
Chemical resistance of COTENE

Introduction

The following document allows to determine the correlation between the chemical resistance performance of COTENE and a none-exhaustive list of substances.

The table in this document summarizes data obtained from the literature.

The evaluation is based on values obtained by immersion of the COTENE test specimens in the relevant fluid at 23 °C and 50 °C (and atmospheric pressure).

This document suggests a preliminary classification for the chemical resistance of COTENE. It should be used only as a general guideline on the possible use of these substances in contact with the COTENE, based on:

- a) temperatures of 23 °C and 50 °C
- b) the absence of internal and external mechanical stress
- c) good part manufacturing principles and procedures

Symbols used for the chemical resistance of the materials.

S	=	Satisfactory
L	=	Limited
NS	=	Not Satisfactory

MATERIAL	Temperature	
	23°C	50°C
Acetaldehyde	NS	NS
Acetic Acid, 5%	S	S
Acetic Acid, 10%	S	S
Acetic Acid, 50%	S	L
Acetic Acid, glacial	S	L
Acetic anhydride	S	S
Acetone	S	-
Acetylene Tetrabromide	NS	NS
Adipic Acid	S	S
Allyl Alcohol	L	L
Allyl Chloride	NS	NS
Aluminum Acetate	S	S
Aluminum Chloride	S	S
Aluminum Fluoride	S	S
Aluminum Hydroxide	S	S
Aluminum Oxide	S	S
Aluminum Potassium Sulfate	S	S
Aluminum Sulfate	S	S
Aluminum Sulfate, saturated	S	S
Aluminum Sodium Sulfate	S	S
Ammonia, 100% dry gas	S	S
Ammonia, liquid	S	S
Ammonium Acetate, saturated	S	S
Ammonium Bicarbonate	S	S
Ammonium Bifluoride, saturated	S	S
Ammonium Carbonate, saturated	S	S
Ammonium Chloride	S	S
Ammonium Fluoride, 10%	S	S
Ammonium Fluoride, saturated	S	S
Ammonium Hydroxide, 5%	S	S
Ammonium Hydroxide, 10%	S	S

MATERIAL	Temperature	
	23°C	50°C
Ammonium Hydroxide, 28%	S	S
Ammonium Metaphosphate	S	S
Ammonium Nitrate	S	S
Ammonium Sulfate	S	S
Ammonium Thiocyanate	S	S
Ammonium Thioglycolate	S	S
Amyl Acetate	NS	NS
Amyl Alcohol	L	L
Amyl Chloride	NS	NS
Amyl Phthalate	S	NS
Aniline	S	NS
Anthraquinone	S	S
Antimony Trichloride	S	S
Aqua Regia (3:1 HCl/HNO3)	NS	NS
Arsenic, conc.	S	S
Ascorbic Acid, 10%	S	S
Barium Bromide	S	S
Barium Carbonate	S	S
Barium Chloride	S	S
Barium Hydroxide	S	S
Barium Sulfate	S	S
Barium Sulfide	S	S
Beer	S	S
Benzaldehyde	L	NS
Benzene	NS	NS
Benzene Sulfonic Acid	S	S
Benzoic Acid	S	S
Benzyl Alcohol	NS	NS
Benzyl Acetate	S	NS
Bismuth Carbonate	S	S
Boric Acid	S	S

MATERIAL	Temperature	
	23°C	50°C
Bromic Acid	S	L
Bromine, liquid	NS	NS
Bromine, vapors 25%	NS	NS
Bromine, water 2%	NS	NS
Bromoacetic Acid	NS	NS
Bromobenzene	S	S
Bromoform	NS	NS
Bromo Toluene	NS	NS
Butadiene	NS	NS
Butane	S	-
Butanediol	S	L
Butter	S	S
n-Butyl Acetate	L	NS
n-Butyl Alcohol	S	S
sec-Butyl Alcohol	S	L
tert-Butyl Alcohol	S	L
Butyl Chloride	S	S
n-Butyric Acid	NS	NS
Butyraldehyde	NS	NS
Cadmium Bromide	S	S
Cadmium Cyanide	S	S
Calcium Bisulfide	S	S
Calcium Bromide	S	S
Calcium Carbonate	S	S
Calcium Chlorate	S	S
Calcium Chloride	S	S
Calcium Hydroxide	S	S
Calcium Nitrate, 50%	S	S
Calcium Oxide	S	S
Calcium Salicylate	S	S
Calcium Sulfate	S	S

