ChemLINE® 784/32

A coating with superior chemical resistance and high temperature resistance.

Description

ChemLine® 784/32 is a high functionality, two component thermoset polymer coating. When cured, the ChemLine® 784/32 high cross-link density is unlike other coatings. ChemLine® 784/32 delivers significantly improved product performance and anti-corrosion resistance. ChemLine® 784/32 coating is formulated with a unique polymer designed and engineered with high functionality. This bridged aromatic backbone structure, when polymerized, forms up to 784 crosslinks. ChemLine® 784/32 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® 784/32 can be ambient cured or low temperature forced air cured depending on substrate and service conditions.*

ChemLine® 784/32's 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
- 37% Hydrochloric Acid
- 50% Sodium Hydroxide
- Most acids, alkalies, and solvents
- Methanol
- Methylene Chloride
- Acetic Acid

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 low temperature forced air cure
- Very low VOC - 99 grams/L (0.80 lbs. per gallon)
- Virtually non-permeable, steam cleanable, & field repairable
- Resists hydroblasting
- Excellent UV resistance
- Complies with all FDA regulations
- ChemLine® is generally recognized as safe (GRAS) for food grade cargoes.
- High impact resistance
- Dry heat resistance to 400° F (204° C)

Typical Properties

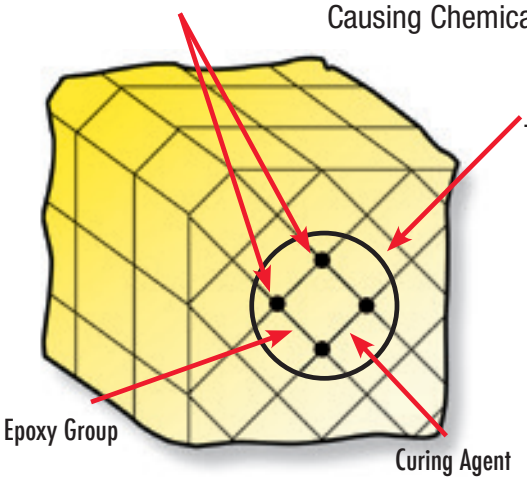
- Stock Colors _____ Gray, Red
- V.O.C. Level/Gal. _____ 99 grams/L (0.80 lbs./gal.)
- Lead Content _____ Zero
- Chromate Content _____ Zero
- Pot Life _____ 30 minutes @ 75°F (24°C)
- Viscosity Reduction _____ Reduce with Toluene or Xylene
- Solids by Volume _____ 89.6%
- Recommended Film Thickness (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 +01 440-937-6218.*

ADVANCED POLYMER COATINGS

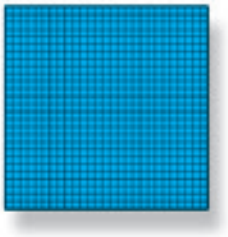
The Technology; Epoxies, Vinylesters and ChemLine® 784/32 Form 3 Dimensional Screen-Like Structures when Cured

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



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

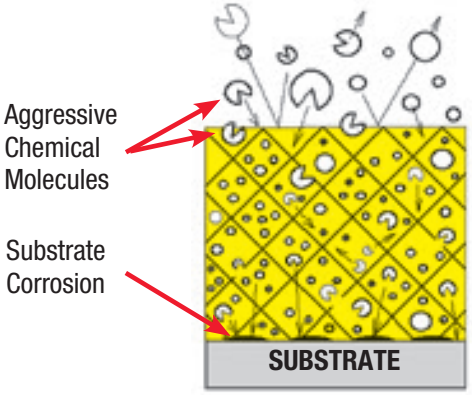
Epoxy
2 Functionality
Forms 4 Cross-links



ChemLine® 784
High 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.

ChemLINE® 784/32

- **High functionality forming up to 784 crosslinks**
- **Majority of crosslinks are through Ether (C-O-C) bonds. Ether bonds are one of the strongest bonds in chemistry. Ether bonds give flexibility with chemical resistance.**

Superior Corrosion Resistance Performance

This is Only A Reference Guide. This is an abbreviated listing of the more than 5,000 chemicals that have been tested. This information is intended to serve as a reference guide only. The end user is responsible for determining if ChemLine® is the appropriate coating for the specific application involved. Contact your ChemLine® Representative or the ChemLine® Customer Service Hotline +01 440-937-6218 for detailed specifications prior to any final coatings recommendation or application.

	ChemLine®	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

	ChemLine®	Phenolic Epoxy	Vinylester	Stainless Steel
Flaked Stearic Acid	A	N	A	A
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
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
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®	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

A = Good at ambient temperatures L = Limited Service N = Not recommended
* ChemLine® 2400 Series ** ChemLine® 784 Series

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

ChemLINE® 784/32

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® 784/32 represents a quantum leap in chemical resistant polymer coatings.

Add to Your Profits — Specify ChemLine® 784/32

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.

Advanced Polymer Coatings is an...

ABS Certified Manufacturing Company
ISO 9001: 2008
Certificate No. 43217

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