



TOP SHELF® EPOXY CR-RESIN | MVR-FC

Protect Areas from Harmful Moisture and Chemical Vapor Intrusion

A powerful moisture and VOC vapor reducer, **TOP SHELF® EPOXY CR-RESIN | MVR-FC** is a high-functioning, 100% solids epoxy system. This epoxy can be installed directly over slabs that carry risks of high chemical vapor intrusion and extremely high moisture readings (25 lbs. MVER, 99% RH). The system is also one of two Top Shelf® Epoxy systems with the highest chemical resistance making it a great topcoat as well.

ADVANTAGES

- Meets USDA, FDA, EPA, and SCAQMD Standards
- Eligible for LEED Points: Made in California from Partially Recycled Materials
- Adhesion to Concrete, Wood, Metal, Non-glazed Tiles
- Anti-bacterial
- Fast Cure
- High Chemical and Stain Resistance
- High Traffic and Impact Resistance
- Low Maintenance
- Low Odor
- Moisture Vapor Resistance (up to 25 lbs. MVER and up to 99% RH)
- Waterproofing

SUGGESTED USES AND APPLICATION AREAS

- Seamless Moisture Mitigation
- Industrial, Healthcare, Commercial, Government, Institutional, and Residential

KRETUS® SYSTEMS

- Epoxy MVR
- ESD (Static Control)

For all KRETUS® systems, see kretus.com/systems.

FINISH AND COLOR

- Gloss Clear or Opaque when Pigmented: Find Color Charts at kretus.com/color-charts.

PRECAUTIONS AND LIMITATIONS

- **UV Resistance:** Coating will amber over time. If color stability is important, use UV-stable Urethane Polymer Concrete RC UV, Polyurethane, Polyaspartic, or Acrylic Sealer. See kretus.com/products.
- **Prime Coat:** A prime coat may be required if stem walls are highly absorbent, if outgassing is suspected or prevalent, or if concrete is very porous or in poor condition. All concrete repairs must be completed before installing any system.
- DO NOT apply single coat greater than 1/16" (25 sf/gal).
- DO NOT let material puddle on floor. This may cause white spots to appear when coating cures.
- Complete samples and onsite mockups to ensure desired results are achieved.
- **Application temperatures:** When temperatures increase, material cures faster. Material cures slower when temperatures decrease.
- Application times are based on test results compiled by lab technicians in a controlled setting. All times recorded using 1-quart samples. All Top Shelf® hardeners were combined with A-Resin.
- If application temperatures are outside of those recommended, contact your KRETUS® Technical Representative.

- Coverage rates are for estimating purposes only. Factors such as waste, unusual/abnormal substrate conditions, and other unforeseen jobsite conditions may affect actual product yields and are the responsibility of the installer.
- Apply material when temperature is decreasing—adhere to the KRETUS® Dew Point Calculation Chart available at kretus.com/project-planning. DO NOT apply under direct sunlight. DO NOT install under inclement weather conditions.
- For best results, apply when application temperatures and relative humidity are low.
- Recommended for Applicators level 4 and up. (See kretus.com/applicator-skill-level.)

COMPONENTS

Standard Kit

- Part A: Top Shelf® Epoxy CR-Resin, 1 gal
- Part B: Top Shelf® Epoxy MVR-FC, 1/2 gal

Bulk Kit

- Part A: Top Shelf® Epoxy CR-Resin, 10 gal
- Part B: Top Shelf® Epoxy MVR-FC, 5 gal

Larger kits may be available through KRETUS® distributor.

SAFETY, TESTING, AND WARRANTY

- **Safety:** Personal protective equipment and safety conditions must be considered before using any product. Review all relevant and current documentation including Safety Data Sheets (kretus.com/safety-data-sheets).
- **Testing:** Before installation: Test and look for any unknown site conditions and/or defects. To ensure desired results are achieved, the system should be tested in a small area on site before full installation begins.
- **Warranty:** For warranty to be upheld, Pre- and Post-Job Checklists (kretus.com/project-planning) must be completed.

