

ChemLINE[®]

*High Performance Industrial Coatings for
Aggressive Applications.*



APPLIED CONVEYOR
AND POLYMERS LTD.



ADVANCED
POLYMER COATINGS

▶ ChemLine® Presents a History of Performance

ChemLine® coatings from Advanced Polymer Coatings provide high performance corrosion protection. They are engineered using unique polymer technology to deliver excellent resistance to a wide range of aggressive chemicals.

ChemLine® coatings offer outstanding features and benefits, which can include:

- ▶ Resistance to aggressive chemical exposures, including strong acids, alkalis, gases, solvents and oxidizers
- ▶ Superior bond strength and adhesion to steel substrates and concrete
- ▶ Non permeable film minimizing cargo absorption and assuring content purity
- ▶ Wear and abrasion resistance
- ▶ Impact resistance
- ▶ Outstanding flexibility
- ▶ Steam cleanable
- ▶ Field repairable
- ▶ Compliant to FDA 21 CFR 175.300
- ▶ High temperature resistance up to 500°F (260°C)
- ▶ Thermal cycling resistance -40° to +400°F (-40° to 204°C)
- ▶ Resists hydroblasting
- ▶ Excellent conductive / static dissipating properties
- ▶ Low surface tension
- ▶ ChemLine® is generally recognised as safe (GRAS) for food grade cargoes. ChemLine® coating complies with the U.S.A. FDA and all applicable food additive regulations.

For the most current application and technical information, contact Applied Conveyor and Polymers Ltd., and Advanced Polymer Coatings customer service departments.



ChemLine® Portfolio of Products

This is Only A Reference Guide

Contact your ChemLine® Representative for detailed specifications prior to any final coatings recommendation or application.

PRODUCT NAME	TEMP RATING	CURE SCHEDULE	APPLICATION METHOD	SYSTEM DFT	TYPICAL APPLICATIONS	FEATURES & BENEFITS
ChemLine® 784/32	-40°F to +400°F (-40°C to 204°C)	180°F to 300°F (6 hours) (82°C - 149°C)	SP,BR,RL	12-14 mils (steel)	Reactors, chemical storage tanks, scrubbers, piping, ducts, rail cars, ISO tanks, OTR tankers, & barges	* GRAS recognised. Excellent chemical resistance. Low temperature cure.
	-40°F to +400°F (-40°C to 204°C)	Ambient (5-15 days)	SP,BR,RL	12-14 mils (steel) 20-24 mils (concrete)	Secondary containment, clean rooms, structural steel, manhole covers/ vaults, floors	Ambient cure. Excellent chemical resistance.
ChemLine® 784/31	-40°F to +500°F (-40°C to 260°C)	250°F to 350°F (6 hours) (121°C - 177°C)	SP,BR,RL	12-14 mils (steel)	Tanks, pipes, & scrubbers	High temperature resistance. Best chemical resistance at high temperature.
ChemLine® 2400/32	-40°F to +400°F (-40°C to 204°C)	180°F to 300°F (6 hours) (82°C - 149°C)	SP,BR,RL	16-18 mils (steel)	Slurry tanks, scrubbers, dump trucks, bag houses, FGD units, tank containers, hopper cars, & ion exchange vessels	Outstanding abrasion resistance. Excellent chemical resistance. Low temperature cure.
	-40°F to +300°F (-40°C to 148°C)	Ambient (5-14 days)	SP,BR,RL	24-26 mils (concrete)	Slurry tanks, pipes, secondary containment, sumps, trenches, pits, & clarifiers	Ambient cure. Outstanding abrasion resistance. Excellent chemical resistance.
ChemLine® 2400/31	-40°F to +500°F (-40°C to 260°C)	250°F to 350°F (6 hours) (121°C - 177°C)	SP,BR,RL	12-14 mils (steel)	Tanks, pipes, & scrubbers	High temperature resistance. Best chemical resistance at high temperature.
ChemLine® LE	-40°F to +500°F (-40°C to 260°C)	250°F to 350°F (6 hours) (121°C - 177°C)	SP,BR,RL	12-14 mils (steel)	Stacks, ducts, heat exchangers, pressure vessels, FGD systems, bag houses, & scrubbers	High temperature resistance. Best chemical resistance at high temperature. Excellent CTE match with steel.
ChemLine® AS	-40°F to +400°F (-40°C to 204°C)	180°F to 300°F (6 hours) (82°C - 149°C)	SP,BR,RL	12-14 mils (steel)	Ducts, structural steel	Excellent conductive and static dissipative properties. Excellent chemical resistance.
	-40°F to +400°F (-40°C to 204°C)	Ambient (5-15 days)	SP,BR,RL	12-14 mils (steel) 20-24 mils (concrete)	Solvent rooms, clean rooms, munitions storage/manufacturing, paint mix kitchens	Excellent conductive and static dissipative properties. Excellent chemical resistance.
ChemLine® TDC	-40°F to +500°F (-40°C to 260°C)	200°F to 400°F (3-6 hours) (93°C - 204°C)	SP	30-60 mils (steel)	HOT steel structures, steam pipes	Temperature dissipating coating for hot steel surfaces where heat can cause injury.
ChemLine® Primer	-40°F to 200°F (-40°C to 93°C)	Ambient	SP,BR,RL	3-4 mils (concrete)	Secondary containment tanks	Superior bonding & sealing properties.
ChemLine® Caulk	-40°F to +212°F (-40°C to 100°C)	Ambient	Trowel	See data sheet	Covings, cracks, & joints	Excellent chemical resistance & flexibility. (Pre-measured quart kits).
ChemLine® Putty	-40°F to +250°F (-40°C to 121°C)	Ambient to 300°F (149°C)	Trowel	See data sheet	Pitted steel & chime areas	Excellent chemical resistance & flexibility. (Pre-measured quart kits).

