

3M

Scotchkote™

324 Liquid Epoxy Coating

Product Description

3M™ Scotchkote 324 Liquid Epoxy Coating is designed to protect metal from corrosion and is particularly useful in coating tanks, valves, piping and special fabrications where a wide range of chemical resistance is required. The coating is a heat-cured, two-part, thermosetting, 83 percent solids liquid epoxy that may be applied using conventional air or airless spray equipment. A coating thickness up to 10 mils/254 µm can be obtained in one application without sag. The applied coating B-stages at ambient temperature to a hard gel, allowing inspection and repair prior to cure.

Features

- Easy 1 to 1 mix ratio by weight or 100 to 85 by volume.
- High build, 10 mils/254 microns in one application.
- Long pot life.
- Applicable with standard air or airless spray equipment.
- B-stages to allow inspection and repair before curing.
- High level of adhesion.
- Protects over wide temperature range.
- Excellent chemical resistance.
- Resists cathodic disbondment.
- Long-term performance history in varying service environments.

General Application Steps

1. Remove oil, grease and loosely adhering deposits.
2. Abrasive blast clean the surface to NACE No. 2/SSPC-SP 10 ISO 8501:1, Grade SA 2 1/2 near-white metal.
3. Apply Scotchkote 324 coating at the specified thickness.
4. B-stage the coating.
5. Visually or electrically inspect the coating for defects.
6. Repair all defects using Scotchkote 324.
7. Cure according to cure guide.

*For additional application instructions please refer to the Scotchkote 324 liquid epoxy coating application guide.

Operating Temperature Limits

Laboratory data indicates that Scotchkote 324 coating, when properly applied and cured, should perform in a

satisfactory manner at temperatures up to 140°F/60°C in wet environments and between 100°F/73°C and 350°F/177°C in dry environments. It is, however, difficult to accurately predict field performance from laboratory data due to the wide variation in actual field conditions.

Cure Specification

Scotchkote 324 coating must be cured according to the cure guide to achieve maximum performance properties.

Cure Guide

Temperature	Cure Time
350°F/177°C	15 minutes
300°F/149°C	30 minutes
250°F/122°C	60 minutes
200°F/97°C	24 hours

Typical Properties

Property	Value
Color	Light brown
Mix Ratio	1A to 1B by weight 100A to 85B by volume
Coverage without waste	140ft ² /lb/mil 0,65 m ² /kg/microns
Flash Point	
Part A	400°F/204°C
Part B	51°F/11°C
Shelf Life, unmixed closed container	24 months
Pot Life 10 lb./4.5 kg	
73°F/23°C	16 hours
85°F/29°C	7.5 hours
100°F/38°C	1.5 hours
Density	Side A - 10 lb./Gal. Side B - 11.1 lb./Gal.
Viscosity, CPS, 73°F/23°C	59,500

3M Scotchkote 324 Liquid Epoxy Coating - Test Data

Property	Test Description	Results
Impact	Gardner 5/8 in. 1,6 cm diameter tup 1/8 in. x 3 in. x 3 in. (0,32 cm x 7,6 cm x 7,6 cm) steel panel	Reverse - 110 in•lbs/1.21 kg•m
Abrasion Resistance	ASTM D 1044 CS-17 1000 g weight 5000 cycles	0.22 g loss
Adhesion to Steel (Shear)	ASTM D 1002 10 mil/254 µm glue line	2700 psi 2 189 kg/cm ²
Hardness	Shore D	50-75
Thermal Conductivity (cm)	MIL-I-16923E	5.8 x 10 ⁻⁴ cal/(sec)(cm ²)(°C/
Thermal Shock	310°F/154°C to -320°F/-195°C coated pipe	10 cycles no effect
Water Absorption	3M 10 mil/254 µm free film immersion 30 days	0.119 g/ft 1.29 g/m
Salt Spray	ASTM B 117	Pass
Weatherometer	ASTM E 42 1000 hours	Surface chalking
Cathodic Disbondment	5.0 volts; 230°F/110°C, 30 days	11 mm r

