

# KYNAR (PVDF) Chemical Compatibility & Chemical Resistance Chart

## Explanation of Footnotes

1. Satisfactory to 72°F (22°C)
2. Satisfactory to 120°F (48°C)

## Ratings -- Chemical Effect

- **A = Excellent.**
- **B = Good** -- Minor Effect, slight corrosion or discoloration.
- **C = Fair** -- Moderate Effect, not recommended for continuous use. Softening, loss of strength, swelling may occur.
- **D = Severe Effect**, not recommended for ANY use.
- **N/A = Information not available.**

Chemical	Compatibility
Acetaldehyde	D-Severe Effect
Acetamide	C-Fair
Acetate Solvent	A-Excellent
Acetic Acid	C-Fair
Acetic Acid 20%	A-Excellent
Acetic Acid 80%	C-Fair
Acetic Acid Vapors	A-Excellent
Acetic Acid, Glacial	A <sup>1</sup> -Excellent
Acetic Anhydride	B <sup>1</sup> -Good
Acetone	D-Severe Effect
Acetone, 50% water	A-Excellent
Acetyl Chloride (dry)	A <sup>2</sup> -Excellent
Acetylene	A-Excellent
Acrylonitrile	A <sup>1</sup> -Excellent
Adipic Acid	A <sup>2</sup> -Excellent
Alcohols: Amyl	A-Excellent
Alcohols: Benzyl	A-Excellent
Alcohols: Butyl	A-Excellent
Alcohols: Diacetone	A <sup>1</sup> -Excellent
Alcohols: Methyl	A-Excellent
Alcohols: Propyl	A <sup>2</sup> -Excellent
Allyl Chloride	A-Excellent
Aluminum Acetate (saturated)	A-Excellent
Aluminum Chloride	A-Excellent
Aluminum Chloride 20%	A-Excellent
Aluminum Fluoride	A-Excellent
Aluminum Hydroxide	A-Excellent
Aluminum Nitrate	A <sup>2</sup> -Excellent
Aluminum Potassium Sulfate 10%	B-Good
Aluminum Sulfate	A-Excellent
Ammonia 10%	A-Excellent

Ammonia Nitrate	A-Excellent
Ammonia, anhydrous	A-Excellent
Ammonia, liquid	A-Excellent
Ammonium Bifluoride	A-Excellent
Ammonium Carbonate	A-Excellent
Ammonium Chloride	A-Excellent
Ammonium Fluoride 25%	A-Excellent
Ammonium Hydroxide	A-Excellent
Ammonium Nitrate	A-Excellent
Ammonium Persulfate	A <sup>1</sup> -Excellent
Ammonium Phosphate, Dibasic	A-Excellent
Ammonium Sulfate	A-Excellent
Amyl Acetate	A <sup>2</sup> -Excellent
Amyl Alcohol	A-Excellent
Amyl Chloride	A-Excellent
Aniline	A <sup>1</sup> -Excellent
Aniline Hydrochloride	A <sup>2</sup> -Excellent
Antimony Trichloride	A-Excellent
Aqua Regia (80% HCl, 20% HNO <sub>3</sub> )	A <sup>2</sup> -Excellent
Arsenic Acid	A-Excellent
Asphalt	A-Excellent
Barium Carbonate	A-Excellent
Barium Chloride	A-Excellent
Barium Hydroxide	A-Excellent
Barium Sulfate	A-Excellent
Barium Sulfide	A-Excellent
Beer	A-Excellent
Beet Sugar Liquids	A-Excellent
Benzaldehyde	A <sup>2</sup> -Excellent
Benzene	A <sup>2</sup> -Excellent
Benzoic Acid	A-Excellent
Benzol	A-Excellent
Bleach	A-Excellent
Borax (Sodium Borate)	A-Excellent
Boric Acid	A-Excellent
Bromine	A-Excellent
Butadiene	A-Excellent
Butane	A-Excellent
Butanol (Butyl Alcohol)	A-Excellent
Butyl Amine	A <sup>1</sup> -Excellent
Butyl Ether	A <sup>1</sup> -Excellent
Butyl Phthalate	B <sup>1</sup> -Good
Butylacetate	B <sup>2</sup> -Good
Butylene	A-Excellent
Butyric Acid	A-Excellent
Calcium Bisulfide	A-Excellent
Calcium Bisulfite	A-Excellent

