	—	—	—	A	—	A	A	—	D	D	—	D	B	D	C
Methyl Chloride	—	A	A	—	D	A	A	A	—	—	—	A	D	—	A	D	A	A	—	D	D	—	A	A	—	A	D	D	D	C	D	A
Methyl Dichloride	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	D	A	—	—	—	—	—	A	A	—	A	D	—	D	D	D	A
Methyl Ethyl Ketone	—	A	A	—	A	A	A	A	—	—	—	D	D	—	A	D	B	A	D	D	A	A	A	A	—	D	D	C	D	A	D	B
Methyl Isobutyl Ketone$_2$	—	—	A	—	—	A	A	—	—	—	—	D	D	—	A	D	B	A	D	—	C	A	A	A	—	D	D	C	D	C	D	B
Methyl Isopropyl Ketone	—	—	A	—	—	—	—	—	—	—	—	—	—	—	—	D	B	A	—	—	—	—	A	A	—	D	D	B	D	B	D	B
Methyl Methacrylate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	A	—	—	—	—	—	A	A	—	D	D	—	D	D	D	A
Methylamine	A	—	A	—	A	—	—	D	—	B	B	—	—	—	—	B	D	—	—	—	—	—	A	A	—	—	B	—	—	—	—	A
Methylene Chloride	A	A	A	—	A	A	A	A	C	—	B	D	D	—	A	D	A	D	—	D	D	—	A	A	—	D	D	—	D	D	D	A
Milk	A	A	A	A	A	—	—	C	C	D	D	—	A	—	—	A	A	A	B	B	A	—	A	A	A	A	A	B	A	A	A	A
Molasses	A	A	A	A	A	—	—	A	B	A	A	—	A	—	—	B	A	A	—	B	A	—	A	A	A	A	A	—	A	—	—	A
Mustard	A	A	A	A	B	—	—	B	—	C	B	—	A	—	—	B	B	A	B	—	A	—	A	A	—	A	B	C	C	—	—	A
Naphtha	A	A	A	A	A	A	A	B	—	B	B	A	A	C	A	D	A	A	C	D	A	A	A	A	—	A	B	D	D	D	D	A
Naphthalene	B	A	B	—	B	A	A	C	—	B	A	A	D	—	A	D	A	—	—	D	B	A	A	A	—	B	D	—	D	D	D	A
Nickel Chloride	—	A	B	—	D	A	A	D	—	D	—	A	A	B	A	A	B	A	—	B	A	—	A	A	—	A	A	—	A	A	A	A
Nickel Sulfate	B	A	B	—	D	A	B	C	C	D	D	A	A	A	A	A	B	A	—	B	A	—	A	A	—	A	A	—	A	A	C	A
Nitric Acid (10% Solution)	A	A	A	A	D	A	A	D	—	D	D	A	A	B	A	A	D	D	C	B	A	D	C	B	D	A	D	—	D	B	D	A
Nitric Acid (20% Solution)	—	A	A	A	D	A	A	D	—	D	—	B	A	B	A	A	D	D	D	B	A	C	D	C	D	A	D	—	D	D	D	B
Nitric Acid (50% Solution)	—	A	A	A	D	A	A	D	—	D	—	B	A	B	A	A	D	D	D	C	D	C	D	A	—	A	D	—	D	D	D	D
Nitric Acid (Concentrated Solution)	—	D	B	A	B	A	B	D	D	D	—	—	D	C	A	D	D	D	D	D	D	C	D	A	C	B	D	—	D	D	D	D
Nitrobenzene$_2$	B	A	B	—	C	A	B	D	—	B	B	D	D	D	A	D	B	C	D	D	C	B	A	A	—	D	D	D	D	D	D	B
Oil, Aniline	—	A	A	—	C	A	D	A	—	A	—	—	D	—	A	D	D	C	D	—	A	—	A	A	—	A	D	—	D	B	D	A
Oil, Anise	—	A	A	—	—	—	—	—	—	—	—	—	—	—	—	—	A	—	—	—	—	—	A	A	—	—	—	—	D	—	—	A
Oil, Bay	—	A	A	—	—	—	—	—	—	—	—	—	—	—	—	—	A	—	—	—	—	—	A	A	—	A	—	—	D	—	—	A
Oil, Bone	—	A	A	—	—	—	—	A	—	—	—	—	—	—	—	—	A	—	—	—	—	—	A	A	—	A	A	—	D	—	—	A
Oil, Castor	—	A	A	—	A	—	—	A	—	A	—	—	A	—	—	—	A	—	—	—	—	—	A	A	A	A	A	—	A	B	A	A
Oil, Cinnamon	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	—	A	—	—	—	A	—	A	A	—	D	—	—	D	—	—	A
Oil, Citric	—	A	A	—	—	—	—	D	—	D	—	—	—	—	—	—	A	A	—	—	A	—	A	A	—	A	A	—	D	—	—	A
Oil, Clove	—	A	A	—	—	—	—	—	—	—	—	—	—	—	—	—	A	A	—	—	B	—	A	A	—	—	A	—	—	—	—	A
Oil, Coconut	—	A	A	—	B	—	—	A	—	A	—	—	—	—	—	—	A	A	—	—	A	—	A	A	—	A	A	—	A	A	D	A
Oil, Cod Liver	—	A	A	—	B	—	—	—	—	—	—	—	—	—	—	—	A	A	C	—	A	—	A	A	—	A	A	—	B	A	D	A
Oil, Corn	—	A	A	A	B	—	—	B	—	A	—	—	—	—	—	—	A	A	C	—	A	—	A	A	—	A	A	—	D	C	D	A
Oil, Cotton Seed	B	A	A	A	B	—	—	B	—	A	C	—	A	—	A	—	A	A	C	—	A	A	A	A	—	A	A	—	D	C	D	A
Oil, Creosote$_2$	—	A	A	—	A	—	—	—	—	—	—	—	—	—	—	—	D	—	—	—	D	—	A	A	—	A	A	—	B	D	D	A