MATERIAL	Temperature	
	23°C	50°C
Camphor Oil	NS	NS
Carbon Bisulfide	NS	NS
Carbon Dioxide	S	S
Carbon Monoxide	S	S
Carbon Tetrachloride	NS	NS
Carbonic Acid	S	S
Castor Oil USP	S	S
Caustic Potash	S	S
Caustic Soda	S	S
CELLOSOLVE Acetate	S	S
Cetyl Alcohol	S	L
Chloralhydrate	NS	NS
Chlorine, 100% dry gas	NS	NS
Chlorine, 10% moist air	NS	NS
Chlorine, liquid	NS	NS
Chlorine, 2%	S	L
Choroacetic Acid, powder	S	S
Chlorobenzene	NS	NS
Chloroform	NS	NS
o-Chlorophenol	NS	NS
Chloropropionic Acid	S	S
Chlorosulfonic Acid	NS	NS
Chromic Acid, 10%	S	S
Chromic Acid, 50%	S	S
Cider	S	S
Citric Acid, crystals	S	S
Citric Acid, 10%	S	S
Coconut Oil	S	S
Cod Liver Oil	S	S
Coffee, grounds	S	S
Coffee, instant	S	S

MATERIAL	Temperature	
	23°C	50°C
Copper Carbonate	S	S
Copper Chloride	S	S
Copper Cyanide	S	S
Copper Fluoride, 2%	S	S
Copper Nitrate	S	S
Copper Sulfate	S	S
Copper Sulfate, saturated	S	S
Corn Oil	S	S
Cottonseed Oil	S	S
Cresol	NS	NS
Cuprous Oxide	S	S
Cyclohexyl Alcohol	S	S
Cyclohexane	NS	NS
Cyclohexanone	S	NS
Decalin	NS	NS
Deacetone	S	S
Dextrin	S	S
Dextrose	S	S
Diazo Salts	S	S
Dibutyl Phthalate	S	S
o-Dichlorobenzene	NS	NS
p-Dichlorobenzene	NS	NS
Diethyl Ether	NS	NS
Diethyl Ketone	NS	NS
Diethyl Phthalate	S	NS
Diethylene Glycol	S	L
Diethylene Glycol Butyl Ether	S	S
Diglycolic Acid	S	S
Dimethylamine	NS	NS
Dimethyl Formamide	S	S
Diocetyl Phthlate	S	NS

MATERIAL	Temperature	
	23°C	50°C
Disodium Phosphate	S	S
Distilled Water	S	S
Ethers	S	NS
Ethyl Acetate, 100%	S	NS
Ethyl Alcohol, 40%	L	NS
Ethyl Alcohol, absolute	L	NS
Ethyl Alcohol, Formula 30 USP	L	NS
Ethyl Alcohol, 2-B-95%	L	NS
Ethyl Benzene	NS	NS
Ethyl Benzoate	NS	NS
Ethyl Chloride, gas	NS	NS
Ethyl Chloride, liquid	NS	NS
Ethyl Ether	NS	NS
Ethyl Lactate	NS	NS
Ethylene Bromide	NS	NS
Ethylene Chloride	NS	NS
Ethylene Chlorohydrin	NS	NS
Ethylene Dichloride	NS	NS
Ethylene Glycol	S	NS
Ethylene Oxide	S	L
Ethylene Trichloride	NS	NS
Ferric Ammonium Sulfate, crystals	S	S
Ferric Ammonium Sulfate, saturated	S	S
Ferric Chloride	S	S
Ferric Chloride, 40%	S	S
Ferric Nitrate	S	S
Ferric Sulfate	S	S
Ferric Sulfate, saturated	S	S
Ferrous Ammonium Citrate	S	S
Ferrous Chloride	S	S
Ferrous Chloride, saturated	S	S

MATERIAL	Temperature	
	23°C	50°C
Ferrous Sulfate	S	S
Ferrous Sulfate	S	S
Ferrous Sulfate, saturated	S	S
Fluoboric Acid	S	S
Fluorine, wet gas	NS	NS
Fluosilic Acid, 32%	S	L
Formaldehyde, 30%	S	L
Formic Acid, 100%	S	S
Fructose	S	S
Furfural, 100%	NS	NS
Furfuryl Alcohol	NS	NS
Gallic Acid, powder	S	S
Gallic Acid, saturated	S	L
Gasoline, regular	NS	NS
Gasoline, high octane	NS	NS
Glucose	S	S
Glycerine	S	S
Glycolic Acid, 30%	S	S
n-Heptane	S	L
2-Heptyl Alcohol	S	L
Hexachlorobenzene	S	S
Hexane	NS	NS
n-Hexyl Alcohol	S	S
2-Hexyl Alcohol	S	S
Hydrobromica Acid	S	S
Hydrobromic Acid, 40%	S	S
Hydrocyloric Acid, 1-5%	S	S
Hydrochloric Acid, 35% (conc.)	S	S
Hydrocyanic Acid	S	S
Hydrofluoric Acid, 48%	S	S
hydrogen 100%	S	S

MATERIAL	Temperature	
	23°C	50°C
Hydrogen Chloride, dry gas	S	S
Hydrogen Peroxide, 1%	S	S
Hydrogen Peroxide, 3%	S	S
Hydrogen Peroxide, 90%	L	S
Hydroquinone, powder	S	S
Hydroquinone, saturated	S	S
Hydroxylamine Sulfate	S	S
Hypochlorous Acid	S	S
Isobutyl Alcohol	S	S
Inks	S	S
Iodine, crystals	NS	NS
Iso-octane	NS	NS
Isopropyl Acetate	L	L
isopropyl Alcohol	L	NS
Isopropyl Benzene	L	NS
o-Isopropylphenol	NS	NS
p-Isopropylphenol	NS	NS
Kerosene	NS	NS
Lactic Acid, 3%	S	L
Lactic Acid, 10%	S	L
Lanolin	S	S
Lard	S	S
Lauryl Alcohol	S	L
Lauryl Chloride	L	-
Lead Acetate, crystals	S	S
Lead Acetate, saturated	S	S
Lead Arsenate	S	S
Lead Nitrate	S	S
Lead Sulfate	S	S
Leucine-dl, powder	S	S
Lime Juice, conc.	S	S

MATERIAL	Temperature	
	23°C	50°C
Linseed Oil, raw	L	NS
Lithium Bromide, saturated	S	S
Magnesium Bromide	S	S
Magnesium Carbonate	S	S
Magnesium Carbonate, saturated	S	S
Magnesium Chloride	S	S
Magnesium Chloride Sulfate	S	S
Magnesium Citrate	S	S
Magnesium Hydroxide	S	S
Magnesium Iodide, saturate	S	S
Magnesium Nitrate	S	S
Magnesium Sulfate	S	S
Maleic Acid, 25%	S	S
Margarine	S	S
Mercuric Chloride	S	S
Mercuric Chloride	S	S
Mercuric Chloride, saturated	S	S
Mercuric Cyanide	S	S
Mercurous Nitrate	S	S
Mercury	S	S
Mesityl Oxide	NS	NS
Methane	S	-
Methyl Alcohol	S	NS
Methyl Bromoacetate	NS	NS
Methyl Chloride	NS	NS
Methyl Ethyl Ketone	S	L
Methyl Isobutyl Ketone	L	L
Methyl Salicylate	NS	NS
Methyl Sulfate	S	S
Methyl Sulfuric Acid	S	S
Methylene Chloride	NS	NS

MATERIAL	Temperature	
	23°C	50°C
Methylene Chlorobromide	NS	NS
Milk	S	S
Mineral Oils	S	NS
Naphtha	NS	NS
Naphthalene, crystals	L	NS
Naphthalene, vapors	NS	NS
Natural Gas, wet	S	-
Nickel Chloride	S	S
Nickel Nitrate	S	S
Nickel Sulfate	S	S
Nicotine, dilute	S	S
Nitric Acid, 1%	S	S
Nitric Acid, 5%	S	S
Nitric Acid, 50%	L	L
Nitric Acid, fuming	NS	NS
Nitrobenzene	NS	NS
Nitrous Acid	NS	NS
Nitrous Oxide	S	-
n-Octane	S	S
n-Octyl Alcohol	S	S
Oleic Acid	L	L
Olive Oil	S	S
Oxalic Acid, powder	S	S
Oxalic Acid, saturate	S	S
Oxygen	S	L
Ozone	S	S
Palmitic Acid, powder	S	S
Palm Oil	S	S
Phenol, crystals	NS	NS
Phenoxyacetic Acid	S	S
Phenyl Hydrazine	NS	NS

MATERIAL	Temperature	
	23°C	50°C
Phenyl Hydrazine Hydrochloride	NS	NS
o-Phenylphenol	L	L
p-Phenylphenol	L	L
Phosphoric Acid, 1-5%	S	S
Phosphoric Acid, 10%	S	S
Phosphoric Acid, 50%	S	S
Phosphoric Anhydride	S	S
Phthalic Anhydride	S	S
Phosphorus Oxychloride	NS	NS
Phosphorous Pentachloride	NS	NS
Pine Oil	NS	NS
Plating Solution, brass	S	S
Plating Solution, cadmium	S	S
Plating Solution, copper	S	S
Plating Solution, gold	S	S
Plating Solution, lead	S	S
Plating Solution, nickel	S	S
Plating Solution, silver	S	S
Plating Solution, tin	S	S
Plating Solution, zinc	S	S
Potassium Bicarbonate	S	S
Potassium Bichromate	S	S
Potassium Borate	S	S
Potassium Bromate	S	S
Potassium Bromide, powder	S	S
Potassium Bromide, 3%	S	S
Potassium Bromide, saturated	S	S
Potassium Carbonate	S	S
Potassium Chlorate	S	S
Potassium Chloride	S	S
Potassium Chloride Sulfate	S	S

MATERIAL	Temperature	
	23°C	50°C
Potassium Chromate, 40%	S	S
Potassium Cyanide	S	S
Potassium Dichromate, saturated	S	S
Potassium Dichromate, 40%	S	S
Potassium Ferricyanide	S	S
Potassium Fluoride	S	S
Potassium Hydroxide	S	S
Potassium Hydroxide, 10%	S	S
Potassium Hydroxide, 50%	S	S
Potassium Iodide	S	S
Potassium Nitrate	S	S
Potassium Perborate	S	S
Potassium Perchlorate, 10%	S	S
Potassium Permanganate	S	S
Potassium Permanganate, 20%	S	S
Potassium Persulfate	S	S
Potassium Sulfate	S	S
Potassium Sulfate, saturated	S	S
Potassium Sulfide	S	S
Potassium Sulfide, saturated	S	S
Potassium Sulfite	S	S
Propane	NS	NS
Propargyl Alcohol	S	L
n-Propyl Alcohol	L	NS
Propyl Dichloride	NS	NS
Propylene Dichloride	NS	NS
Propylene Glycol	L	L
Pyridine	S	L
Resorcinol, powder	S	S
Resorcinol, saturated	S	S
Salicylic Acid, powder	S	S

MATERIAL	Temperature	
	23°C	50°C
Sea Water	S	S
Selenic Acid	S	S
Sewage	S	S
Silver Acetate	S	S
Silver Cyanide	S	S
Silver Nitrate	S	S
Silver Nitrate, saturated	S	S
Soap Solution, 10% Igepal	S	S
Sodium Acetate, powder	S	S
Sodium Acetate, saturated	S	S
Sodium Aluminum Sulfate	S	S
Sodium Aluminum Sulfate, saturated	S	S
Sodium Benzoate, powder	S	S
Sodium Benzoate, saturated	S	S
Sodium Bicarbonate, powder	S	S
Sodium Bicarbonate, saturated	S	S
Sodium Bisulfate	S	S
Sodium Bisulfate, saturated	S	S
Sodium Bisulfite	S	S
Sodium Bisulfite, saturated	S	S
Sodium Borate	S	S
Sodium Bromate	S	S
Sodium Bromate, 10%	S	S
Sodium Bromide, powder	S	S
Sodium Bromide, saturated	S	S
Sodium Carbonate, powder	S	S
Sodium Carbonate, 20%	S	S
Sodium Carbonate, saturated	S	S
Sodium Chlorate	S	S
Sodium Chloride	S	S
Sodium Chloride, saturated	S	S

