

TECHNICAL DATA

Product Description

Mult-E-Poxy 180 Polyamide Epoxy is a high solids, high build epoxy formulated to provide a variety of substrate types the ultimate in protection even when exposed to extreme environments. Against abrasion, moisture, corrosive fumes and chemicals, Mult-E-Poxy 180 will protect your substrates from costly deterioration. Its ability to be applied as a Mastic to tightly adhering rust, damp surfaces and most tightly adhered, existing coatings makes it a unique choice for difficult substrates. Mult-E-Poxy 180 is suitable for immersion service. Its ability to cure through a wide range of temperatures from (0°F (-17.8°C) to 120°F (48.9°C)) allows for maximum flexibility in application. Mult-E-Poxy 180 can be used with confidence as an intermediate or finish over Zinc Rich Primers. Careful formulation to minimize the use of VOCs in Mult-E-Poxy 180 allows for its use as an environmentally preferred product

Intended Uses

Apply to:

- Interior or exterior surfaces
- Galvanized Metal
- Masonry surfaces
- Composites
- Ferrous Metal
- Aluminum
- Zinc Rich Products

Protects:

- Tanks and Storage Vessels
- Conveyors
- Food processing plants
- Power generating plants
- Equipment
- Grain handling facilities
- Structural or support steel
- Petro Chemical

The above are general recommendations and not intended to limit the use of Mult-E-Poxy 180. Test areas are always recommended to confirm results.

Physical Properties

Resin Type	2 Component Polyamide Epoxy Mastic				
Finish/Sheen	Semi-Gloss, 45 – 55 @ 60°				
Colors	Cotton White, Silver Gray, Jet Black, Safety Red, Safety Yellow, Safety Orange, Safety Blue, Safety Green and Aluminum. Can also be tinted to ICS Color System.				
Bases (Part A)	White Base LF-1231, Deep Base LF-1233, Clear Base LF-0235 Tintable in "ICS".				
Cure (Part B)	Standard Cure LM-0216, Fast Dry/Low Temperature Cure LM-0217				
Solids By Weight	87.2 % ± 2%				
Solids by Volume	79% ± 2%				
Theoretical Coverage	1270 ft²/gal @ 1 mil				
Dry Film Thickness / Coat	5.0 – 10.0 mils (125-250 microns)				
Wet Film to Achieve DFT	6.3 – 13.0 mils (157.5-325 microns)				
Coverage at DFT*	127 - 254 ft²/gal @ 5.0 – 10.0 mils DFT				
VOCs	Maximum 1.92 lbs/gal (230 grams/liter) Activated (no colorant added)				
Reduction Solvents	Standard Cure: Diamond Vogel N-3023 Xylol (up to 1/2 pint per gallon) FD Cure: Diamond Vogel N-3023 Xylol (up to 1/2 pint per gallon) Maximum VOC Does Not Exceed 2.37 lbs/gal (284 g/L) activated and reduced				
Clean-up Solvents	Diamond Vogel N-3023 Xylol				
Induction Time	None				
Mixing Ratio (by volume)	1 part resin to 1 part cure. Product packaged in pre-measured kits.				
Pot Life **	Standard Cure is 2-3 hours at 70°F (21°C) and 50% Relative Humidity FD Cure is ½ -1 hour at 70°F (21°C) and 50% Relative Humidity				
Drying Time*** [ASTM D1640]					
Set to Touch (hours)	At 90°F (32°C)	At 70°F (21°C)	At 50°F (10°C)	At 32°F (0°C)	At 20°F (-6.7°C)
Mult-E-Poxy 180	3 hours	4 hours	10 hours	20 hours	N/A
Mult-E-Poxy 180FD/LT Cure	2 hours	3 hours	6 hours	11 hours	48 hours
Dry Through***					
Mult-E-Poxy 180	4 hours	9 hours	28 hours	80 hours	N/A
Mult-E-Poxy 180FD/LT Cure	3 hours	7 hours	14 hours	38 hours	96 hours

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Physical Properties (Continued)

Recoat/Topcoat Time***[At 70°F (21°C)]	Minimum Recoat	Maximum Recoat
Mult-E-Poxy 180 with Itself	9½ - 11 hours	12 months
Mult-E-Poxy 180FD/LT Cure with Itself	7 - 9 hours	12 months
Mult-E-Poxy 180 w/other coatings	9½ - 11 hours	2 months
Mult-E-Poxy 180FD/LT Cure w/other coatings	7 - 9 hours	1 months

* Coverage rates are estimates based on the products volume solids and make no allowance for material loss during application. Actual spread rates may vary dependent on applicator experience, surface porosity and texture.