Oil, Diesel Fuel (2D,3D,4D,5D)	—	A	A	—	A	—	—	A	—	—	—	—	—	—	—	D	A	A	—	—	A	A	A	A	—	A	A	—	D	D	D	A
Oil, Fuel (1,2,3,5A,5B,6)	—	A	A	—	A	A	A	A	—	—	—	—	A	—	A	D	A	—	—	—	B	—	A	A	—	A	B	—	D	D	D	A
Oil, Ginger	—	A	A	—	—	—	—	—	—	—	—	—	—	—	—	—	A	—	—	—	—	—	A	A	—	A	A	—	A	—	—	A
Oil, Hydraulic(See Hydraulic)																																
Oil, Lemon	—	A	A	—	—	—	—	—	—	—	—	—	—	—	—	—	A	—	—	—	D	—	A	A	—	A	—	—	D	—	—	A
Oil, Linseed	—	A	A	A	A	—	—	A	—	A	—	—	A	B	—	—	A	A	C	—	A	—	A	A	A	A	A	—	D	D	D	A
Oil, Mineral	A	A	A	A	A	—	—	A	—	A	B	—	A	—	—	B	A	A	—	—	B	A	A	A	A	A	A	—	B	D	D	A
Oil, Olive	A	A	A	—	A	—	—	B	—	A	B	—	A	—	A	—	A	A	—	—	A	—	A	A	—	A	A	C	B	—	D	A
Oil, Orange	—	A	A	—	—	—	—	—	—	—	—	—	—	—	A	—	A	A	—	—	A	—	A	A	—	A	A	—	D	—	—	A
Oil, Palm	—	A	A	—	A	—	—	B	—	—	—	—	A	—	—	—	A	A	—	—	—	—	A	A	—	A	A	—	D	—	—	A
Oil, Peanut$_3$	—	A	A	—	A	—	—	A	—	A	—	—	A	—	—	—	A	—	—	—	D	—	A	A	—	A	A	—	D	—	D	A
Oil, Peppermint$_2$	—	A	A	—	—	—	—	A	—	—	—	—	—	—	—	—	A	—	—	—	D	—	A	A	—	A	D	—	D	—	—	A
Oil, Pine	A	A	A	—	A	—	—	D	—	C	B	—	A	—	A	—	A	—	—	—	—	—	A	A	—	A	A	—	D	—	D	A
Oil, Rape Seed	—	A	A	—	—	—	—	A	—	—	—	—	A	—	—	—	A	—	—	—	—	—	A	A	—	A	B	—	D	—	D	A
Oil, Rosin	—	A	A	—	A	—	—	—	—	—	—	—	—	—	—	—	A	A	—	—	A	—	A	A	—	A	A	—	—	—	—	A
Oil, Sesame Seed	—	A	A	—	A	—	—	A	—	A	—	—	A	—	—	—	A	—	—	—	—	—	A	A	—	A	A	—	D	—	—	A
Oil, Silicone	—	A	A	—	—	—	—	A	—	A	—	—	—	—	—	A	A	A	—	—	A	—	A	A	A	A	A	—	A	—	A	A
Oil, Soybean	—	A	A	—	A	—	—	B	—	A	—	—	A	—	—	—	A	A	—	—	A	—	A	A	—	A	A	—	D	—	D	A
Oil, Sperm	—	A	A	—	—	—	—	A	—	—	—	—	A	—	—	—	A	—	—	—	—	—	A	A	—	A	A	—	D	—	—	A
Oil, Tanning	—	A	A	—	—	—	—	—	—	—	—	—	—	—	—	—	A	—	—	—	—	—	A	A	—	A	A	—	D	—	—	A
Oil, Turbine	—	A	A	—	A	—	—	A	—	A	—	—	A	—	—	—	A	—	C	—	—	—	A	A	—	A	A	—	D	—	D	A
Oleic Acid	B	A	A	B	B	—	B	B	C	C	C	—	A	C	A	C	B	A	B	D	C	—	A	A	—	D	B	D	D	D	D	A

Chemical Resistance Chart

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	Titanium	Hastelloy C	Cast Bronze	Brass	Cast Iron	Carbon Steel	Kynar	PVC(Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cycolac (ABS)	Polyethylene	Polypropylene	Ryton	Carbon	Ceramic	Ceramagnet"A"	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene	Rubber (Natural)	Epoxy
Oleum 25%	—	—	—	—	—	—	A	—	—	—	—	B	D	—	A	D	—	—	—	—	—	—	—	A	—	A	D	D	D	D	—	D
Oleum	B	—	A	—	B	—	—	C	C	—	B	D	D	—	A	—	D	—	—	—	D	—	—	A	—	A	C	D	D	D	D	A
Oxalic Acid (cold)	C	A	B	A	C	C	B	B	C	D	D	—	A	B	A	C	C	D	—	A	A	—	A	A	—	A	B	C	B	A	C	A
Paraffin	A	A	A	A	A	—	—	A	—	B	B	A	A	—	A	B	A	A	B	—	A	—	A	A	—	A	A	—	—	—	—	A
Pentane	A	C	C	—	A	—	B	A	—	B	B	—	—	—	A	D	A	A	D	—	—	—	A	A	—	A	A	—	B	D	D	A
Perchloroethylene$_2$	B	A	A	—	A	—	—	C	—	B	B	A	—	—	A	D	A	—	D	—	D	A	A	A	—	A	C	D	D	D	D	A
Petrolatum	A	—	A	—	B	—	—	B	—	C	C	—	—	—	A	D	A	A	B	—	—	—	A	A	—	A	A	—	B	A	D	A
Phenol 10%	B	A	A	—	A	—	B	C	—	B	D	—	A	C	A	—	—	D	—	—	—	A	—	—	—	B	D	—	C	D	C	C
Phenol (Carbolic Acid)	B	A	A	A	B	C	A	B	D	D	D	A	A	C	A	C	D	D	—	D	B	A	A	D	A	A	D	—	D	D	D	B