Calcium Bromide 38%	A-Excellent
Calcium Carbonate	A-Excellent
Calcium Chlorate	A-Excellent
Calcium Chloride (30% in water)	A-Excellent
Calcium Chloride (saturated)	A-Excellent
Calcium Hydroxide	A <sup>2</sup> -Excellent
Calcium Hydroxide (saturated)	A-Excellent
Calcium Hydroxide 10%	A-Excellent
Calcium Hypochlorite	A-Excellent
Calcium Hypochlorite (saturated)	A-Excellent
Calcium Hypochlorite 30%	A-Excellent
Calcium Nitrate	A <sup>2</sup> -Excellent
Calcium Oxide	A-Excellent
Calcium Sulfate	A-Excellent
Calcium Sulfide	A-Excellent
Cane Juice	A <sup>1</sup> -Excellent
Carbolic Acid (Phenol)	A <sup>1</sup> -Excellent
Carbon Dioxide (dry)	A-Excellent
Carbon Dioxide (wet)	A-Excellent
Carbon Disulfide	B <sup>2</sup> -Good
Carbon Monoxide	B-Good
Carbon Tetrachloride	A <sup>2</sup> -Excellent
Carbon Tetrachloride (dry)	A <sup>2</sup> -Excellent
Carbon Tetrachloride (wet)	A <sup>2</sup> -Excellent
Carbonic Acid	A-Excellent
Cellulose Acetate	D-Severe Effect
Chloral Hydrate	A-Excellent
Chlorine (dry)	A-Excellent
Chlorine Water	B-Good
Chlorine, Anhydrous Liquid	A <sup>1</sup> -Excellent
Chloroacetic Acid	A <sup>1</sup> -Excellent
Chlorobenzene (Mono)	A <sup>1</sup> -Excellent
Chloroform	A-Excellent
Chlorosulfonic Acid	D-Severe Effect
Chromic Acid 10%	A-Excellent
Chromic Acid 30%	A <sup>2</sup> -Excellent
Chromic Acid 5%	A-Excellent
Chromic Acid 50%	A <sup>2</sup> -Excellent
Citric Acid	A-Excellent
Copper Chloride	A-Excellent
Copper Cyanide	A-Excellent
Copper Nitrate	A-Excellent
Copper Sulfate >5%	A-Excellent
Copper Sulfate 5%	A-Excellent
Cresols	A <sup>2</sup> -Excellent
Cresylic Acid	B <sup>1</sup> -Good
Cyclohexane	A-Excellent

Cyclohexanone	D-Severe Effect
Detergents	A-Excellent
Dextrin	A-Excellent
Dextrose	A-Excellent
Diacetone Alcohol	D-Severe Effect
Dibenzyl Ether	A-Excellent
Dichlorobenzene	A-Excellent
Dichloroethane	A-Excellent
Diesel Fuel	A-Excellent
Diethyl Ether	A <sup>1</sup> -Excellent
Diethylamine	D-Severe Effect
Diethylene Glycol	A-Excellent
Dimethyl Aniline	A <sup>1</sup> -Excellent
Dimethyl Formamide	D-Severe Effect
Diphenyl Oxide	B <sup>2</sup> -Good
Disodium Phosphate	A-Excellent
Epsom Salts (Magnesium Sulfate)	A-Excellent
Ethane	A-Excellent
Ethanolamine	C <sup>1</sup> -Fair
Ether	B <sup>1</sup> -Good
Ethyl Acetate	D-Severe Effect
Ethyl Benzoate	D-Severe Effect
Ethyl Chloride	A-Excellent
Ethyl Ether	A <sup>2</sup> -Excellent
Ethylene Bromide	A-Excellent
Ethylene Chloride	A-Excellent
Ethylene Chlorohydrin	A-Excellent
Ethylene Diamine	B-Good
Ethylene Dichloride	A-Excellent
Ethylene Glycol	A-Excellent
Ethylene Oxide	A-Excellent
Fatty Acids	A-Excellent
Ferric Chloride	A-Excellent
Ferric Nitrate	A-Excellent
Ferric Sulfate	A-Excellent
Ferrous Chloride	A-Excellent
Ferrous Sulfate	A-Excellent
Fluoboric Acid	A <sup>1</sup> -Excellent
Fluorine	A <sup>1</sup> -Excellent
Fluosilicic Acid	A <sup>1</sup> -Excellent
Formaldehyde 100%	A-Excellent
Formaldehyde 40%	A-Excellent
Formic Acid	A-Excellent
Freon® 11	A-Excellent
Freon® 113	B-Good
Freon® 12	A-Excellent
Freon® 22	A-Excellent