** Extreme temperatures can dramatically shorten Pot life.

*** Dry and Recoat times vary with surface temperature, air movement, humidity and film thickness. Standard cure time for immersion is 7 days. Fast Dry cure time for immersion is 3 ½ days. Finish coat selection may extend maximum recoat, please request additional information by contacting Diamond Vogel Technical Service for detailed information.

Performance Characteristics

Mult-E-Poxy 180 will meet or exceed the following performance testing criteria:

Test Name	Test Method	Results
Abrasion Resistance	ASTM D 4060, CS-17 Wheel 1kg Load, 1000 Cycles	No more than 165 mg loss
Cyclic Weathering	ASTM G 85 Annex A5 2,000 hours	No face blistering, no rusting. 3-6 mm scribe creepage
Corrosion Resistance	ASTM B 117-94 Salt Spray (Fog) Test 2000 hours	No face blistering, no face rusting, 1-2 mm scribe creepage.
Adhesion – Crosshatch	ASTM D 3359 Cross Hatch	Not less than a rating of 4B average on 3 trials.
Adhesion - Elcometer	ASTM D 4541 Elcometer Pull Off Adhesion	Not less than 900 PSI, pull average on 3 trials.
Exterior Exposure	ASTM D 1014-83. Reapproved 1988. Exposed at south 45°.	Miami, FL, No face blistering, no face rusting, 0.8-1.6 mm scribe crip page, 12 months exposure. Orange City, IA, No face blistering, no face rusting and no scribe crip page, 17 months exposure.
Fresh Water Immersion	Coating system was applied to an abrasive blasted steel panel. Cured for 17 days and immersed in tap water at 70°F (21°C)	No blistering, cracking, rusting or delamination of film after 12 months exposure.
Pencil Hardness	ASTM D 3363-74	“B” pencil hardness
Heat Resistance	ASTM D 2485 High Temperature Service	Passes @ 250°F (121°C)
Impact Resistance	ASTM 2794	Direct 35 in/lbs, Reverse 5 in/lbs

Qualifications

Suitable for use in: USDA inspected facilities

VOC Compliant: AIM, OTC, CARB

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Chemical Resistance for Splash and Spillage

The information included in this chart reflects Mult-E-Poxy 180's resistance to these chemicals in environments where the coating may periodically come in contact with such materials. Cleaning and general maintenance will prolong the integrity of all epoxy mastic coatings. For more detailed

Chemical	Regular Cure	Fast Dry Cure	Chemical	Regular Cure	Fast Dry Cure
Solvents:			Salts and Bases:		
MEK	VG	VG	Sodium Hydr. 10%	VG	E
Toluene	VG	VG	Sodium Hydr. 50%	VG	E
Xylene	G	E	Ammonium Hydr. 10%	E	E
Unleaded Gas	VG	E	Ammonium Hydr. 50%	E	E
Denatured Alcohol	VG	VG	Nitrogen Fertilizer (Urea)	E	E
Methanol	E	E	Pot Ash	E	E
Mineral Spirits	E	E	Phosphate Fertilizer (Ammonium Phosphate)	E	E
Triethylamine	N/R	E	Nitrogen Fertilizer Solution (Ammonium Nitrate)	E	E
N-Butanol	N/R	VG	Acids:		
MIBK	G	E	Sulfuric Acid 5%	G	N/R
Isopropyl Alcohol	E	E	Sulfuric Acid 50%	G	N/R
Butyl Cellosolve	N/R	VG	HCL 5%	G	N/R
Perchlorethylene	VG	VG	HCL 10%	G	N/R
Ethylene Glycol	E	VG	Oleic	VG	VG
Oils:			Miscellaneous:		
Motor Oil	VG	E	Bleach	VG	VG
Brake Fluid	G	VG	Dowanol PM	N/R	VG
Aviation Hydraulic Fluid	VG	E	Water	E	E
Ratings: E=Excellent, VG=Very Good, G=Good, N/R= Not Recommended			Hydrogen Peroxide 3%	E	E
			TSP 1%	E	E
			TSP 10%	E	E
			Windex w/AMD	VG	VG

information, contact your local Diamond Vogel sales representative.