Phosphoric Acid (40% Solution)	—	B	A	A	D	A	A	D	D	D	—	—	A	B	A	A	D	D	C	B	A	A	B	C	D	A	D	—	D	B	C	A
Phosphoric Acid (40% - 100% Solution)	—	C	B	B	D	B	A	D	D	D	—	—	A	B	A	A	D	D	D	C	A	A	B	D	D	A	D	—	D	B	C	C
Phosphoric Acid (Crude)	—	D	C	C	D	C	A	D	D	D	D	A	—	—	A	—	D	D	D	C	—	A	C	D	—	A	D	—	D	B	—	A
Phosphoric Anhydride (Dry or Moist)	—	A	A	—	—	—	—	—	D	—	—	—	D	D	A	—	—	—	—	—	—	—	A	—	—	D	D	—	D	—	A	—
Phosphoric Anhydride (Molten)	—	A	A	—	D	—	—	D	D	—	—	—	D	—	A	—	—	A	—	D	—	—	—	—	—	D	C	—	D	—	D	A
Photographic (Developer)	—	C	A	C	C	A	A	—	—	D	—	—	A	—	—	A	C	—	—	B	A	—	A	A	—	A	A	—	A	—	—	A
Phthalic Anhydride	B	A	B	—	B	—	A	B	—	C	C	—	—	—	A	—	—	A	—	—	—	—	—	—	—	A	C	—	—	—	—	—
Picric Acid	B	A	A	—	C	—	A	D	D	D	D	—	A	A	A	—	—	A	—	A	—	—	—	—	—	A	A	D	A	—	A	A
Plating Solutions																																
Antimony Plating 130°F	—	—	A	—	—	A	A	—	—	—	—	—	A	—	A	A	—	D	—	—	A	—	—	A	—	A	A	D	A	—	—	B
Arsenic Plating 110°F	—	—	A	—	—	A	A	—	—	—	—	—	A	—	A	A	—	A	—	—	A	—	—	C	—	A	A	D	A	—	—	B
Brass Plating																																
Regular Brass Bath 100°F	—	—	A	—	—	A	A	—	—	—	—	—	A	—	A	A	—	A	—	—	A	—	—	C	—	A	A	D	A	—	—	B
High Speed Brass Bath 110°F	—	—	A	—	—	A	A	—	—	—	—	—	A	—	A	A	—	A	—	—	A	—	—	D	—	A	A	D	A	—	—	B
Bronze Plating																																
Copper Cadmium Bronze Bath R.T.	—	—	A	—	—	A	A	—	—	—	—	—	A	—	A	A	—	A	—	—	A	—	—	C	—	A	A	D	A	—	—	B
Copper-Tin Bronze Bath 160°F	—	—	A	—	—	A	A	—	—	—	—	—	D	—	A	A	—	A	—	—	A	—	—	D	—	A	A	D	B	—	—	C
Copper-Zine Bronze Bath100°F	—	—	A	—	—	A	A	—	—	—	—	—	A	—	A	A	—	A	—	—	A	—	—	C	—	A	A	—	A	—	—	B
Cadmium Plating																																
Cyanide Bath 90°F	—	—	A	—	—	A	A	—	—	—	—	—	A	—	A	A	—	A	—	—	A	—	—	C	—	A	A	—	A	—	—	B
Fluoborate Bath 100°F	—	—	A	—	—	D	A	—	—	—	—	—	A	—	A	A	—	D	—	—	A	—	—	D	—	A	B	—	C	—	—	B
Chromium Plating																																
Chromic-Sulfuric Bath 130°F	—	—	C	—	—	A	A	—	—	—	—	—	A	—	A	D	—	D	—	—	A	—	—	A	—	C	D	—	D	—	—	D
Fluosilicate Bath 95°F	—	—	C	—	—	C	A	—	—	—	—	—	A	—	A	D	—	D	—	—	A	—	—	B	—	C	D	—	D	—	D	D
Fluoride Bath 130 °F	—	—	D	—	—	C	A	—	—	—	—	—	A	—	A	D	—	D	—	—	A	—	—	B	—	C	D	—	D	—	—	D
Black Chrome Bath 115°F	—	—	C	—	—	A	A	—	—	—	—	—	A	—	A	D	—	D	—	—	A	—	—	A	—	C	D	—	D	—	—	D
Barrel Chrome Bath 95°F	—	—	D	—	—	C	A	—	—	—	—	—	A	—	A	D	—	D	—	—	A	—	—	A	—	C	D	—	D	—	—	D
Copper Plating (Cyanide)																																
Copper Strike Bath 120°F	—	—	—	—	A	A	A	—	—	—	—	—	—	—	A	A	—	—	—	—	—	—	—	C	—	B	—	—	A	—	—	—
Rochelle Salt Bath 150°F	—	—	A	—	—	A	A	—	—	—	—	—	D	—	A	A	—	A	—	—	A	—	—	D	—	A	A	—	B	—	—	C
High Speed Bath 180°F	—	—	A	—	—	A	A	—	—	—	—	—	D	—	A	A	—	A	—	—	A	—	—	D	—	A	A	—	B	—	—	C
Copper Plating (Acid)																																
Copper Sulfate Bath R.T.	—	—	D	—	—	A	A	—	—	—	—	—	A	—	A	A	—	D	—	—	A	—	—	D	—	A	A	—	A	—	—	D
Copper Fluoborate Bath 120°F	—	—	D	—	—	D	A	—	—	—	—	—	A	—	A	A	—	D	—	—	A	—	—	D	—	A	B	—	C	—	—	D
Copper (Misc.)																																