Freon® TF	B-Good
Fruit Juice	A-Excellent
Fuel Oils	B-Good
Furan Resin	D-Severe Effect
Furfural	B <sup>2</sup> -Good
Gallic Acid	A <sup>1</sup> -Excellent
Gasoline (high-aromatic)	A-Excellent
Gasoline, leaded, ref.	A-Excellent
Gasoline, unleaded	A-Excellent
Gelatin	A-Excellent
Glucose	A-Excellent
Glycerin	A-Excellent
Glycolic Acid	B-Good
Gold Monocyanide	A-Excellent
Grape Juice	A-Excellent
Grease	A-Excellent
Heptane	A-Excellent
Hexane	A-Excellent
Honey	A-Excellent
Hydraulic Oil (Petro)	A-Excellent
Hydraulic Oil (Synthetic)	A-Excellent
Hydrazine	A-Excellent
Hydrobromic Acid 100%	A-Excellent
Hydrobromic Acid 20%	A-Excellent
Hydrochloric Acid 100%	A-Excellent
Hydrochloric Acid 20%	A-Excellent
Hydrochloric Acid 37%	A-Excellent
Hydrochloric Acid, Dry Gas	A-Excellent
Hydrocyanic Acid	A-Excellent
Hydrofluoric Acid 100%	A-Excellent
Hydrofluoric Acid 20%	A-Excellent
Hydrofluoric Acid 50%	A-Excellent
Hydrofluoric Acid 75%	A-Excellent
Hydrofluosilicic Acid 100%	A <sup>1</sup> -Excellent
Hydrofluosilicic Acid 20%	A-Excellent
Hydrogen Gas	A-Excellent
Hydrogen Peroxide 10%	A-Excellent
Hydrogen Peroxide 100%	A <sup>1</sup> -Excellent
Hydrogen Peroxide 30%	A-Excellent
Hydrogen Peroxide 50%	A <sup>1</sup> -Excellent
Hydrogen Sulfide (aqua)	A-Excellent
Hydrogen Sulfide (dry)	A-Excellent
Hydroxyacetic Acid 70%	A-Excellent
Ink	A-Excellent
Iodine	A <sup>2</sup> -Excellent
Iodine (in alcohol)	A-Excellent
Iodoform	C-Fair

Isooctane	A <sup>2</sup> -Excellent
Isopropyl Acetate	D-Severe Effect
Isopropyl Ether	D-Severe Effect
Isotane	A-Excellent
Jet Fuel (JP3, JP4, JP5, JP8)	B-Good
Kerosene	A-Excellent
Ketones	C <sup>1</sup> -Fair
Lacquers	D-Severe Effect
Lactic Acid	B <sup>1</sup> -Good
Lard	A-Excellent
Latex	A-Excellent
Lead Acetate	A-Excellent
Lead Nitrate	A <sup>2</sup> -Excellent
Lead Sulfamate	A-Excellent
Ligroin	A-Excellent
Lime	A-Excellent
Linoleic Acid	A <sup>2</sup> -Excellent
Lithium Chloride	A <sup>2</sup> -Excellent
Lubricants	A-Excellent
Lye: Ca(OH) <sub>2</sub> Calcium Hydroxide	A <sup>2</sup> -Excellent
Lye: KOH Potassium Hydroxide	A-Excellent
Lye: NaOH Sodium Hydroxide	D-Severe Effect
Magnesium Carbonate	A-Excellent
Magnesium Chloride	A-Excellent
Magnesium Hydroxide	A-Excellent
Magnesium Nitrate	A-Excellent
Magnesium Sulfate (Epsom Salts)	A-Excellent
Maleic Acid	A-Excellent
Maleic Anhydride	A-Excellent
Malic Acid	A-Excellent
Manganese Sulfate	A <sup>2</sup> -Excellent
Mayonnaise	A-Excellent
Mercuric Chloride (dilute)	A-Excellent
Mercuric Cyanide	A-Excellent
Mercurous Nitrate	A-Excellent
Mercury	A-Excellent
Methane	A-Excellent
Methanol (Methyl Alcohol)	A-Excellent
Methyl Acetate	B <sup>1</sup> -Good
Methyl Acetone	D-Severe Effect
Methyl Acrylate	B <sup>1</sup> -Good
Methyl Alcohol 10%	A-Excellent
Methyl Bromide	A-Excellent
Methyl Butyl Ketone	D-Severe Effect
Methyl Cellosolve	A-Excellent
Methyl Chloride	A-Excellent
Methyl Dichloride	D-Severe Effect

