

494 Epoxy Novalac Tank Lining

Product Data

- Exceptional resistance to a wide range of chemicals and solvents
- Provides exceptional resistance over a wide range of temperatures and pressures
- Practical application properties and cure schedules
- Does not require baking to cure
- High volume solids; two coat system

Typical Uses

- Cargo tanks in chemical tankers and barges
- High pressure crude oil pipe and separation tanks
- Protective coating for highly corrosive environments

System - 2 stripe coats on all sharp edges, cutouts and welds.

- 2 coats of **Khemix 494** Lining, 5-6 mils (125 to 150 microns) per coat. Use contrasting colors for each coat and stripe coat.

Note: The maximum dry film thickness of the **Khemix 494** system is 18 mils (450 microns). Dry film thickness above 18 mils (450 microns) could reduce the service life of the coating.

Chemical Resistance

For a comprehensive listing of chemical resistance see the latest Chemical Resistance List.

Physical Data

Finish	Semigloss	
Color	Gray, white, pastel red	
Components	2	
Curing mechanism	Solvent release and chemical reaction between components	
Volume solids (calculated)	72% ± 3%	
Dry film thickness per coat	5-6 mils (125-150 microns)	
Coats	2 or 3	
Total minimum DFT		
Ship tanks	10-21 mils (250-300 microns)	
Maximum total DFT	18 mils (450 microns)	
Theoretical coverage	ft ² /gal	m ² /L
1 mil (25 microns)	1155	28.4
4 mils (100 microns)	289	7.1
VOC	lb/gal	g/L
mixed	1.67	200
Temperature resistance	Wet	Dry
	Refer to Standard	°F °C
	Resistance List	300 149
Flash point(SETA)	°F	°C
Khemix 494 converter	118	48
Khemix 494 base	108	42
T-10	80	27
Khemix 012	2	-17

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Application Data

Applied over	Prepared steel, concrete, aluminum
Surface preparation	
Steel	SSPC-SP5 or 10
Concrete	ASTM D4259 or 4260
Aluminum	Light abrasive blast
Method	Airless or conventional spray
Mixing ratio (by volume)	4 parts base to 1 part converter
Induction time	15 minutes @ 70°F (21°C)
Thinner	T-10
Equipment cleaner	Thinner or Khemix 012

Typical Properties

Property	Method	Result
Abrasion Resistance	ASTM D 4060, CS-17 1000 gram load, 1000 cycles	90mg loss
Adhesion	ASTM D 4541	900-1100 psi
Exterior Exposure	Exposed in Florida facing 45°	No effect on film integrity or adhesion. Film Yellow
Humidity Resistance	ASTM D 2247, 1000 hours	No effect on film integrity or adhesion. Less than 1/32 inch rust creepage at scribe and less than 0.5% rust at edges.
Impact Resistance	ASTM D 2794	70 inch-pounds
Moisture Permeability	ASTM D 96	0.7 perms
Pencil Hardness	ASTM D 3363	6H
Salt Fog Resistant	ASTM B 117	No effect on film integrity or adhesion. Less than 1/16 inch rust creepage at scribe and less than 0.5% rust at edges.
Tensile Strength	ASTM D 2370	1741 psi
Modulus	ASTM D 2370	192,400 psi
Flexural Strength (Yield Strength)	ASTM D 790	3487 psi
Hardness (Durometer)	ASTM D 2240 (Type D)	83
Water Immersion	ASTM D 1308, 2 years	No effect

Adhere to all instructions, precautions, conditions, and limitations to obtain maximum performance. For conditions outside the requirements or limitations described contact your **Khemix** representative.

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Surface Preparation

Coating performance is, in general, proportional to the degree of surface preparation. All surfaces must be clean, dry and free of all contamination, including salt deposits before applying coating.

Steel – New without pits or depressions – blast SSPC – SP10 (Sa 2½).

Rusted or pitted – blast SSPC – SP5 (Sa 3).

Blast to achieve a 1½ mils (37 microns) minimum profile as determined with a Keane-Tator Surface Profile Comparator, Testex Tape or similar device. Remove abrasive residue or dust from surface.

Apply coating as soon as possible to prevent rusting. Keep moisture, oil, grease or other organic matter off surface before coating. Spot blast to remove any contamination, solvent wiping is not adequate.

Fill small holes or voids with Nu-Klad® 114A after applying the first coat of **Khemix 494**.

Concrete – Clean concrete and masonry surface; abrasive blast (ASTM D 4259) or acid etch (ASTM D 4260).

Fill small holes or voids with Nu-Klad® 114A before applying **Khemix 494**.

Aluminum – Remove oil, grease or soap film with neutral detergent or emulsion cleaner; blast lightly with fine abrasive.

Application Equipment

The following is a guide; suitable equipment from other manufacturers may be used. Changes in pressure, hose and tip size may be needed for proper spray characteristics.

Airless spray – Standard equipment, such as Graco Bulldog Hydra-Spray, or larger, with a 0.017 – to 0.025 – inch orifice.

Conventional spray – Industrial equipment, such as DeVilbiss MBC or JGA spray gun, and a pressure material pot with mechanical agitator. A moisture and oil trap in the main air supply and separate regulators for air and fluid pressure are required.

Power mixer – Jiffy mixer powered by an air or explosion proof electric motor.

Environmental Conditions

Temperature	°F	°C
Air	50 to 100	10 to 43
Surface	50 to 120	10 to 49

Surface temperature must be least 5°F (3°C) above dew point to prevent condensation.