Copper Pyrophosphate 140°F	—	—	A	—	—	A	A	—	—	—	—	—	A	—	A	A	—	A	—	—	A	—	—	B	—	A	A	—	A	—	—	B
Copper (Electroless) 140°F	—	—	—	—	—	—	—	D	—	—	—	—	A	—	A	A	—	A	—	—	A	—	—	D	—	A	D	—	D	—	—	B
Gold Plating																																
Cyanide 150°F	—	—	A	—	—	A	A	C	—	—	—	—	D	—	A	A	—	A	—	—	A	—	—	B	—	A	A	—	A	—	—	D
Neutral 75°F	—	—	C	—	—	A	A	—	—	—	—	—	A	—	A	A	—	A	—	—	A	—	—	A	—	A	A	—	A	—	—	A
Acid 75°F	—	—	C	—	—	A	A	—	—	—	—	—	A	—	A	A	—	A	—	—	A	—	—	A	—	A	A	—	A	—	—	A
Indium Sulfamate Plating	—	—	C	—	—	A	A	—	—	—	—	—	A	—	A	A	—	D	—	—	A	—	—	A	—	A	A	—	A	—	—	A
Iron Plating																																
Ferrous Chloride Bath 190°F	—	—	D	—	—	A	D	—	—	—	—	—	D	—	A	A	—	D	—	—	C	—	—	A	—	A	B	—	D	—	—	D
Ferrous Sulfate Bath 150°F	—	—	C	—	—	A	A	—	—	—	—	—	D	—	A	A	—	D	—	—	A	—	—	A	—	A	A	—	B	—	—	D
Ferrous Am. Sulfate Bath 150°F	—	—	C	—	—	A	A	—	—	—	—	—	D	—	A	A	—	D	—	—	A	—	—	A	—	A	A	—	B	—	—	D
Sulfate-Chloride Bath 160°F	—	—	D	—	—	A	D	—	—	—	—	—	D	—	A	A	—	D	—	—	A	—	—	A	—	A	B	—	C	—	—	D
Fluoborate Bath 145°F	—	—	D	—	—	D	B	—	—	—	—	—	D	—	A	A	—	D	—	—	A	—	—	D	—	A	B	—	C	—	—	D
Sulfamate 140°F	—	—	D	—	—	A	B	—	—	—	—	—	A	—	A	A	—	D	—	—	A	—	—	A	—	A	A	—	A	—	—	A
Lead Fluoborate Plating	—	—	C	—	—	D	A	—	—	—	—	—	A	—	A	A	—	D	—	—	A	—	—	D	—	A	B	—	C	—	—	A
Nickel Plating																																
Watts Type 115-160°F	—	—	C	—	—	A	A	—	—	—	—	—	D	—	A	A	—	A	—	—	A	—	—	A	—	A	A	—	A	—	—	D
High Chloride 130-160°F	—	—	C	—	—	A	A	—	—	—	—	—	D	—	A	A	—	D	—	—	A	—	—	A	—	A	A	—	B	—	—	D

Chemical Resistance Chart

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	Titanium	Hastelloy C	Cast Bronze	Brass	Cast Iron	Carbon Steel	Kynar	PVC(Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cycolac (ABS)	Polyethylene	Polypropylene	Ryton	Carbon	Ceramic	Ceramagnet"A"	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene	Rubber (Natural)	Epoxy
Fluoborate 100-170°F	—	—	C	—	—	D	A	D	—	—	—	—	D	—	A	A	—	D	—	—	A	—	—	D	—	A	B	—	C	—	—	D
Sulfamate 140°F	—	—	C	—	—	A	A	—	—	—	—	—	A	—	A	A	—	A	—	—	A	—	—	A	—	A	A	—	A	—	—	A
Electroless 200°F	—	—	—	—	—	—	—	—	—	—	—	—	D	—	A	D	—	D	—	—	D	—	—	A	—	A	D	—	D	—	—	B
Rhodium Plating 120°F	—	—	D	—	—	D	D	—	—	—	—	—	A	—	A	A	D	D	—	—	A	—	—	A	—	A	A	—	B	—	—	A
Silver Plating 80-120°F	—	—	A	—	—	A	A	—	—	—	—	—	A	—	A	A	—	A	—	—	A	—	—	B	—	A	A	—	A	—	—	A
Tin-Fluoborate Plating 100°F	—	—	C	—	—	D	A	—	—	—	—	—	A	—	A	A	—	D	—	—	A	—	—	D	—	A	B	—	C	—	—	A
Tine-Lead Plating 100°F	—	—	C	—	—	D	A	—	—	—	—	—	A	—	A	A	—	D	—	—	A	—	—	D	—	A	B	—	C	—	—	A
Zinc Plating																																
Acid Chloride 140°F	—	—	D	—	—	A	D	—	—	—	—	—	A	—	A	A	—	D	—	—	A	—	—	A	—	A	A	—	A	—	—	A