Surface Preparation

All surfaces must be cured, clean, sound and free of all dirt, dust, efflorescence, wax, oil, grease, chalk and any other contamination that would interfere with new coating adhesion. Surface may be damp, but not wet. Bare surfaces must be properly prepared prior to application of this product.

Masonry Surfaces: (Poured Concrete, Concrete Block): New concrete must cure for a minimum of 30 days at 72°F (22°C) prior to coating application. Level all surface projections and mortar spatters by stoning. Rake mortar joints clean and remove all soluble salts.

Ferrous Metal Surfaces: Abrasive blast new steel to SSPC-SP-6, Commercial Blast Cleaning. Use proper abrasive to achieve an average of 1.5 to 2.0 mil profile. Blasted surfaces should be primed before flash rusting occurs. If blasting is not practical, remove loose rust and mill scale per SSPC-SP-2, Hand Tool Cleaning or SSPC-SP-3, Power Tool Cleaning. Treat rust free, cold rolled steel with a metal cleaning and etching solution. For immersion application, steel substrate should be abrasive blasted per SSPC-SP-10, Near White Blast Cleaning.

New Galvanized & Aluminum Surfaces: Remove surface contamination or passivators by scrubbing with a cleaning and etching solution or blast per SSPC-SP-7, Brush-Off Blast.

Weathered Galvanized & Aluminum Surfaces: Power or hand wash with detergent and rinse thoroughly. The surface must be dull and have a profile; use a cleaning and etching solution if needed.

Previously Painted Surfaces: Power or hand washing is recommended to remove contamination. If oil or grease is present, use of a cleaner/degreaser is required. All cleaning residue must be completely rinsed from the surface. Allow to dry. Remove all loose coatings, rust and corrosion by scraping, sanding or other abrading method as per SSPC-SP-2, Hand Tool Cleaning and SSPC-SP-3, Power Tool Cleaning or abrasive blast according to SSPC-SP-6, Commercial Blast Cleaning. Use sandpaper to dull slick, glossy and/or non-porous surfaces with sandpaper.

Mildew: Remove by using a solution of one part household bleach and three parts water. Apply to mildewed area and scrub. Allow solution to remain on the surface for 3 to 5 minutes and then rinse completely and allow to dry before coating application.

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Part A (epoxy resin) and Part B (cure) have a 1:1 mixing ratio. Mix Part A and Part B separately using an explosion-proof power drill and Jiffler mixer. Add Part B to Part A and thoroughly mix and blend using an explosion-proof power drill and blade type mixer. Mix only the amount that can be used within the estimated pot life. For optimum application, air and surface temperature should be from 50° to 90°F (10° to 32°C). Above 122°F (50°C), sagging may occur. Surface temperature must be at least 5°F (3°C) above the dew point.

Brush or Roller: Apply product in full even coats. Maintain a wet edge. To insure adequate film build, two coats are recommended when applying by using a pure bristle brush or suitable roller (See Recoat/Topcoat for recoat period).

Airless Spray: Flush airless lines with Diamond Vogel N-3023 Xylol. Equipment must be clean prior to start. Thin only as needed for workability. Apply a wet coat in even, parallel passes with 50% overlap to avoid bare areas and pinholes. If required, crosshatch spray at right angles.