Chemical Resistance Exposure at 73°F/23°C

* Acetic acid up to 50%	* Crude Oil	* Methanol	* Sodium Hydroxide
* Acetone 100%	Cyclohexane	* MIBK (Methyl Isobutyl Ketone)	* Sodium Hypochlorite
* Aluminum Chloride	Cyclohexene	* Mineral Oil	* Sodium Meta Silicate up to 5%
* Aluminum Hydroxide	Cyclopentane	* Mineral Spirits	Sodium Nitrate
* Aluminum Nitrate	Detergent	* Molasses	Sodium Sulfate
* Aluminum Sulfate	* Diesel Fuel	* Motor Oil	* Sodium Thiosulfate up to 50%
Ammonium Carbonate	* Diethylene Glycol	Muriatic Acid	Stannic Chloride
* Ammonium Chloride	Dipropylene Glycol	* Naphtha	Sulfur
* Ammonium Hydroxide up to 29%	* Ethanol	Nickel Chloride	* Sulfuric Acid up to 50%
Ammonium Nitrate	* Ethylbenzene	Nickel Nitrate	* Synthetic Sea Fuel (60% Naphtha, 20% Toluene, 15% Xylene, 5% Benzene)
Ammonium Phosphate	* Ethylene Glycol	Nickel Sulfate	* Trisodium Phosphate
Ammonium Sulfate	* Ferric Chloride up to 50%	Nitric Acid up to 30%	* Turpentine
Amyl Alcohol	* Ferric Sulfate	Nonane	Undecanol
Barium Carbonate	* Ferrous Nitrate	* Octane	* Urea
Barium Chloride	* Ferrous Sulfate	* Oxalic Acid	* Urine
Barium Hydroxide	* Formaldehyde up to 50%	* Pentane	* Vinegar
Barium Nitrate	* Formic Acid up to 10%	* Perchloroethylene	* Water
Barium Sulfate	Freon, Gas and Liquid	* Phosphoric Acid up to 50%	* Demineralized
* Benzene	* Gas (Mfg)	* Phosphorous Trichloride	* Distilled
Boric Acid	* Gas (Natural)	* Potassium Aluminum Sulfate	* Fresh
* Borax	* Gasoline Leaded	Potassium Bicarbonate	* Salt
Butyl Alcohol	* Gasoline Unleaded	Potassium Borate	* Sea
* Cadmium Chloride	* Glycerine	Potassium Carbonate	* Xylol
Cadmium Nitrate	* Heptane	Potassium Chloride	Zinc Chloride
Cadmium Sulfate	Haxane	* Potassium Dichromate up to 10%	Zinc Nitrate
* Calcium Carbonate	Hexylene Glycol	* Potassium Hydroxide	Zinc Sulfate
* Calcium Chloride	Hydrochloric Acid up to 25%	* Potassium Nitrate	* 10-10-10 Fertilizer, Saturated
* Calcium Hydroxide	* Hydrogen Sulfide	Potassium Sulfate	
* Calcium Nitrate	* Isopropyl Alcohol	Propylene Glycol	
* Calcium Sulfate	* Jet Fuel	* Sewage	
Carbon Disulfide	* Kerosene	Silver Nitrate	
* Carbon Tetrachloride	* Linseed Oil	* Soap Solution	
Caustic Potash	* Lubricating Oil	* Soaps	
* Caustic Soda	Magnesium Carbonate	* Sodium Bicarbonate	
* Citric Acid up to 25%	Magnesium Chloride	* Sodium Bisulfate	
Copper Chloride	Magnesium Hydroxide	* Sodium Carbonate	
Copper Nitrate	Magnesium Nitrate	* Sodium Chlorate	
Copper Sulfate	Magnesium Sulfate	* Sodium Chloride	
	Mercuric Chloride		

* Also tested at 140°F/60°C for 9 months. No degradation observed.

Handling and Safety Precautions

Read all Health Hazard, Precautionary, and First Aid statement found in the Material safety Data Sheet (MSDS) and /or product label prior to handling or use.

Important Notice

All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product which are not contained in 3M's current publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.



Corrosion Protection Products

6801 River Place Blvd.
Austin, TX 78726-9000
<http://www.3M.com/corrosion>

Ordering Information/Customer Service

For ordering information, technical information, product information, or to request a copy of the Material Safety Data Sheet:

Phone: 800/722-6721 or 512/984-9385

Fax: 877/601-1305 or 512/984-6296

Warranty; Limited Remedy; Limited Liability.

This product will be free from defects in material and manufacture for a period of one (1) year from the time of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.**

Please recycle

Litho in USA.
© 3M 2006 80-6111-8356-9 Rev. A