Acid Sulfate Bath 150°F	—	—	C	—	—	A	A	—	—	—	—	—	D	—	A	A	—	D	—	—	A	—	—	A	—	A	A	—	B	—	—	D
Acid Fluoborate Bath R.T.	—	—	—	C	—	D	—	—	—	—	—	—	A	—	A	A	—	D	—	—	A	—	—	D	—	A	B	—	C	—	—	A
Alkaline Cyanide Bath R.T.	—	—	—	A	—	A	A	—	—	—	—	—	A	—	A	A	—	A	—	—	A	—	—	D	—	A	A	—	A	—	—	A
Potash	—	A	—	A	C	—	A	C	—	B	—	—	A	B	—	A	B	A	—	B	A	—	A	A	A	A	A	—	B	—	B	A
Potassium Bicarbonate	—	A	—	B	C	A	B	B	—	D	—	A	A	—	A	A	C	A	C	B	A	A	A	A	—	A	A	—	A	—	B	A
Potassium Bromide	A	A	—	B	C	A	B	C	—	D	D	A	A	—	A	A	A	C	—	B	A	C	A	A	—	A	A	—	A	A	B	A
Potassium Carbonate	B	A	—	A	C	A	A	C	—	B	B	A	A	B	A	A	B	A	—	B	A	A	A	A	A	A	B	—	A	—	B	A
Potassium Chlorate	B	A	A	A	B	A	B	B	—	B	B	A	A	B	A	A	B	D	—	B	A	A	A	A	—	A	A	—	A	—	B	A
Potassium Chloride	C	A	A	B	B	A	A	C	C	B	B	A	A	A	A	A	A	B	C	B	A	A	A	A	—	A	A	—	A	A	A	A
Potassium Chromate	—	—	B	B	A	—	B	A	—	A	—	—	A	—	—	A	C	—	—	B	—	A	A	D	—	A	A	—	A	—	B	C
Potassium Cyanide Solutions	B	A	B	A	D	A	A	D	—	B	B	A	A	—	A	A	C	A	—	B	A	A	C	A	—	B	A	—	A	A	A	A
Potassium Dichromate	B	A	A	A	A	A	B	C	—	B	C	A	A	—	A	A	C	D	—	B	A	A	A	A	—	B	A	—	A	A	A	A
Potassium Ferrocyanide	B	A	—	A	C	—	B	A	—	—	C	—	A	—	A	—	—	A	—	A	—	—	—	—	—	—	D	—	—	—	A	A
Potassium Hydroxide (50%)	A	B	B	B	D	C	A	D	D	C	A	D	A	B	A	A	D	A	C	B	A	A	—	D	A	D	B	C	A	A	C	A
Potassium Nitrate	B	A	B	A	B	A	B	B	—	—	B	A	A	C	A	A	B	C	—	B	A	C	A	A	—	B	A	—	A	A	A	A
Potassium Permanganate	B	A	B	B	B	B	B	B	—	B	B	A	A	—	A	A	C	D	C	B	B	A	A	A	—	B	A	—	A	—	B	B
Potassium Sulfate	B	A	B	B	A	A	A	B	B	B	B	A	A	A	A	A	B	C	—	B	A	A	A	A	—	A	A	C	A	A	C	A
Potassium Sulfide	A	A	—	A	B	—	B	B	—	B	B	—	A	—	A	—	—	—	—	—	—	—	—	—	—	—	A	—	—	—	—	—
Propane (Liquified)$_{12}$	A	A	—	A	A	—	—	A	A	—	B	—	D	—	A	D	A	A	—	—	D	—	A	A	—	A	A	D	B	D	D	A
Propylene Glycol	B	B	—	A	A	—	—	B	—	B	B	—	—	—	A	—	B	B	B	B	—	—	A	A	—	A	A	—	C	—	—	A
Pyridine	—	C	—	B	B	—	—	—	—	B	A	D	—	D	A	D	D	—	—	C	B	A	A	A	—	D	D	—	D	B	D	A
Pyrogallic Acid	B	A	A	A	B	—	A	B	—	B	B	—	A	—	A	—	D	A	—	—	—	—	A	A	—	A	A	—	—	—	—	A
Rosins	A	A	A	A	A	—	B	A	C	—	C	—	—	—	A	—	B	A	—	—	A	—	A	A	—	—	A	—	—	—	—	A
Rum	—	A	—	A	—	—	—	—	—	—	—	—	A	—	—	A	A	A	—	—	A	—	A	A	—	A	A	—	A	—	—	A
Rust Inhibitors	—	A	—	A	—	—	—	A	—	A	—	—	—	—	—	—	A	—	—	—	A	—	A	A	—	A	A	—	C	—	—	A
Salad Dressing	—	A	—	A	B	—	—	B	—	D	—	—	A	—	—	A	A	A	—	—	A	—	A	A	—	A	A	—	—	—	—	A
Sea Water	A	A	C	A	C	A	—	C	—	—	D	—	A	—	A	A	A	A	—	B	A	—	A	A	A	A	A	B	B	A	A	A
Shellac (Bleached)	A	A	—	A	A	—	—	A	B	B	A	—	—	—	A	—	A	A	—	—	A	—	—	A	—	—	A	—	—	—	—	A
Shellac (Orange)	A	A	—	A	A	—	—	A	C	C	A	—	—	—	A	—	A	A	—	—	A	—	—	A	—	—	A	—	—	—	—	A
Silicone	—	B	—	A	B	—	—	A	—	—	—	—	—	—	—	A	A	A	—	—	A	—	A	A	—	A	A	B	A	A	A	A