Methyl Ethyl Ketone	D-Severe Effect
Methyl Isobutyl Ketone	D-Severe Effect
Methyl Methacrylate	B <sup>1</sup> -Good
Methylamine	C-Fair
Methylene Chloride	B <sup>1</sup> -Good
Milk	A <sup>2</sup> -Excellent
Molasses	B <sup>1</sup> -Good
Monochloroacetic Acid	B <sup>1</sup> -Good
Monoethanolamine	C-Fair
Morpholine	B <sup>1</sup> -Good
Motor Oil	B-Good
Mustard	A-Excellent
Naphtha	A-Excellent
Naphthalene	A <sup>2</sup> -Excellent
Nickel Chloride	A-Excellent
Nickel Nitrate	A <sup>2</sup> -Excellent
Nickel Sulfate	A-Excellent
Nitric Acid (20%)	A-Excellent
Nitric Acid (5 to10%)	A <sup>1</sup> -Excellent
Nitric Acid (50%)	A <sup>1</sup> -Excellent
Nitric Acid (Concentrated)	A <sup>1</sup> -Excellent
Nitrobenzene	A <sup>1</sup> -Excellent
Nitromethane	A <sup>2</sup> -Excellent
Nitrous Acid	B-Good
Nitrous Oxide	D-Severe Effect
Oils: Aniline	A-Excellent
Oils: Bay	A-Excellent
Oils: Bone	A-Excellent
Oils: Castor	A-Excellent
Oils: Citric	A-Excellent
Oils: Coconut	A-Excellent
Oils: Cod Liver	A-Excellent
Oils: Corn	A-Excellent
Oils: Cottonseed	A-Excellent
Oils: Crude Oil	A-Excellent
Oils: Diesel Fuel (20, 30, 40, 50)	A-Excellent
Oils: Fuel (1, 2, 3, 5A, 5B, 6)	B-Good
Oils: Ginger	A-Excellent
Oils: Hydraulic Oil (Petro)	A-Excellent
Oils: Hydraulic Oil (Synthetic)	A-Excellent
Oils: Lemon	A-Excellent
Oils: Linseed	A-Excellent
Oils: Mineral	A-Excellent
Oils: Orange	A-Excellent
Oils: Palm	A-Excellent
Oils: Peanut	A-Excellent
Oils: Peppermint	A-Excellent