Key SP= Spray Application BR= Brush Application RL= Roller Application

NOTE- The Roller and Brush application is NOT a preferred application to use on steel; only use for repair or stripe coating.

*ChemLine® is generally recognised as safe (GRAS) for food grade cargoes. ChemLine® coating complies with the U.S.A.

FDA and all applicable food additive regulations.

www.adv-polymer.com

The furnishing of the information contained herein does not constitute a representation by Advanced Polymer Coatings (APC) that any product or process is free from patent infringement claims of any third party, nor does it constitute the grant of a license under any patent of APC or any third party. APC assumes no liability for any infringement which may arise out of the use of the product. APC warrants that its products meet the specifications which it set for them. APC DISCLAIMS ALL OTHER WARRANTIES and relating to the products and DISCLAIMS ALL WARRANTIES RELATING TO THEIR APPLICATION expressed or implied INCLUDING but not limited to warranties of MERCHANT ABILITY AND FITNESS for particular purpose. Receipt of products from APC constitutes acceptance of the terms of the Warranty; contrary provisions of purchase orders not withstanding. In the event that APC finds that products delivered are off-specification, APC will at its sole

discretion, either replace the products or refund the purchase price thereof. APC's choice of one of these remedies shall be Buyer's sole remedy. APC will under no circumstances be libeled upon for consequential damages except in so far as liability is mandated by law. APC will deliver products at agreed upon times in so far as it is reasonably able to do so, but APC shall not be liable for failure to deliver on time when the failure is beyond its reasonable control.

Advanced Polymer Coatings is an...



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

▶ ChemLine® Serves a Range of Industrial Markets

ROAD & RAIL TRANSPORTATION

ChemLine® coatings provide advanced tank coating protection for over-the-road vehicles, railcars, and barges. ChemLine®'s unique cross-linked polymer structure does not allow a chemical cargo to permeate the lining, thus providing corrosion resistance while ensuring product purity.



TANK (ISO) CONTAINERS

APC offers high performance ChemLine® coatings for tank lining applications including tank containers (ISO tanks), intermediate bulk containers (IBCs), and bulk storage tanks, depending on specific needs of the product tanker container owner/transport manager.



CHEMICAL PROCESSING

At chemical plants facilities, ChemLine® offers optimal protection against acids, caustics and solvents. Wherever hazardous chemicals pose problems – tanks, pipes, stacks, digesters, and in or around processing equipment – ChemLine® delivers superior long-term service.





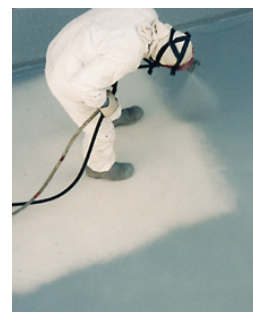
PETROLEUM & REFINING

ChemLine® coatings provide superior protection and corrosion resistance throughout petroleum production and refining facilities. Even at elevated temperatures, ChemLine® coatings delivers an impermeable lining system that resists chemical and corrosive attacks.



TANK STORAGE & TERMINALS

At storage facilities, ChemLine® protects tanks against aggressive acids, alkalis, solvents, CPPs, and edible oils, even at elevated temperatures. ChemLine® polymer coatings are 97% solids with extremely low VOCs, making them the preferred lining system for bulk chemical storage tanks



POWER GENERATION

Durable ChemLine® coatings are specified to handle aggressive applications at power plants such as flue gas desulphurization systems and scrubbers, stacks, linings, ducts, chimneys, spray towers and fans. ChemLine® delivers chemical resistance and high heat capability to 500°F (260°C).





Superior Corrosion Resistance Performance

	ChemLine® 784/32	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	A	N	N	A
Ammonium Persulphate	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	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
Fluoroboric Acid	A	N	—	N

	ChemLine® 784/32	Phenolic Epoxy	Vinylester	Stainless Steel
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 Sulphate	A	N	A	A
5%-12% Hypochlorite Bleach	A	N	A	N
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	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

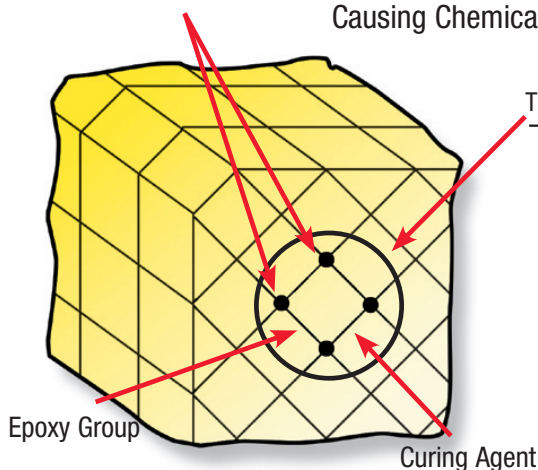
	ChemLine® 784/32	Phenolic Epoxy	Vinylester	Stainless Steel
Norval Amine	A	N	N	A
Octanoic Acid	A	A	—	A
Orthonitro Benzene	A	N	N	N
Oleum	A	N	N	A
Olive Oil Fatty Acid	A	A	A	A
Palm Oil Fatty Acid	A	A	A	A
Perchloroethylene	A	N	N	A
Perchloric Acid	A	N	N	N
Phenol	A	N	N	A
Phosphoric Acid	A	N	A	N
Phthalic Anhydride	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 Hypochlorite	A	N	A	N
Sodium Sulfide	A	A	N	N
Stannic Chloride	A	A	A	N
Stearic Acid	A	A	A	A
Spent Sulphuric Acid	A	N	N	A
Sulphur	A	N	N	A
Sulphuric Acid 1-70%	A	A	A	N
Sulphuric 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

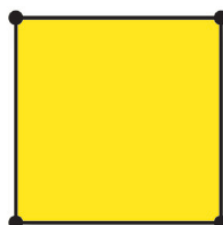
Corrosion resistance data for Phenolic Epoxy, Vinylester and Stainless Steel from published literature.

ChemLine®, Epoxies, and Vinylesters Form 3 Dimensional Screen-Like Structures when Cured

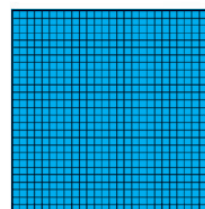
The Greater the Distance Between the Crosslinks, the Greater the Permeation
Causing Chemical Attack and Absorption



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



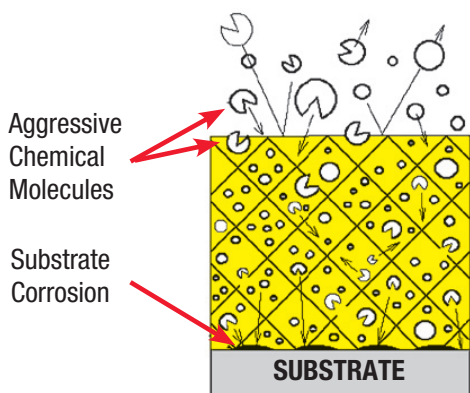
Epoxy
2 Functionality
Forms 4 Cross-links



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

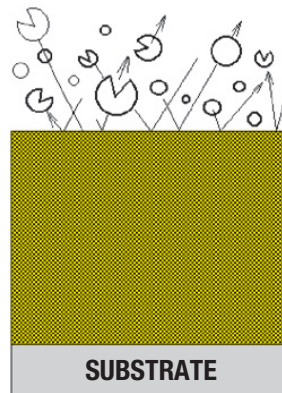
Problems with Epoxies and Vinylesters

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.

ChemLINE® 784/32

- ▶ 28 functionality forming 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.
- ▶ No ester groups





APPLIED CONVEYOR

AND POLYMERS LTD.

Also specialises in:

- Rubber Conveyor Belt
- Chevron Rubber Belt
- Lightweight PVC/PU Belt
- Linatex Rubber Linings
- Rulmeca Idlers
- Mato Cleaners
- Polo Citrus Dust Suppression
- Polyurea Coatings
- 24/7 Onsite Maintenance
- High Performance Industrial Coating

Auckland Branch

ph: (09) 640-0034
fax: (09) 267-6080
sales@apcon.co.nz

51 Adams Dr, Pukekohe
Auckland, New Zealand

P.O. Box 554, Drury 2247,
Auckland, New Zealand

Rotorua Branch

Robert McGinley
027 271 2871
rob@apcon.co.nz

ph: (07) 343-6292
fax: (07) 343-6293

35 Depot Street,
Rotorua, New Zealand

Oamaru Branch

Alex Valentine
021 374 404
red@apcon.co.nz

ph: (03) 437-0145
fax: (03) 437-0146

5/7 Industrial Place, Oamaru
South Island, New Zealand

For more information visit www.appliedconveyor.co.nz/