Silver Bromide	—	C	C	B	D	—	—	—	—	—	—	—	—	—	—	A	C	—	—	—	—	—	A	—	—	—	—	—	—	—	—	A
Silver Nitrate	B	A	B	A	D	A	A	D	—	D	D	A	A	B	A	A	C	A	—	B	A	—	A	A	—	A	C	—	A	C	A	A
Soap Solutions$_1$	A	A	A	A	C	A	B	B	—	B	A	—	B	B	A	A	A	A	—	B	A	A	A	A	A	A	A	B	B	—	C	A
Soda Ash (See Sodium Carbonate)																																
Sodium Acetate	B	A	A	B	B	A	—	B	—	C	C	A	A	—	A	A	B	A	—	B	A	—	A	A	—	D	D	—	C	—	A	A
Sodium Aluminate	B	—	—	A	C	B	B	B	—	—	C	—	—	—	A	A	B	A	—	—	—	A	A	A	—	A	A	—	A	A	B	A
Sodium Bicarbonate	B	A	A	A	A	A	—	B	A	C	C	A	A	B	A	A	B	A	B	B	A	A	A	A	A	A	A	C	A	A	A	A
Sodium Bisulfate	A	A	—	A	D	B	B	C	C	D	D	A	A	B	A	A	B	C	C	B	A	A	A	A	—	B	A	C	A	—	A	A
Sodium Bisulfite	—	A	—	A	A	A	B	C	—	D	—	A	A	B	A	A	B	D	B	B	A	A	A	A	—	A	A	C	A	—	A	A
Sodium Borate	B	A	—	A	C	—	A	A	—	C	C	—	C	—	A	—	—	A	—	A	—	—	—	—	—	A	—	B	A	—	—	—
Sodium Carbonate	B	A	B	B	C	A	A	B	B	B	B	A	A	B	A	A	A	A	C	B	A	A	B	A	—	A	A	—	A	A	A	A
Sodium Chlorate	B	A	—	A	B	A	B	B	—	—	C	A	A	B	A	A	D	A	—	B	A	A	A	A	—	A	D	—	A	—	A	A
Sodium Chloride	B	A	C	B	C	A	A	B	C	B	C	A	A	B	A	A	A	A	B	B	A	A	A	A	A	A	A	C	A	A	B	A
Sodium Chromate	A	A	A	—	D	—	B	B	—	B	B	—	—	—	A	A	D	A	—	—	A	A	A	B	—	B	A	—	A	—	—	C
Sodium Cyanide	B	A	—	A	D	A	—	D	D	B	B	A	A	—	A	A	D	C	—	B	A	A	A	A	—	A	A	D	A	A	A	A
Sodium Fluoride	B	C	—	C	C	A	A	C	—	D	D	—	D	D	A	—	—	A	—	C	—	—	—	—	—	B	D	—	D	—	D	A
Sodium Hydrosulfite	—	—	—	—	A	—	A	C	—	—	—	—	C	A	A	—	—	A	—	—	—	—	—	A	—	A	—	—	A	—	A	—
Sodium Hydroxide/Caustic Soda (20%)	—	A	A	A	D	A	A	C	D	A	—	A	A	B	A	A	D	C	C	B	A	A	C	D	A	A	A	D	B	A	A	A
Sodium Hydroxide/Caustic Soda (50%)	—	A	B	—	D	A	A	C	D	B	—	D	A	B	A	A	D	C	C	C	A	B	C	D	A	D	D	D	C	—	A	A
Sodium Hydroxide/Caustic Soda (80%)	—	A	D	—	D	A	B	C	D	C	—	—	A	B	A	A	D	C	C	C	A	B	C	D	A	B	D	D	C	—	B	A
Sodium Hypochlorite/Bleach$_3$ (to 20%)	—	C	C	C	C	A	A	D	D	D	—	—	A	B	A	A	D	A	—	B	C	C	D	A	B	A	C	D	D	B	C	B
Sodium Hypochlorite/Bleach	D	—	D	—	D	A	A	D	—	D	D	A	A	—	A	A	—	A	—	—	C	C	—	D	—	B	B	C	A	—	—	A
Sodium Hyposulfate	—	A	A	—	D	—	—	D	—	—	—	—	—	—	A	—	—	—	—	—	—	—	—	—	—	—	—	—	C	—	C	C

Chemical Resistance Chart

	302 Stainless Steel	304 Stainless Steel	316 Stainless Steel	440 Stainless Steel	Aluminum	Titanium	Hastelloy C	Cast Bronze	Brass	Cast Iron	Carbon Steel	Kynar	PVC(Type 1)	Tygon (E-3606)	Teflon	Noryl	Polyacetal	Nylon	Cycolac (ABS)	Polyethylene	Polypropylene	Ryton	Carbon	Ceramic	Ceramagnet"A"	Viton	Buna N (Nitrile)	Silicon	Neoprene	Ethylene Propylene	Rubber (Natural)	Epoxy
Sodium Metaphosphate$_2$	A	—	A	—	A	—	—	C	C	B	B	—	—	—	A	—	B	A	—	—	D	—	A	A	—	A	A	—	B	A	A	A
Sodium Metasilicate	A	—	A	—	B	—	—	B	—	C	C	—	—	—	A	—	D	—	—	—	—	—	A	—	—	A	A	D	A	—	—	A
Sodium Nitrate	B	A	A	A	A	A	B	B	C	A	B	A	A	B	A	A	B	A	—	B	A	—	A	A	A	D	C	D	B	A	C	A
Sodium Perborate	B	—	C	—	B	—	—	C	C	B	B	—	—	—	A	A	B	A	—	—	A	—	A	A	—	A	B	D	B	A	C	A
Sodium Peroxide	B	A	A	—	C	—	B	C	C	D	C	—	A	—	A	—	D	D	—	—	—	—	A	A	—	A	C	D	B	A	C	A
Sodium Polyphosphate (Mono, Di,Tribasic)	—	A	A	—	D	A	A	C	—	—	—	—	—	—	A	A	B	—	—	—	—	—	A	A	—	A	A	—	D	A	A	A
Sodium Silicate	B	A	B	A	C	A	B	C	C	—	B	—	A	B	A	A	C	A	—	—	A	—	A	A	—	A	A	—	A	A	A	A
Sodium Sulfate	B	A	A	C	B	A	B	B	B	A	B	—	A	—	A	A	B	A	—	B	A	A	A	A	—	A	A	—	A	A	C	A
Sodium Sulfide	B	A	B	—	D	A	B	D	D	A	B	—	A	B	A	A	B	A	—	B	A	A	A	A	—	A	C	—	A	A	C	A
Sodium Sulfite	—	C	C	—	C	A	A	C	—	A	—	—	A	A	A	—	—	D	—	A	—	—	A	A	—	A	A	—	A	—	A	A
Sodium Tetraborate	—	—	A	—	—	—	—	—	—	—	—	—	A	—	—	A	B	—	—	—	—	—	A	A	—	A	A	—	—	—	—	A
Sodium Thiosulphate ("Hypo")	A	A	A	—	B	A	—	D	D	C	B	—	A	—	A	A	C	A	—	—	A	A	A	A	—	A	B	—	A	A	C	A
Sorghum	—	A	A	—	—	—	—	—	—	A	—	—	—	—	—	—	A	A	—	—	—	—	A	A	—	A	A	—	A	—	—	A
Soy Sauce	—	A	A	—	A	—	—	A	—	D	—	—	—	—	—	A	A	A	—	—	—	—	A	A	—	A	A	—	A	—	D	A
Stannic Chloride	D	D	D	—	D	A	B	D	—	D	D	A	A	—	A	A	C	A	—	B	A	—	—	A	—	A	A	D	A	A	A	A
Stannic Fluoborate	—	—	A	—	—	—	—	—	—	D	—	—	—	—	—	A	C	—	—	—	—	—	—	A	—	A	A	—	A	—	—	A
Stannous Chloride	D	D	C	—	D	A	A	D	—	D	D	—	A	A	A	—	—	D	—	A	—	—	—	—	—	B	C	D	D	—	A	A
Starch	B	A	A	—	A	—	—	B	—	C	C	—	A	—	A	A	A	A	—	B	—	—	A	A	—	A	A	—	A	—	—	A
Stearic Acid$_2$	B	A	A	A	B	A	A	C	C	C	C	A	A	B	A	A	A	A	—	B	—	—	A	A	A	A	B	D	B	B	C	A
Stoddard Solvent	A	A	A	A	A	A	A	A	A	B	B	A	A	D	A	D	A	A	B	D	D	A	A	A	—	A	B	D	D	D	D	A
Styrene	A	A	A	—	A	—	—	A	—	—	A	—	—	—	A	A	A	—	—	—	—	—	A	A	—	B	D	D	D	D	D	A
Sugar (Liquids)	A	A	A	A	A	—	A	A	—	B	B	—	—	—	A	A	A	A	B	—	A	—	A	A	A	A	A	—	B	—	A	A
Sulfate Liquors	—	C	C	—	B	—	A	C	—	—	—	—	—	—	—	—	D	—	—	—	A	—	A	A	—	—	—	—	C	—	—	A
Sulfur Chloride	—	D	D	D	D	—	—	C	D	—	—	—	A	C	A	A	D	A	—	A	D	—	A	C	—	A	D	—	D	D	D	C
Sulfur Dioxide$_2$	—	A	A	C	A	A	B	B	—	—	—	B	D	B	A	D	B	D	D	C	D	A	A	A	—	D	D	C	B	A	D	A
Sulfur Dioxide (dry)	A	A	A	—	A	—	A	A	C	A	B	—	D	—	A	—	—	A	—	D	—	—	A	A	—	D	—	—	D	—	D	D
Sulfur Trioxide (dry)	A	A	C	—	A	—	—	B	—	B	B	—	A	B	A	D	D	D	—	—	—	—	B	A	—	A	D	—	D	B	C	A
Sulfuric Acid (to 10%)	—	D	C	C	C	A	A	D	D	D	—	A	A	B	A	A	D	D	B	B	A	A	A	A	—	A	C	—	D	D	C	A
Sulfuric Acid (10%-75%)$_2$	—	D	D	D	D	C	B	D	D	D	—	A	A	B	A	B	D	D	B	C	A	B	A	A	C	A	D	—	D	D	D	B
Sulfuric Acid (75%-100%)	—	—	D	—	—	D	B	—	D	—	—	A	B	—	A	A	—	D	—	—	B	C	—	A	—	A	D	—	D	—	—	D
Sulfurous Acid	C	C	B	C	C	A	B	D	—	D	D	—	A	B	A	A	D	D	—	B	A	—	B	A	—	A	C	D	B	B	C	A
Sulfuryl Chloride	—	—	—	—	—	—	—	—	—	—	—	—	A	—	A	—	—	—	—	—	—	—	—	A	—	—	—	—	—	—	—	A
Syrup	—	A	A	A	A	—	—	D	—	—	—	—	A	—	—	A	A	A	B	—	A	—	A	A	A	A	A	—	B	—	A	A