Tip Orifice	Atomizing Pressure	Material Hose ID	Manifold Filter
0.019" to 0.021"	2500 - 3000 PSI	1/4" - 3/8"	60 mesh

Packaging**Shipping Weight**

Product	2 Gallon Kit	5 Gallon Kit	Product	2 Gallon Kit	5 Gallon Kit
Part A Resin	1 Gallon (full filled)	5 Gallon (1/2 filled)	2 gallon kit	Standard Cure	25.5 lbs. (11.6 kg)
Part B Std Cure	1 Gallon (full filled)	2.5 Gallon (full filled)	2 gallon kit	Fast Dry Cure	25 lbs. (11.3 kg)
Part B Fast Dry Cure	1 Gallon (full filled)	2.5 Gallon (full filled)	5 gallon kit	Standard Cure	62.5 lbs. (28.4 kg)
			5 gallon kit	Fast Dry Cure	61 lbs. (27.7 kg)

Storage

Two years from date of manufacture when maintained in protected area and at temperatures of 40° to 100°F. (4° to 38°C). Subject to inspection thereafter.

Safety Precautions

***WARNING!** If you scrape, sand, or remove old paint, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and wet mop. Before you start, find out how to protect yourself and your family by contacting the national Lead Information Hotline at 1-800-424-LEAD or log on to www.epa.gov/lead.

Paint Products contain chemical ingredients, which are considered hazardous. Prior to use, read container label warnings and the current Material Safety Data Sheet for important health and safety information. Ensure these instructions are practiced during product application and cure. **Keep out of the reach of children.**

This finish may become slippery when wet. The use of a non-slip additive is recommended when used on horizontal surfaces such as porches, patios, steps or any other floor areas which are exposed to moisture. **However**, Diamond Vogel makes no guarantees or claims that this will prevent accidents. Diamond Vogel's liability is limited to the purchase price of the product.

Safety Data

"Material Safety Data Sheets" are available from the Diamond Vogel website. Prior to use of this product, obtain and review the Material Safety Data Sheet for health and safety information. Read and observe all precautionary notices on container labels. **NOT INTENDED FOR RESIDENTIAL USE.**

Limited Warranty

The technical data and suggestions for use contained in this document are true and correct to the best of our knowledge at the date of issuance. The statements of this document do not constitute a warranty, expressed or implied, as to the performance of these products. Since Diamond Vogel Paints does not control the application of its products, or the condition of the surfaces to which they are applied, Diamond Vogel Paint's liability will under no circumstances exceed replacement of the product. **All technical information is subject to change without notice.**

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-Yellowing is a normal occurrence with epoxy products. The use of heaters that emit carbon dioxide and carbon monoxide during application may cause excessive yellowing to occur.

-Epoxies will chalk and fade with extended exposure to sunlight.

WARNING!

FLAMMABLE LIQUID AND VAPOR.

CAUSES EYE AND SKIN IRRITATION.

Contains: Epoxy Resin, Propylene Glycol Butyl Ether, Xylene, #150 Aromatic Solvent and Crystalline Silica. VAPOR HARMFUL. MAY AFFECT THE BRAIN OR NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. CAUSES NOSE AND THROAT IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. HARMFUL IF SWALLOWED. NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Cancer hazard. Contains Crystalline Silica which can cause cancer. Risk of cancer depends on duration and level of exposure to dust generated from sanding surfaces or spray mists. Overexposure may cause lung and kidney damage. Keep away from heat, sparks and flame. VAPORS MAY CAUSE FLASH FIRE. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone. Prevent build-up of vapors by opening all windows and doors to achieve cross-ventilation. **Use only with adequate ventilation.** Do not breathe dust, vapors or spray mist. Ensure fresh air entry during application and drying. If you experience eye watering, headache or dizziness or if air monitoring demonstrates vapor/mist levels are above applicable limits, wear an appropriate, properly fitted respirator (NIOSH/MSHA-approved) during and after application. Avoid exposure to dust by wearing an appropriate (NIOSH-approved) particulate respirator during application, sanding, and clean up. Follow respirator manufacturer's directions for respirator use. Do not get in eyes, on skin or on clothing. Wash thoroughly after handling. **KEEP OUT OF REACH OF CHILDREN.** **First Aid:** In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Call poison control center, hospital emergency room, or physician immediately. Wash clothing before reuse. (Thoroughly clean contaminated shoes.) If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, call poison control center, hospital emergency room, or physician immediately. If swallowed, do not induce vomiting. Call poison control center, hospital emergency room, or physician immediately. If spilled, contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations.