

Chemical Resistance Guide

The following Chemical Resistance Guide lists several standard and optional coatings available on Loren Cook products. This guide is intended to assist the user or specifier in properly selecting corrosion protection for the air moving device. This information is a compilation of chemical resistance characteristics claimed by manufacturers of the listed coatings.

When selecting a coating, the best engineering value will be the standard "COOK Lorenized Fan Finish" (polyester powder). This coating will resist many chemicals that a standard Industrial Enamel cannot. In some cases, an optional coating may be required to insure adequate chemical resistance. Where more protection is needed, the next choice would be "COOK Epoxy Powder". This coating can be used as an equal to Eisenheis, conventional spray applied Epoxy, and Baked Epoxy. For additional protection "COOK Phenolic Epoxy Powder" is available as an equal to air dry Heresite.

Loren Cook Company assumes no responsibility for the life or adequacy of the coating to provide protection for a specified time. The company does however, accept responsibility for workmanship and application of the coating in accordance with the manufacturers recommendations

STANDARD COATING

COOK Lorenized Fan Finish is an electrostatically applied, baked polyester powder coating. Prior to coating, all components are subject to a 5 stage environmentally-friendly wash system. Final coating thickness is 1.5 - 2.5 mils.

<u>Property</u>	<u>Test Method</u>	<u>Value</u>
Salt Spray	ASTM B117	1000+ hours
Humidity Resistance	ASTM D2247	1000+ hours
Impact Resistance	ASTM D2794	100 in. lbs
Pencil Hardness	ASTM D3363	2H
Crosshatch Adhesion	ASTM D3359-B	100%
Max Service Temperature	N/A	230 deg F

OPTIONAL COATINGS

COOK Epoxy Powder is an electrostatically applied, baked epoxy powder coating. Prior to coating, all components are subject to a 5 stage environmentally-friendly wash system. Final coating thickness is 2.5 - 3.5 mils. For outdoor applications an optional UV resistant topcoat is available to prevent cosmetic chalking of the coating

<u>Property</u>	<u>Test Method</u>	<u>Value</u>
Salt Spray	ASTM B117	1000+ hours
Humidity Resistance	ASTM D2247	1000+ hours
Impact Resistance	ASTM D2794	160 in. lbs
Pencil Hardness	ASTM D3363	2H
Crosshatch Adhesion	ASTM D3359-B	100%
Max Service Temperature	N/A	230 deg F

COOK Phenolic Epoxy Powder is an electrostatically applied, baked phenolic epoxy coating. Prior to coating, all components are subject to a 5 stage environmentally-friendly wash system. Final coating thickness is 2 - 4 mils. For outdoor applications the optional UV resistant topcoat is required to prevent deterioration of the Phenolic Epoxy coating.

<u>Property</u>	<u>Test Method</u>	<u>Value</u>
Salt Spray	ASTM B117	1000+ hours
Humidity Resistance	ASTM D2247	1000+ hours
Impact Resistance	ASTM D2794	160 in. lbs
Pencil Hardness	ASTM D3363	3H
Crosshatch Adhesion	ASTM D3359-B	100%
Max Service Temperature	N/A	200 deg F

COOK Easy Clean Powder is an electrostatically applied, baked modified epoxy silicone, producing a high temperature "non-stick" coating. Prior to coating, all components are subject to a 5 stage environmentally-friendly wash system. Final coating thickness is 1 - 2 mils.

<u>Property</u>	<u>Test Method</u>	<u>Value</u>
Salt Spray	ASTM B117	1000+ hours
Humidity Resistance	ASTM D2247	1000+ hours
Impact Resistance	ASTM D2794	120 in. lbs
Pencil Hardness	ASTM D3363	3H
Crosshatch Adhesion	ASTM D3359-B	100%
Max Service Temperature	N/A	500 deg F

Air Dry Phenolic (Heresite VR-504) is a conventional spray applied phenolic resin coating. Prior to coating, all components are subject to a 5 stage environmentally-friendly wash system. Final coating thickness is 4 - 6 mils. For outdoor applications the optional UV resistant topcoat (Heresite UC-5500) is required to prevent deterioration of the coating.

