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:

- Sulfuric Acid, All Grades
- 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.

KRY Coating & Denizcilik
ChemLINE

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)

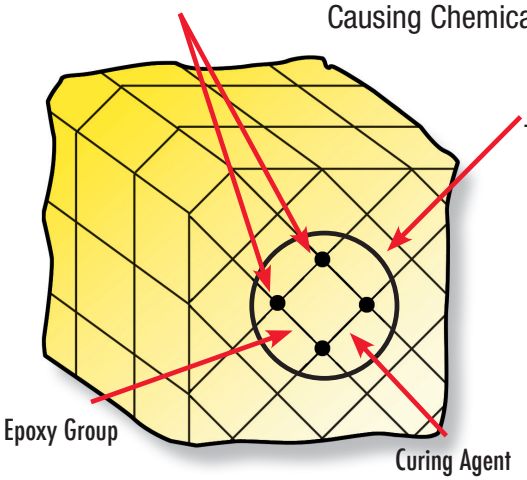
- Stock Colors _____ Gray, Red
- V.O.C. Level/Gal. _____ 130 grams/L (1.09 lbs./gal.)
- Pot Life _____ 30 minutes @ 75°F (24°C)
- Viscosity Reduction _____ Reduce with Toluene or Xylene
- Solids by Volume _____ 85%
- Recommended Film Thickness (dry) mils average
  _____ Steel: 12 mils (300 microns)
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

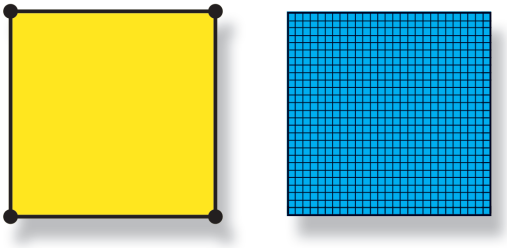
ADVANCED POLYMER COATINGS

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

The Greater the Distance Between the Cross links, the Greater the Permeation Causing Chemical Attack and Absorption



The Following Diagrams Represent the Same Coating Cutaway (pictured left)

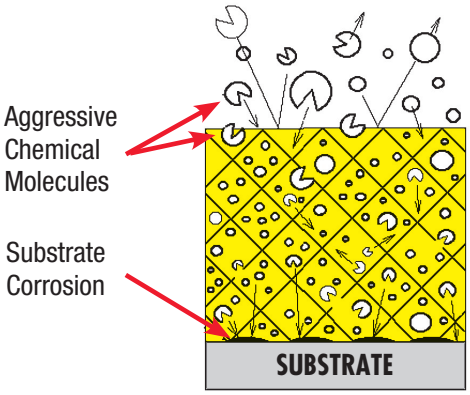


Epoxy
2 Functionality
Forms 4 Cross links

ChemLINE® 784
28 Functionality
Forms up to 784 Cross links,
the Highest Cross link Density

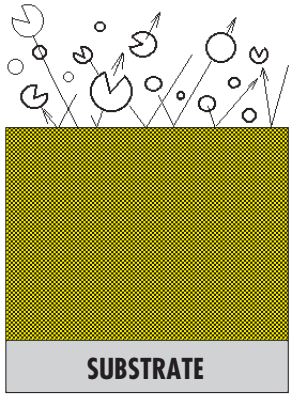
Problems with Epoxies and Vinylesters

Vinylester's and Epoxy's Open Screen Structure



AGGRESSIVE CHEMICAL MOLECULES PENETRATE INTO AND THROUGH THE POLYMER GROUPS ATTACKING BOTH THE INNER POLYMER STRUCTURE AND THE SUBSTRATE.

ChemLINE 784's Closed Screen Structure



AGGRESSIVE CHEMICAL MOLECULES CANNOT PENETRATE THE HIGH DENSITY SURFACE. INNER POLYMER STRUCTURE AND SUBSTRATE PROTECTED FROM CHEMICAL ATTACK.

- **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**

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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
Chloracetic 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
Fluoraboric 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
Hexahydroanaline	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.

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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 for the most versatile, technologically advanced and cost effective protection available.









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