Application Data

1. Flush all equipment with thinner or **Khemix 012** cleaner before use.
2. Stir base component thoroughly, then add converter to resin and mix until uniform.
Induction time 15 minutes @ 70°F (21°C). **Khemix 494** is packaged in the proper mixing proportions of base and converter. Do not mix more material than will be used within pot life time.

Pot life	°F/°C			
	100/38	90/30	70/21	50/10
	1	2	4	6



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3. If necessary for workability, use no more ½ pint of thinner per gallon of **Khemix 494** for airless or conventional equipment.

Thinner

4. When applying by conventional spray, use adequate air pressure and volume to ensure proper atomization.
5. Apply a wet coat in even parallel passes; overlap 50 percent to avoid holidays, bare areas and pinholes and to achieve a dry film thickness of 5-6 mils (100-150 microns).

	Drying time (ASTM D 1640)(hours)		°F/°C	
	100/38	90/32	70/21	50/10
Hard	2	6	15	26
Through	6	12	22	36
recoat				
Minimum	3	4	10	24
Maximum	18	24	96	144

Roughen surface if maximum recoat time is exceeded.

Curing time for immersion service*

Steel substrate		Ambient cure		
Temperature		Heat cure*	12 mils/300µ	18 mils/450µ
°F	°C	hour	days	days
160	71	4	NA	NA
140	60	8	NA	NA
122	50	24	NA	NA
104	40	96	NA	NA
86	30	NA	4	6
70	21	NA	7	9 ½
59	15	NA	10	13
50	10	NA	14	19

After application and during the above curing schedule tanks must be ventilated to prevent solvent entrapment.

Ventilation – It is very important for the safety of the applicator and the proper performance of the **Khemix 494** coating that good ventilation be provided to all portions of the enclosed area. Recommended tanks ventilation involves two important phases. Phase one is to pump fresh, dehumidified air into all areas of the tanks, especially “dead air” areas. Phase two is to exhaust, via an explosion proof exhaust fan, the solvent vapors from the lowest portion of the tanks. This practice of pumping fresh air into the tank and exhausting solvent vapors out of the lowest parts of the tanks should be provided throughout the application and curing processes. This practice is to insure that all solvents are removed from the coating. Tanks must be cured 7 days at 70°F (21°C) with ventilation before being put into service. At lower temperatures, longer cure times are required.

6. Check dry film thickness using nondestructive dry film thickness gauge such as Mikrotest or Elcometer. If less than the specified thickness, apply additional material. Total dry film thickness must not exceed 18 mils (450 microns) in 2 coats, and must not be less than 8 mils (200 microns).
7. When a pinhole – free coating is required, check continuity or dry but uncured coating with a nondestructive holiday detector such as Tinker-Razor Model M-1. Apply additional coats to areas requiring touch-up.



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8. After use, clean equipment immediately with thinner or **Khemix 012**

Safety Precautions

Read each component's material safety data sheet before use. Mixed material has hazards of each component. Safety precautions must be strictly followed during storage, handling and use. **CAUTION – Improper use and handling of this product can be hazardous to health and cause fire or explosion. Do not use this product without first taking all appropriate safety measures to prevent property damage and injuries. These measures may include, without limitation: implementation of proper ventilation, use of proper lamps, wearing of proper protective clothing and masks, tenting and proper separation of application areas. Consult your supervisor. Proper ventilation and protective measures must be provided during application and drying to keep spray mists and vapor concentrations within safe limits and to protect against toxic hazards. Necessary safety equipment must be used and ventilation requirements carefully observed, especially in confined or enclosed spaces, such as tanks interiors and buildings.**

This product is to be used by those knowledgeable about proper application methods. Alspec makes no recommendation about the types of safety measures that may need to be adopted because these depend on application environment and space, of which Alspec is unaware and over which it has no control.

If you do not fully understand these warnings and instructions or if you cannot strictly comply with them, do not use the product.

Note: Consult Code of Federal Regulations Title 29, labor, parts 1910 and 1915 concerning occupational safety and health standards and regulations, as well as any other applicable federal, state and local regulations on safe practices in coating operations.

This product is for industrial use only. Not for residential use.

Shipping Data

Packaging unit	1 gal	5 gal
converter	0.20 gal in 1-qt can	1 gal in 1-gal can
base	0.80 gal in 1-gal can	4 gal in 5-gal can
Shipping weight(approx)	lb	kg
1-gal unit		
converter	1.9	0.9
base	10.4	4.7
5-gal unit		
converter	10.4	4.7
base	51.8	23.5

Shelf life when stored indoors at 40 to 100°F (4 to 38°C)

1 year from shipment date

Numerical values are subject to normal manufacturing tolerances, colour and testing variances. Allow for application losses and surface irregularities. See application instructions for complete information and safety precautions.

This mixed product is photochemically reactive as defined by the South Coast Air Quality Management District's Rule 102 or equivalent regulations.



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Warranty

Alspect warrants its products to be free from defects in material and workmanship. Alspect's sole obligation and Buyer's exclusive remedy in connection with the products shall be limited, at Alspect's option, to either replacement of products not conforming to this Warranty or credit to Buyer's account in the invoiced amount of the nonconforming product. Any claim under this Warranty must be made by Buyer's to Alspect in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life, or one year from the delivery date, whichever is earlier. Buyer's failure to notify Alspect of such nonconformance as required herein shall bar Buyer from recovery under this Warranty.

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