<u>Property</u>	<u>Test Method</u>	<u>Value</u>
Salt Spray	ASTM B117	500+ hours
Humidity Resistance	ASTM D2247	500+ hours
Max Service Temperature	N/A	180 deg F

Chemical Resistance Guide

	COOK Lorenized Fan Finish (Polyester Powder) -----<Standard>-----	COOK Epoxy Powder	COOK Phenolic Epoxy Powder -----<Optional>-----	Air Dry Phenolic (Heresite)	Aluminum	Mild Steel -----<Uncoated>-----	304 Stainless Steel	316 Stainless Steel
Aetaldehyde	ND	ND	P	P	G	F	G	G
Acetic Acid	F	F	F	F	F	F	F	G
Acetic Anhydride	P	G	P	P	G	P	F	F
Acetone	P	F	F	F	G	G	G	G
Acetophenone	ND	ND	ND	ND	ND	ND	ND	ND
Acetylene	ND	ND	P	P	G	G	G	G
Acrylic Acid	ND	ND	ND	ND	G	ND	ND	ND
Acrylonitrile	ND	G	ND	ND	G	G	G	F
Adiptic Acid	ND	ND	ND	ND	G	ND	G	ND
Alcohol	G	G	F	F	G	G	G	G
Allyl Chloride	ND	F	ND	ND	G	ND	G	G
Aluminum Acetate	P	ND	G	G	P	ND	G	G
Aluminum Chloride	G	G	F	F	P	P	P	F
Aluminum Fluoride	ND	G	P	P	P	F	F	F
Aluminum Hydroxide	ND	G	G	G	G	G	G	G
Aluminum Nitrate	ND	ND	F	F	G	P	G	G
Aluminum Sulphate	ND	F	F	F	F	F	F	F
Ammonia (dry)	ND	G	F	F	G	F	G	G
Ammonia (moist)	ND	F	P	P	F	G	G	G
Ammonium Bifluoride	ND	G	ND	ND	P	ND	P	G
Ammonium Carbonate	ND	G	ND	ND	G	F	F	F
Ammonium Chloride	G	G	G	G	P	P	F	F
Ammonium Hydroxide	P	G	F	F	P	F	G	G
Ammonium Nitrate	ND	G	F	F	G	P	G	G
Ammonium Oxalate	ND	G	ND	ND	G	G	F	G
Ammonium Perchlorate	ND	ND	F	F	G	ND	G	G
Ammonium Persulphate	ND	G	P	P	P	G	G	G
Ammonium Phosphate	G	G	F	F	P	P	G	G
Ammonium Sulfate	G	G	F	F	P	F	F	F
Ammonium Sulphite	ND	ND	F	F	F	ND	G	G
Ammonium Thiocynate	ND	ND	P	P	G	G	G	G
Amyl Acetate	ND	G	ND	ND	G	P	G	G
Amyl Alcohol	ND	G	P	P	G	G	F	F
Amyl Chloride	ND	G	ND	ND	P	G	F	F
Aniline	P	G	P	P	F	F	F	G
Aqua Regia	ND	P	ND	ND	P	ND	P	P
Arsenic Acid	ND	G	ND	ND	G	F	F	G
Barium Carbonate	ND	G	ND	ND	P	F	F	G
Barium Chloride	G	G	F	F	P	F	F	G
Barium Hydroxide	P	G	G	G	P	F	F	G
Barium Nitrate	G	F	F	F	G	G	F	G
Barium Sulfide	G	G	P	P	P	P	G	G
Barium Sulphate	ND	F	F	F	F	P	G	G
Benzaldehyde	ND	G	P	P	P	G	F	G
Benzene	F	F	F	F	G	G	G	G
Benzoic Acid	G	G	F	F	G	ND	G	G
Benzol	ND	G	P	P	G	ND	F	G
Benzoyl Chloride	G	ND	ND	ND	P	G	ND	ND
Boric Acid	G	F	F	F	F	P	F	G
Bromic Acid	ND	G	ND	ND	P	F	ND	ND
Butadiene	ND	G	P	P	F	ND	G	G
Butyl Acetate	ND	F	P	P	G	F	G	F
Butyl Alcohol	F	ND	ND	ND	G	G	G	G
Butyl Bromide	F	ND	ND	ND	ND	ND	ND	ND
Butylamine	P	ND	ND	ND	G	G	G	G
Butyric Acid	F	G	F	F	P	ND	F	G
Calcium Bisulfate	ND	G	P	P	P	ND	F	G
Calcium Carbonate	G	G	F	F	G	G	G	G
Calcium Bromide	G	ND	ND	ND	ND	ND	ND	ND
Calcium Chlorate	ND	G	ND	ND	F	G	F	G
Calcium Chloride	G	G	G	G	F	F	F	F
Calcium Hydroxide	P	G	G	G	P	F	G	G
Calcium Hypochlorite	G	G	F	F	P	ND	F	F
Calcium Sulfate	ND	G	F	F	G	ND	F	G
Carbolic Acid	ND	G	P	P	F	F	F	F
Carbon Bisulfide	ND	G	F	F	G	ND	G	G
Carbon Disulfide	G	G	P	P	G	F	F	G
Carbon Monoxide Gas	ND	G	G	G	G	G	G	G
Carbon Tetrachloride	G	F	P	P	F	P	F	F
Carbonic Acid	ND	G	F	F	F	ND	F	F
Chlorine Gas (dry)	ND	F	F	F	P	P	F	F
Chlorine Gas (moist)	ND	F	G	G	P	P	F	P

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	Chlorine Water	G	P	F	F	P	ND	P
Chlorobenzene	F	G	P	P	G	F	G	G
Chloroform	ND	G	P	P	F	F	G	G
Chlorosulfonic Acid	P	F	ND	ND	F	P	F	F
Chromic Acid 100%	P	P	P	P	P	P	P	F
Chromic Acid 50%	P	F	P	P	P	P	P	F
Chromic Acid	P	F	P	P	P	P	F	F
Citric Acid	G	F	F	F	F	P	F	G
Copper Acetate	G	ND	ND	ND	P	ND	ND	G
Copper Chloride	G	G	F	F	P	P	P	F
Copper Cyanide	ND	F	P	P	P	P	G	G
Copper Fluoborate	ND	G	ND	ND	P	ND	P	P
Copper Nitrate	ND	G	F	F	P	P	G	G
Copper Sulfate	G	F	F	F	P	P	G	G
Corn Oil	G	ND	P	P	G	G	G	G
Cresylic Acid	ND	G	ND	ND	G	F	G	G
Cyclohexane	G	G	ND	ND	G	G	G	G
Cyclohexanone	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexene	ND	ND	ND	ND	ND	ND	ND	ND
Diacetone Alcohol	G	ND	ND	ND	G	G	G	G
Dibutyl Phthalate	ND	ND	ND	ND	ND	G	G	G
Diethanolamine	ND	ND	ND	ND	G	ND	ND	ND
Diethylene glycol	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl Sulfate	ND	ND	ND	ND	ND	ND	ND	ND
Difluorophosphoric Acid	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylamine	ND	ND	ND	ND	ND	ND	ND	ND
Diocetyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND
Dipropylene Glycol	ND	ND	ND	ND	ND	ND	ND	ND
Ethanolamine	ND	G	ND	ND	G	F	F	G
Ethyl Acetate	ND	G	P	P	F	F	G	G
Ethyl Alcohol	G	ND	F	F	F	G	G	G
Ethyl Chloride	ND	G	P	P	F	F	F	G
Ethyl Ether	ND	ND	ND	ND	ND	ND	ND	ND
Ethylene Chloride	ND	G	P	P	F	F	G	G
Ethylene Glycol	G	G	P	P	E	F	G	G
Ferric Chloride	G	F	F	F	P	P	P	P
Ferric Nitrate	ND	G	P	P	P	P	G	G
Ferric Sulphate	ND	G	F	F	P	P	G	F
Ferrous Chloride	ND	G	F	F	P	ND	P	P
Ferrous Sulphate	ND	G	F	F	F	P	G	F
Formaldehyde	G	F	F	F	F	F	G	G
Formalin-Formaldehyde	ND	ND	G	G	F	P	G	G
Formic Acid	P	F	P	P	P	P	F	F
Flourine	ND	P	P	P	P	P	P	P
Fluoroboric Acid	ND	F	P	P	P	P	F	F
Furfural	ND	G	P	P	G	F	G	G
Furfurylamine	ND	ND	ND	ND	ND	ND	ND	ND
Gallic Acid	ND	ND	F	F	G	P	G	G
Gasoline	G	G	F	F	G	F	G	G
Glucose	ND	G	F	F	G	G	G	G
Gluconic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Glutamic Acid	ND	ND	ND	ND	G	ND	F	F
Glycerin	ND	G	F	F	G	G	G	G
Glycolic Acid	ND	G	ND	ND	G	ND	ND	ND
Heptane	ND	G	P	P	G	G	G	G
Hexane	ND	G	P	P	G	G	G	G
Hexylene Glycol	ND	ND	ND	ND	ND	ND	ND	ND
Hydrobromic Acid	ND	F	P	P	P	P	P	F
Hydrochloric Acid	G	F	F	F	P	P	P	P
Hydrochlorus Acid	ND	F	ND	ND	P	P	P	P
Hydrocyanic Acid	G	G	P	P	F	F	G	G
Hydrofluoric Acid	P	F	P	P	P	P	P	P
Hydrofluosilicic Acid	P	ND	P	P	P	ND	F	P
Hydrogen Peroxide	ND	F	P	P	G	P	G	G
Hydrogen Sulfide	G	G	F	F	F	P	F	G
Hydrogen Sulfide(aqueous)	ND	G	ND	ND	F	ND	F	G
Hydrogen Sulfide(dry)	ND	G	ND	ND	F	F	F	G
Isobutyl Alcohol	G	ND	ND	ND	G	G	G	G
Isopropyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND
Isopropyl Alcohol	G	G	ND	ND	G	G	G	G
Isopropyl Ether	ND	ND	ND	ND	G	G	G	G
Lactic Acid	F	G	F	F	F	P	F	G

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Lead Acetate	ND	G	ND	ND	P	P	F	F
Lithium Chloride	G	F	G	G	P	ND	F	F
Magnesium Carbonate	ND	G	F	F	P	P	G	G
Magnesium Chloride	G	G	G	G	P	P	F	F
Magnesium Hydroxide	ND	G	F	F	F	F	F	G
Magnesium Nitrate	ND	G	F	F	F	P	G	G
Magnesium Oxochloride	ND	ND	ND	ND	ND	ND	F	F
Magnesium Sulfate	ND	G	F	F	F	F	F	G
Maleic Acid	G	ND	P	P	F	F	F	G
Malic Acid	ND	ND	ND	ND	F	P	F	F
Manganese Carbonate	ND	ND	G	G	P	ND	G	G
Mercurous Nitrate	ND	ND	G	G	P	P	G	G
Methacrylic Acid	ND	ND	ND	ND	G	ND	ND	ND
Methanesulfonic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Alcohol	G	ND	F	F	F	G	G	G
Methyl Acrylate	ND	ND	ND	ND	ND	G	G	G
Methyl Chloride	F	G	P	P	F	ND	P	G
Methyl Ethyl Ketone	P	F	F	F	G	G	G	G
Methyl isobutyl Ketone	ND	F	F	F	G	G	G	G
Methylene Chloride	ND	G	P	P	G	G	G	G
Morpholine	ND	ND	ND	ND	ND	ND	ND	ND
Naptha	F	G	F	F	G	F	G	G
Napthalene	ND	ND	P	P	G	G	F	F
Napthalensulfonic Acid	ND	ND	F	F	P	P	F	G
Nickel Acetate	ND	ND	P	P	P	G	G	F
Nickel Chloride	G	G	F	F	P	P	F	F
Nickel Nitrate	ND	ND	F	F	P	P	G	G
Nickel Sulphate	ND	G	F	F	P	P	F	G
Nitric Acid 5%	P	F	G	G	P	P	F	F
Nitric Acid 10%	P	P	G	G	P	P	F	F
Nitric Acid (vapors)	P	P	F	F	P	P	G	F
Nitrous Acid	ND	ND	F	F	F	ND	ND	G
Oleic Acid	G	G	F	F	F	F	F	G
Oxalic Acid	G	G	F	F	F	P	F	G
Ozone	ND	ND	ND	ND	F	G	G	G
Perchloric Acid	ND	P	F	F	P	P	F	G
Phenol	ND	F	P	P	F	P	G	F
Phosphoric Acid	G	F	F	F	P	P	F	G
Phosphoric Anhydride	ND	ND	ND	ND	F	P	F	G
Picric Acid	G	F	F	F	F	P	G	G
Phthalic Acid	ND	ND	ND	ND	G	ND	ND	ND
Polyethylene Glycol	ND	ND	ND	ND	ND	ND	ND	ND
Potassium Bromide	G	G	F	F	F	P	F	G
Potassium Carbonate	ND	G	F	F	F	F	F	G
Potassium Chlorate	ND	G	F	F	F	F	G	G
Potassium Chloride	G	G	F	F	F	F	F	G
Potassium Cyanide	ND	G	F	F	P	F	G	F
Potassium Dichromate	ND	F	F	F	G	F	G	G
Potassium Ferricyanide	ND	ND	F	F	G	ND	G	G
Potassium Ferrocyanide	ND	G	F	F	F	F	G	G
Potassium Hydroxide	P	F	F	F	P	F	G	G
Potassium Hypochlorite	ND	ND	P	P	F	ND	F	P
Potassium Nitrate	ND	G	F	F	G	F	G	G
Potassium Permanganate	ND	ND	P	P	G	F	G	F
Potassium Phosphate	ND	ND	P	P	P	ND	F	ND
Potassium Sulphate	ND	ND	F	F	G	F	G	F
Propane	ND	ND	ND	ND	ND	ND	ND	ND
Pyrogalllic Acid	ND	ND	F	F	F	F	G	G
Pyridine	ND	ND	ND	ND	F	G	F	G
Salt Spray	G	G	F	F	F	P	F	F
Silver Bromide	ND	ND	F	F	P	ND	F	F
Silver Nitrate	ND	G	F	F	P	P	G	F
Sodium Acetate	ND	G	F	F	G	F	G	G
Sodium Bicarbonate	G	F	F	F	G	F	G	G
Sodium Bisulfate	ND	G	F	F	F	P	G	G
Sodium Bisulfite	ND	G	ND	ND	F	G	G	G
Sodium Borate	ND	ND	F	F	F	P	G	G
Sodium Bromide	ND	ND	P	P	F	ND	F	F
Sodium Carbonate	G	G	F	F	F	F	G	F
Sodium Chlorate	G	G	F	F	F	F	G	G
Sodium Chloride	G	G	G	G	F	F	F	F
Sodium Chromate	ND	F	P	P	G	F	F	G

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							Stainless Steel -----<Uncoated>-----	Stainless Steel
Sodium Citrate	ND	ND	G	G	P	ND	G	G
Sodium Cyanide	ND	G	P	P	P	F	G	G
Sodium Dichromate	ND	ND	P	P	P	F	F	P
Sodium Ferricyanide	ND	ND	F	F	P	ND	G	G
Sodium Fluoride	ND	ND	P	P	F	P	F	F
Sodium Formate	ND	G	ND	ND	ND	ND	ND	ND
Sodium Hydroxide	P	F	F	F	P	F	G	F
Sodium Hypochlorite	ND	F	P	P	P	P	P	F
Sodium Hyposulphate	ND	F	ND	ND	G	ND	P	F
Sodium Hyposulphite	ND	ND	P	P	F	P	G	G
Sodium Nitrate	ND	G	F	F	G	F	G	G
Sodium Nitrite	ND	ND	F	F	G	ND	G	G
Sodium Perchlorate	ND	ND	P	P	P	ND	A	G
Sodium Peroxide	ND	G	P	P	F	F	G	G
Sodium Phosphate	G	ND	F	F	P	F	G	G
Sodium Phosphite	ND	ND	ND	ND	ND	ND	G	ND
Sodium Sallcylate	ND	ND	F	F	P	ND	G	G
Sodium Silicate	ND	G	F	F	F	F	G	F
Sodium Sulphate	ND	G	F	F	G	F	G	G
Sodium Sulphide	G	ND	P	P	P	F	F	F
Sodium Sulphite	ND	ND	F	F	F	P	F	P
Stannic Chloride	ND	G	F	F	P	P	P	P
Stannous Chloride	ND	G	F	F	P	P	F	P
Steam Vapor	G	G	F	F	G	F	G	G
Stearic Acid	G	G	F	F	F	F	F	G
Strontium Hydroxide	ND	ND	F	F	P	ND	ND	G
Strontium Nitrate	ND	ND	F	F	P	ND	ND	G
Styrene	ND	G	ND	ND	G	G	F	F
Sulfamic Acid	ND	ND	P	P	P	ND	ND	ND
Sulphur Dioxide Gas	ND	G	F	F	F	P	F	F
Sulphuric Acid 10%	F	F	P	P	F	P	P	F
Sulphuric Acid 50%	F	F	P	P	P	P	P	P
Sulphuric Acid 96%	P	P	P	P	F	F	P	F
Sulphuric Acid	ND	F	F	F	P	P	P	F
Sulphurous Acid	ND	F	F	F	F	P	P	F
Tannic Acid	G	G	G	G	F	F	G	G
Tartaric Acid	ND	G	F	F	F	P	F	G
Toluene	G	G	P	P	G	G	G	G
Tributyl Phosphate	ND	ND	ND	ND	ND	G	ND	ND
Trichlorethane	ND	G	ND	ND	ND	ND	ND	G
Trichloroethylene	ND	F	P	P	F	P	G	G
Triethanolamine	ND	ND	P	P	F	ND	G	G
Triethyl Benzene	ND	ND	ND	ND	ND	ND	ND	ND
Trimethyl Phosphate	ND	ND	ND	ND	ND	ND	ND	ND
Urea	ND	ND	P	P	G	G	G	G
Vinyl Chloride	ND	ND	P	P	G	F	G	F
Vinyl Acetate	ND	ND	P	P	G	ND	G	F
Water (moisture)	G	G	G	G	G	F	G	G
Xyol-Toluol	ND	F	P	P	G	G	G	P
Xylene	P	G	P	P	G	F	F	G
Zinc Acetate	ND	ND	P	P	G	G	G	G
Zinc Chloride	G	G	F	F	P	P	P	F
Zinc Cyanide (moist)	ND	ND	ND	ND	P	ND	G	G
Zinc Nitrate	ND	ND	F	F	F	ND	G	G
Zinc Sulphate	ND	F	F	F	F	P	G	G

G=Good. F=Fair. P=Poor. ND = No Data