Oils: Pine	A-Excellent
Oils: Rapeseed	A-Excellent
Oils: Rosin	A-Excellent
Oils: Sesame Seed	A-Excellent
Oils: Silicone	A-Excellent
Oils: Soybean	A-Excellent
Oils: Sperm (whale)	A-Excellent
Oils: Tanning	A-Excellent
Oils: Transformer	A-Excellent
Oils: Turbine	A-Excellent
Oleic Acid	A-Excellent
Oleum 100%	D-Severe Effect
Oleum 25%	C <sup>1</sup> -Fair
Oxalic Acid (cold)	B-Good
Ozone	A-Excellent
Palmitic Acid	A <sup>2</sup> -Excellent
Paraffin	A-Excellent
Pentane	A-Excellent
Perchloric Acid	A-Excellent
Perchloroethylene	A-Excellent
Petrolatum	A-Excellent
Petroleum	A-Excellent
Phenol (10%)	A-Excellent
Phenol (Carbolic Acid)	A <sup>1</sup> -Excellent
Phosphoric Acid (<40%)	B-Good
Phosphoric Acid (>40%)	B-Good
Phosphoric Acid (crude)	A-Excellent
Phosphoric Acid (molten)	D-Severe Effect
Phosphoric Acid Anhydride	D-Severe Effect
Phosphorus	A <sup>1</sup> -Excellent
Phosphorus Trichloride	A <sup>2</sup> -Excellent
Photographic Solutions	B <sup>2</sup> -Good
Phthalic Acid	A <sup>2</sup> -Excellent
Phthalic Anhydride	A-Excellent
Picric Acid	A <sup>1</sup> -Excellent
Plating Solutions: Antimony Plating 130°F	A-Excellent
Plating Solutions: Arsenic Plating 110°F	A-Excellent
Plating Solutions: Brass: High-Speed Brass Bath 110°F	B-Good
Plating Solutions: Brass: Regular Brass Bath 100°F	B-Good
Plating Solutions: Bronze: Cu-Cd Bronze Bath R.T.	A-Excellent
Plating Solutions: Bronze: Cu-Sn Bronze Bath 160°F	A-Excellent
Plating Solutions: Bronze: Cu-Zn Bronze Bath 100°F	A-Excellent
Plating Solutions: Cadmium: Cyanide Bath 90°F	A-Excellent
Plating Solutions: Cadmium: Fluoborate Bath 100°F	A-Excellent
Plating Solutions: Chromium: Barrel Chrome Bath 95°F	C-Fair
Plating Solutions: Chromium: Black Chrome Bath 115°F	C-Fair
Plating Solutions: Chromium: Chromic-Sulfuric Bath 130°F	C-Fair



Plating Solutions: Chromium: Fluoride Bath 130°F	C-Fair
Plating Solutions: Chromium: Fluosilicate Bath 95°F	C-Fair
Plating Solutions: Copper (Acid): Copper Fluoborate Bath 120°F	A-Excellent
Plating Solutions: Copper (Acid): Copper Sulfate Bath R.T.	A-Excellent
Plating Solutions: Copper (Cyanide): Copper Strike Bath 120°F	B-Good
Plating Solutions: Copper (Cyanide): High-Speed Bath 180°F	A-Excellent
Plating Solutions: Copper (Cyanide): Rochelle Salt Bath 150°F	A-Excellent
Plating Solutions: Copper (Misc): Copper (Electroless)	A-Excellent
Plating Solutions: Copper (Misc): Copper Pyrophosphate	A-Excellent
Potash (Potassium Carbonate)	A-Excellent
Potassium Bicarbonate	B-Good
Potassium Bromide	A-Excellent
Potassium Chlorate	A-Excellent
Potassium Chloride	A-Excellent
Potassium Chromate	B-Good
Potassium Cyanide Solutions	A-Excellent
Potassium Dichromate	A-Excellent
Potassium Ferricyanide	A <sup>2</sup> -Excellent
Potassium Ferrocyanide	A-Excellent
Potassium Hydroxide (Caustic Potash)	A-Excellent
Potassium Hypochlorite	A <sup>1</sup> -Excellent
Potassium Iodide	A <sup>2</sup> -Excellent
Potassium Nitrate	A-Excellent
Potassium Permanganate	A-Excellent
Potassium Sulfate	A-Excellent
Potassium Sulfide	A-Excellent
Propane (liquefied)	A-Excellent
Pyridine	D-Severe Effect
Pyrogallic Acid	A-Excellent
Salicylic Acid	A-Excellent
Salt Brine (NaCl saturated)	A-Excellent
Sea Water	A-Excellent
Silicone	A-Excellent
Silver Nitrate	A-Excellent
Soap Solutions	A <sup>1</sup> -Excellent
Soda Ash (see Sodium Carbonate)	A-Excellent
Sodium Acetate	A-Excellent
Sodium Benzoate	A <sup>2</sup> -Excellent
Sodium Bicarbonate	A-Excellent
Sodium Bisulfate	A-Excellent
Sodium Bisulfite	A-Excellent
Sodium Borate (Borax)	A-Excellent
Sodium Bromide	A <sup>2</sup> -Excellent
Sodium Carbonate	A-Excellent
Sodium Chlorate	A-Excellent
Sodium Chloride	A-Excellent
Sodium Chromate	A-Excellent

