

# ChemLINE® 784



*A coating with superior chemical resistance and high temperature resistance.*

## Description

ChemLINE® 784 is a high functionality, two component thermoset polymer coating. When cured, the ChemLINE® 784 high cross link density is unlike other coatings. ChemLINE® 784 delivers significantly improved product performance and anti-corrosion resistance. ChemLINE® 784 coating is formulated with a unique high functionality polymer that is designed and engineered with 28 functional groups per molecule. This bridged aromatic backbone structure, when polymerized, forms up to 784 cross links.

ChemLINE® 784 cross links predominately through an ether (carbon-oxygen-carbon) linkage. This eliminates high concentrations of hydroxyl groups (found in epoxies) and precludes formation of ester groups (found in vinylesters) which are subject to hydrolysis and acid attack. ChemLINE® 784 can be ambient cured or lower temperature forced air cured depending on substrate and service conditions.

### ChemLINE® 784 Higher Cross Link Density Means:

- ▶ Higher chemical resistance
- ▶ Higher toughness
- ▶ Higher heat resistance
- ▶ Higher resistance to abrasion

### Provides Superior Chemical Resistance to:

- ▶ 98% Sulfuric Acid
- ▶ Methanol
- ▶ 37% Hydrochloric Acid
- ▶ Methylene Chloride
- ▶ 50% Sodium Hydroxide
- ▶ Acetic Acid
- ▶ Most acids, alkalies, and solvents

## Industry Applications

- ▶ **Chemical Processing** - Tanks, vessels, hazardous waste, secondary containment, chemical plant floors, etc.
- ▶ **Paper & Pulp** - Digesters, black liquor tanks, bleaching, etc.
- ▶ **Mining** - Acid tanks, scrubbers, etc.
- ▶ **High Technology** - Clean rooms, floors, etc.
- ▶ **Power Generation** - FGD systems, ducts and stacks, etc.
- ▶ **Steel** - Pickling tanks, acid storage, acid waste neutralization.
- ▶ **Waste Water** - Tanks, clarifiers, flocculation basins, neutralization chambers, concrete containment, etc.

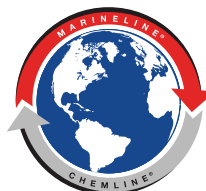
## Product Highlights

- ▶ Superior corrosion resistance, exceptional toughness
- ▶ Superior bonding qualities
- ▶ Applied to pitted and/or corroded steel
- ▶ Maximum versatility; product cycling
- ▶ Ambient or lower temperature forced air cure
- ▶ Low VOC - 130 grams/liter (1.09 lbs. per gallon)
- ▶ Non-permeable, steam cleanable, and field repairable
- ▶ Resists hydroblasting
- ▶ Excellent UV resistance
- ▶ ChemLINE® is generally recognized as safe (GRAS) for food grade cargoes. ChemLINE® 784 coating complies with the FDA and all applicable food additive regulations. Complies with FDA 21 CFR 175.300 for food handling.
- ▶ High impact resistance
- ▶ Dry heat resistance to 400° F (204° C)

## Typical Properties (mixed, as supplied)

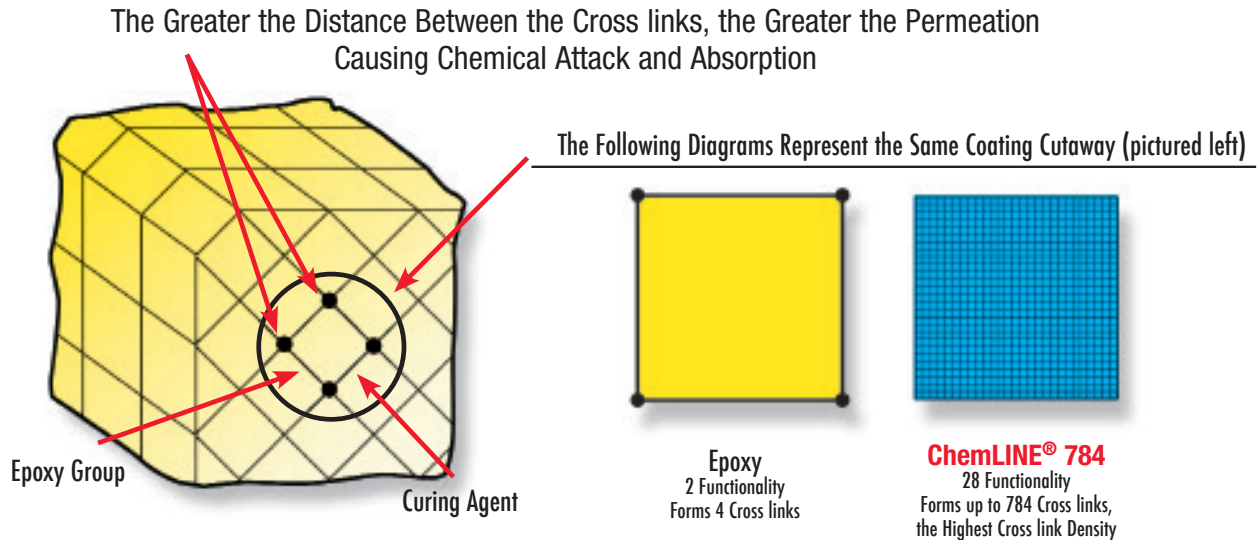
- ▶ Stock Colors \_\_\_\_\_ Gray, Red
- ▶ V.O.C. Level/Gal. \_\_\_\_\_ 130 grams/L (1.09 lbs./gal.)
- ▶ Pot Life \_\_\_\_\_ 30 minutes @ 75°F (24°C)
- ▶ Viscosity Reduction \_\_\_\_\_ Reduce with Toluene or Xylene
- ▶ Solids by Volume \_\_\_\_\_ 85%
- ▶ Recommended Film Thickness (dry) mils average  
\_\_\_\_\_ Steel: 12 mils (300 microns)  
\_\_\_\_\_ Concrete: 20 mils (500 microns)
- ▶ Shelf Life \_\_\_\_\_ 12 Months

*For product recommendations and technical, application and heat curing information contact Advanced Polymer Coatings' customer service. Contact +1 440-937-6218.*



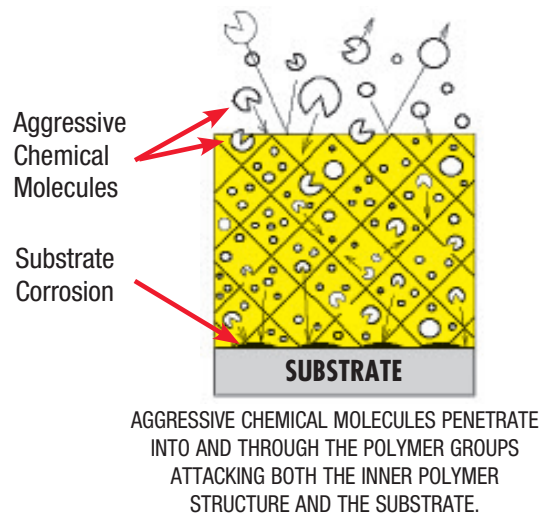
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# ▶ The Technology; Epoxies, Vinylesters and ChemLINE® 784 Form 3 Dimensional Screen-Like Structures when Cured