MATERIAL	Temperature	
	23°C	50°C
Sodium Chloride Sulfate	S	S
Sodium Chloroacetate, powder	S	S
Sodium Cyanide	S	S
Sodium Dichromate	S	S
sodium Dichromate, saturated	S	S
Sodium Ferricyanide	S	S
Sodium Fluoride	S	S
Sodium Fluoride, saturated	S	S
Sodium Hydroxide	S	S
Sodium Hydroxide, 5%	S	S
Sodium Hydroxide, 10%	S	S
Sodium Hydroxide, 50%	S	S
Sodium Hypochlorite, 5% chlorine	S	L
Sodium Hypochlorite, 15% chlorine	L	NS
Sodium Nitrate	S	S
Sodium Nitrite	S	S
Sodium Perborate	S	S
Sodium Perborate, saturated	S	S
Sodium Peroxide	S	-
Sodium Phosphate	S	S
Sodium Phosphate, saturated	S	S
Sodium Silicate	S	S
Sodium Sulfate	S	S
Sodium Sulfate, saturated	S	S
Sodium Sulfide	S	S
sodium Sulfide, 25%	S	S
Sodium Sulfite	S	S
Sodium Sulfite, saturated	S	S
Soybean Oil	S	S
Stannic Chloride	S	S
Stannous Chloride	S	S

MATERIAL	Temperature	
	23°C	50°C
Stearic Acid, crystals	S	S
Strontium Bromide	S	S
Sucrose	S	S
Sulfur Chloride	NS	NS
Sulfur Dioxide, dry	S	S
Sulfur Dioxide, moist	L	L
Sulfur Dioxide, liquid @ 46 psi	NS	NS
Sulfuric Acid, 1-6%	S	S
Sulfuric Acid, 10%	S	S
Sulfuric Acid, 30%	S	L
Sulfuric Acid, 50%	S	L
Sulfuric Acid, fuming	NS	NS
Sulfurous Acid, concentrated	S	S
Tannic Acid, powder	S	S
Tannic Acid, saturated	S	S
Tartaric Acid, powder	S	S
Tartaric Acid, saturated	S	S
Tetrachloroethane	NS	NS
Tetrahydrofuran	NS	NS
Thioglycolic Acid	S	S
Thionyl Chloride	NS	NS
Titanium Tetrachloride	NS	NS
Toluene	NS	NS
1,2,4-Trichlorobenzene	NS	NS
Tributylphosphate	NS	NS
Trichloroethane	NS	NS
Trichloroethylene	NS	NS
2,4,5-Trichlorophenol	L	NS
Trisodium Phosphate, powder	S	S
Trisodium Phosphate, saturated	S	S
Turpentine	NS	NS

MATERIAL	Temperature	
	23°C	50°C
Urea, 0-30%	S	S
Urine	S	S
Vanilla Extract	S	S
Vinegar	S	S
Vinyl Chloride	NS	NS
Vinylidene Chloride	NS	NS
Water	S	S
Water, acid mine	S	S
Water, salt and sea	S	S
Wetting Agents	S	S
Whiskey	S	S
Wines	S	L
Xylene	L	NS
Yeast	S	S
Zinc Bromide	S	S
Zinc Carbonate	S	S
Zinc Carbonate, saturated	S	S
Zinc Chloride, powder	S	S
Zinc Chloride, saturated	S	S
Zinc Nitrate	S	S
Zinc Oxide	S	S
Zinc Oxide, saturated	S	S
Zinc Stearate	S	S
Zinc Sulfate	S	S
Zinc Sulfate, saturated	S	S