Sodium Cyanide	A-Excellent
Sodium Ferrocyanide	A-Excellent
Sodium Fluoride	A-Excellent
Sodium Hydroxide (20%)	A-Excellent
Sodium Hydroxide (50%)	D-Severe Effect
Sodium Hydroxide (80%)	D-Severe Effect
Sodium Hypochlorite (<20%)	A-Excellent
Sodium Hypochlorite (100%)	A-Excellent
Sodium Metaphosphate	A-Excellent
Sodium Nitrate	A-Excellent
Sodium Peroxide	A-Excellent
Sodium Polyphosphate	A-Excellent
Sodium Silicate	A-Excellent
Sodium Sulfate	A-Excellent
Sodium Sulfide	A-Excellent
Sodium Sulfite	A-Excellent
Sodium Thiosulfate (hypo)	A-Excellent
Stannic Chloride	A-Excellent
Stannous Chloride	A-Excellent
Stearic Acid	A-Excellent
Stoddard Solvent	A-Excellent
Sulfate (Liquors)	A-Excellent
Sulfur Chloride	A <sup>1</sup> -Excellent
Sulfur Dioxide	A-Excellent
Sulfur Dioxide (dry)	A-Excellent
Sulfur Trioxide (dry)	C <sup>1</sup> -Fair
Sulfuric Acid (<10%)	A-Excellent
Sulfuric Acid (10-75%)	A-Excellent
Sulfuric Acid (75-100%)	A-Excellent
Sulfuric Acid (cold concentrated)	A-Excellent
Sulfuric Acid (hot concentrated)	C-Fair
Sulfurous Acid	A-Excellent
Tannic Acid	B-Good
Tartaric Acid	B-Good
Tetrachloroethane	A-Excellent
Tetrahydrofuran	B <sup>1</sup> -Good
Tin Salts	A-Excellent
Toluene (Toluol)	A <sup>1</sup> -Excellent
Tomato Juice	A-Excellent
Trichloroacetic Acid	B-Good
Trichloroethane	A-Excellent
Trichloroethylene	B-Good
Tricresylphosphate	D-Severe Effect
Triethylamine	A <sup>2</sup> -Excellent
Trisodium Phosphate	A-Excellent
Turpentine	A-Excellent
Urea	A-Excellent

Urine	A-Excellent
Vinegar	B-Good
Vinyl Acetate	A <sup>2</sup> -Excellent
Vinyl Chloride	B <sup>1</sup> -Good
Water, Acid, Mine	A-Excellent
Water, Deionized	A <sup>2</sup> -Excellent
Water, Distilled	A-Excellent
Water, Fresh	A-Excellent
Water, Salt	A-Excellent
Whiskey and Wines	A-Excellent
White Liquor (Pulp Mill)	A <sup>1</sup> -Excellent
Xylene	A-Excellent
Zinc Chloride	A-Excellent
Zinc Sulfate	A-Excellent

### WARNING

The information in this chart has been supplied by reputable sources and is to be used **ONLY** as a guide in selecting equipment for appropriate chemical compatibility. Before permanent installation, test the equipment with the chemicals and under the specific conditions of your application.

Ratings of chemical behavior listed in this chart apply at a 48-hr exposure period. There exists no specific knowledge of possible effects beyond this period. There exists no warranty (neither express nor implied) that the information in this chart is accurate or complete or that any material is suitable for any purpose.

### DANGER

Variations in chemical behavior during handling due to factors such as temperature, pressure, and concentrations can cause equipment to fail, even though it passed an initial test.

### SERIOUS INJURY MAY RESULT

Use suitable guards and/or personal protections when handling chemicals.

*Last Modified December 9, 2015*