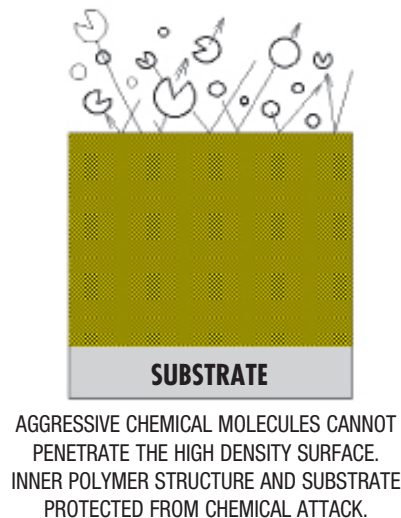


## Problems with Epoxies and Vinylesters

### Vinylester's and Epoxy's Open Screen Structure



### ChemLINE 784's Closed Screen Structure



- ▶ 28 functionality forming up to 784 cross links
- ▶ Majority of cross links are through Ether (C-O-C) bonds. Ether bonds are one of the strongest bonds in chemistry. Ether bonds give flexibility with chemical resistance.
- ▶ No ester groups

# Superior Corrosion Resistance Performance

	ChemLINE® 784	Phenolic Epoxy	Vinylester	Stainless Steel
Acetaldehyde	A	L	N	A
Acetic Acid	A	N	N	A
Acrolein Acid	A	N	—	A
Acrylic Acid	A	N	N	A
Acrylonitrile, 35 °C	A	N	N	A
Ammonium Persulfate	A	A	A	L
Azabenzene	A	N	N	A
Benzene	A	A	N	A
Benzene Carboxylic Acid	A	A	N	A
Benzoyl Chloride	A	N	N	N
B-Methacrylic Acid	A	N	N	A
Bichromate of Soda	A	N	A	A
Bromine	A	N	N	A
Butanoic Acid	A	N	—	A
Butyric Aldehyde	A	N	A	A
Calcium Hydroxide	A	A	A	A
Calcium Hypochlorite	A	A	A	L
Caustic Potash	A	N	N	A
Carbolic Acid	A	N	N	A
Chlorine Water	A	N	A	N
Chlorosulfonic Acid	A	N	N	N
Chlorinated Acetone	A	N	N	L
Chloroacetic Acid	A	N	N	L
Chromic Acid, 20%	A	N	A	N
Coal Tar Oil	A	N	A	A
Coconut Fatty Acid	A	A	A	A
Colamine	A	N	N	A
Cresol	A	N	—	A
Dichloromethane	A	N	N	A
Detergents	A	A	A	A
Diethyl Formamide	A	N	N	A
Diethylamine	A	N	N	A
Diethylene Chloride	A	N	N	L
Diethyl Ether	A	N	N	A
Dimethylamide Acetate	A	N	—	A
Disulphuric Acid	A	N	—	A
EDTA	A	N	A	A
Ethanolamine	A	N	N	A
Ethonic Acid Anhydride	A	N	—	A
Ethyl Acrylate	A	A	N	A
Fatty Acids	A	A	A	A
Fatty Acid, Palm	A	A	A	A
Ferric Chloride	A	N	A	N
Flaked Stearic Acid	A	N	A	A

	ChemLINE® 784	Phenolic Epoxy	Vinylester	Stainless Steel
Fluoroboric Acid	A	N	—	N
Formaldehyde	A	A	A	A
Formamide	A	N	—	A
Formic Acid 10%	A	N	A	A
Green Liquor	A	N	A	L
Glycerol	A	N	N	A
Grape Juice	A	A	A	A
Grapefruit Juice	A	A	A	A
Grease Oil	A	A	A	A
Heptanoic Acid	A	A	—	A
Herring Oil	A	A	A	A
Hexahydroaniline	A	N	—	A
HMDA	A	N	—	A
Hydrazine	A	N	N	A
Hydrobromic Acid	A	N	A	N
Hydrochloric Acid	A	N	A	N
10% Hydrofluoric Acid	A	N	A	N
5-20% Hydrogen Chloride	A	N	—	N
20% Hydrogen Peroxide	A	N	A	A
10%-30% Hydrogen Sulfate	A	N	A	A
Isobutanol	A	N	A	A
Isobutyric Acid	A	N	—	A
Isopropyl Amine	A	N	A	A
Javelle Water	A	N	A	N
Juices, Fruit	A	A	A	A
Lactic Acid	A	A	A	A
Lactonitrile	A	N	—	A
Latex	A	A	A	A
Liquified Ammonia	A	N	N	A
Liquid Pitch Oil	A	N	A	A
M-Phosphoric Acid	A	N	A	L
Maleic Anhydride	A	N	A	A
MCA	A	N	—	A
Methacrylonitrile, 35 °C	A	N	N	A
Methanamide	A	N	—	A
Methanol	A	N	N	A
MEK	A	L	N	A
Methylene Chloride	A	N	N	N
Monochloroacetic Acid	A	N	N	N
Monochloro Benzene	A	N	N	N
Naphtalene	A	N	A	A
Nitric Acid 1-20%	A	N	A	A
Nitro Benzene	A	A	N	A
Nitrogen Fertilizers	A	A	—	A