Tallow	—	A	A	—	A	—	—	—	—	—	—	—	—	—	—	A	A	A	—	C	—	—	A	A	—	A	A	—	—	—	—	A
Tannic Acid	B	A	A	A	C	A	B	B	—	C	C	A	A	B	A	A	B	D	—	B	A	—	A	A	A	A	D	C	A	A	A	A
Tanning Liquors	—	A	A	—	C	A	A	A	—	—	—	—	A	B	A	—	B	—	—	—	A	—	A	A	—	A	C	—	—	—	—	A
Tartaric Acid	B	A	B	B	C	A	B	A	C	D	D	A	A	B	A	A	B	A	—	B	A	—	A	A	—	A	D	C	A	—	A	A
Tetrachlorethane	—	—	A	—	—	A	A	—	—	—	—	—	D	—	A	D	A	A	—	—	A	—	A	A	—	A	D	—	—	D	D	A
Tetrahydrofuran	—	A	A	—	D	—	—	D	—	D	A	D	D	—	A	D	A	A	—	D	C	A	A	A	—	D	D	—	D	B	D	A
Toluene, Toluol$_3$	A	A	A	—	A	A	A	A	A	A	A	A	D	D	A	D	A	A	D	D	D	A	A	A	A	C	D	D	D	D	D	A
Tomato Juice	A	A	A	—	A	—	—	C	—	C	C	—	—	—	A	A	B	A	B	—	A	A	A	A	—	A	A	—	A	—	—	A
Trichlorethane	—	C	A	—	C	A	A	C	—	C	—	—	—	—	A	D	A	—	—	—	—	—	A	A	—	A	D	D	D	D	D	A
Trichlorethylene$_2$	B	A	A	—	B	A	A	B	A	C	B	A	D	—	A	D	A	C	D	D	D	C	A	A	C	A	D	D	D	D	D	A
Trichloropropane	—	—	A	—	—	—	—	A	—	—	—	—	—	—	—	D	A	—	D	—	—	—	A	A	—	A	A	—	A	—	—	A
Tricresylphosphate	—	—	A	—	—	B	A	A	—	—	—	—	D	—	A	C	C	—	—	—	—	—	A	A	—	B	D	—	D	A	—	A
Triethylamine	—	—	—	—	—	—	—	A	—	—	—	—	A	—	—	B	D	—	—	—	—	—	A	A	—	A	A	D	B	—	—	A
Turpentine$_3$	B	A	A	—	C	—	A	B	C	B	B	A	A	B	A	D	A	A	—	D	B	A	A	A	—	A	D	—	D	D	D	A
Urine	—	A	A	—	B	—	—	C	—	B	—	—	A	—	—	A	A	A	—	B	A	—	A	A	—	A	A	—	D	A	—	A
Vegetable Juice	—	A	A	—	A	—	—	C	—	D	—	—	—	—	—	A	A	A	—	—	—	—	A	A	—	A	A	B	D	—	D	A
Vinegar	A	A	A	A	D	A	A	B	B	C	D	A	A	—	A	A	B	A	B	B	A	A	A	A	A	A	C	—	B	A	C	A
Varniah (Use Viton for Aromatic)	A	A	A	A	A	—	—	A	B	—	C	—	—	—	A	D	A	A	—	—	A	—	A	A	A	A	B	C	D	—	D	A
Water, Acid, Mine	—	A	A	—	C	—	—	C	D	C	—	—	A	B	—	A	D	A	B	—	A	B	A	A	—	A	A	—	B	—	B	A
Water, Distilled, Lab Grade$_7$	—	A	A	—	B	—	—	A	—	D	—	—	A	B	A	A	A	A	A	—	A	A	A	A	A	A	A	—	B	A	A	A
Water, Fresh	A	A	A	—	A	—	—	A	C	B	D	—	A	B	A	A	A	A	A	A	A	A	A	A	A	A	A	—	B	A	A	A
Water, Salt	—	A	A	—	B	—	—	B	C	D	—	—	A	B	—	A	A	A	—	—	A	A	A	A	A	A	A	—	B	A	A	A
Weed Killers	—	A	A	—	C	—	—	C	—	—	—	—	—	—	—	—	A	A	—	—	—	—	—	A	A	—	A	B	—	C	—	A
Whey	—	A	A	—	B	—	—	—	—	—	—	—	—	—	—	—	A	—	—	—	—	—	A	A	—	A	A	—	—	—	—	A
Whiskey and Wines	A	A	A	A	D	—	—	B	B	D	D	—	A	—	A	A	A	A	—	B	A	—	A	A	—	A	A	B	A	A	A	A
White Liquor (Pulp Mill)	—	A	A	—	—	—	A	D	—	C	—	—	A	—	A	A	D	A	—	—	A	—	A	A	—	A	A	—	A	—	—	A
White Water (Paper Mill)	—	A	A	—	—	—	—	A	—	—	—	—	—	—	—	—	B	A	—	—	A	—	A	A	—	A	—	—	A	—	—	A
Xylene$_2$	A	A	A	—	A	—	A	A	A	A	B	A	D	—	A	D	A	A	D	D	D	A	A	A	A	A	D	D	D	D	D	A
Zinc Chloride	D	D	B	B	D	A	B	D	D	D	D	A	A	—	A	A	C	A	—	B	A	A	A	A	—	A	A	—	A	A	A	A
Zinc Hydrosulphite	—	—	A	—	D	—	—	D	—	D	—	—	—	—	—	A	C	—	—	—	—	A	A	A	—	—	A	—	A	A	—	A
Zine Sulfate	B	A	A	A	D	A	B	B	C	C	D	A	C	B	A	A	C	A	—	B	A	A	A	A	—	A	A	—	A	A	C	A