	ChemLINE® 784	Phenolic Epoxy	Vinylester	Stainless Steel
Norval Amine	A	N	N	A
Octanoic Acid	A	A	—	A
Orthonitro Benzene	A	N	N	N
Oleum	A	N	N	A
Olive Oil Fatty Acid	A	A	A	A
Palm Oil Fatty Acid	A	A	A	A
Perchloroethylene	A	N	N	A
Perchloric Acid	A	N	N	N
Phenol	A	N	N	A
Phosphoric Acid	A	N	A	N
Phthalic Anhydride	A	N	A	A
Piperzine	A	N	—	A
Polyethylene Polyamines	A	N	—	A
Potassium Hydroxide	A	A	L	L
Potassium Permanganate	A	A	A	L
Propionic Acid	A	N	N	A
Pyridine	A	N	N	A
Rubber Extender Oils	A	A	A	A
Rum	A	A	A	A
Sodium Carbonate	A	N	A	N
Sodium Dichromate	A	N	A	A
Sodium Hydroxide	A	A	A	L
Sodium Sulfide	A	A	N	N
Stannic Chloride	A	A	A	N
Stearic Acid	A	A	A	A
Spent Sulfuric Acid	A	N	N	A
Sulfur	A	N	N	A
Sulfuric Acid 1-70%	A	A	A	N
Sulfuric Acid 70-99%	A	N	N	L
Sulphurous Acid	A	N	N	A
Tall Oil	A	A	A	A
Tallow Acid	A	A	N	A
Tar Acid	A	N	A	A
Tetra Chloroacetic Acid	A	N	N	N
Tetra Hydrofurfuryl Alcohol	A	N	N	A
Toluene Diamine	A	N	N	A
Toluol	A	L	L	A
Valeraldehyde	A	N	—	A
Vinegar	A	N	A	A
Vitriol Oil 65%	A	N	A	A
Water, Acid	A	N	N	A
Xylenol	A	N	N	A

Corrosion resistance data for Phenolic Epoxy, Vinylester and Stainless Steel from published literature.

A = Good at ambient temperatures L = Limited Service N = Not recommended

### This is Only A Reference Guide.

Contact your ChemLINE® Representative or the ChemLINE® Customer Service Hotline +1 440-937-6218 for detailed specifications prior to any final coatings recommendation or application.



# ChemLINE® 784

## A History of Performance

For more than a decade ChemLINE® coatings have withstood the tremendous stresses and extremes of chemical attack and abrasive wear. ChemLINE® has been proven worldwide under the most arduous operating conditions, from resisting the most aggressive chemicals to handling hot pipelines in sub-freezing temperatures, with a history of success. Based on this experience, the development of

ChemLINE® 784 represents a quantum leap in chemical resistant polymer coatings.

## Add to Your Profits — Specify ChemLINE® 784

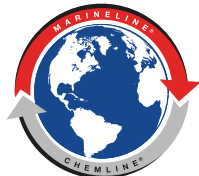
For the full story on ChemLine®, contact APC or click onto our web site at [www.adv-polymer.com](http://www.adv-polymer.com) for the most versatile, technologically advanced and cost effective protection available.



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