STORAGE AND APPLICATION TEMPERATURES

Ideal Storage Environment	Dry, Out of Direct Sunlight, 60-80°F
Material Temperature During Application	50-70°F and 5°F Above Dew Point
Minimum Substrate Temperature During Application	5°F Above Dew Point
Recommended Application Temperature	41-77° F, <90% RH

Average Application Time

Ambient Temperature	41-77° F, <90% RH	50°F, 50 % RH	70°F, 50 % RH	100°F, 50 % RH
Working Time	15 min	15 min	15 min	NR
Recoat Window	3-16 hrs.	6-24 hrs.	3-16 hrs.	NR
Return to Service (Foot Traffic)	5-6 hrs.	24 hrs.	5-6 hrs.	NR
Full Cure (Vehicle Traffic)	5 days	5 days	5 days	NR

*NR=Not recommended

SURFACE PREPARATION

Before installing any coating, the substrate must be sound, meaning all necessary concrete repairs have been completed. It must be clean, dry, and free of any contaminants, moisture, materials, or particles that may hinder material's adhesion to the substrate. If applying directly over concrete, the substrate must be mechanically profiled to ICRI CSP 3. Different projects may require a different concrete surface profile. Adhere to International Concrete Repair Institute current standards.

MIXING AND APPLICATION

Standard Kit Mix Ratio	A:B = 1 gal: 1/2 gal
Top Shelf® Epoxy Colorant	16 oz per standard kit
Mixing Drill	low-RPM, low-torque drill with Jiffy double-bladed mixer

Mixing Directions	Mix A until color and consistency are uniform. Add B and continue to mix for 2 min.
Mixing Directions With Colorant	Mix A with colorant until color and consistency is uniform. Add B and continue to mix for 2 min.

Coverage Rates per Standard Kit

Prime Coat	450-600 sf/kit
MVR Coat, 12 mils	210-300 sf/kit
MVR Coat, 16 mils	120-160 sf/kit
Chemical-Resistant Top Coat, 8-12 mils	210-300 sf/kit
Chemical-Resistant Top Coat, 15-20 mils	120-160 sf/kit
Chemical-Resistant Top Coat, 25-30 mils	80-100 sf/kit

Premeasure components to make sure you are using the correct mix ratio. Combine components according to mix instructions. Continue mixing until the coating's consistency is uniform. The coating must remain thoroughly mixed during the application.

Keep a wet edge while applying product. Wear spiked shoes when walking on material. For more applications and coverage rates, see KRETUS® General Overview (kretus.com/product-general-overviews).

PROPERTIES WHEN FULLY CURED

PROPERTIES	TEST METHOD	TYPICAL VALUES
Abrasion Resistance	ASTM D4060	40 mg loss
Abrasion Resistance with Anti-Slip	ASTM D4060	24-30 mg
Adhesion Strength	ASTM D4541	400 psi, concrete failure
Adhesion Strength	ASTM D4541	400 psi, vinyl failure
Adhesion Strength	ASTM D4541	500 psi, natural quartz failure
Adhesion Strength	ASTM D4541	450 psi, color quartz failure
Compressive Strength	ASTM D695	13,700 psi
Flame Spread/Critical Flux	ASTM E648	Class 1
Flame Spread/Rate of Burning	ASTM D635	Self-extinguishing
Flexural Strength	ASTM D790	9,000 psi
Hardness (Shore D)	ASTM D2240	85
Impact Resistance	ASTM D2794	120 in-lbs.
Indoor Air Quality	CA 01350	Compliant
Microbial Resistance	ASTM G21	Passes, 0 growth
Modulus of Elasticity	ASTM D790	5.0 x 10 ⁵ psi
Moisture Vapor Permeance	ASTM E96	0.08 perms
Tensile Elongation at Break	ASTM D638	5%
Tensile Strength	ASTM D638	7,800 psi
Thermal Coefficient of Linear Expansion	ASTM D696	18.0 x 10 ⁻⁶ in/in/°F
Water Absorption	ASTM D570	<0.05%
Moisture Vapor Emission Rate	ASTM F1869	<25 lbs.
Relative Humidity	ASTM F2170	<99%

CHEMICAL AND STAIN RESISTANCE

1 = Best for chemical resistance: Chemical has no adverse effects on fully cured coating; remove within 24 hours.

2 = Low potential for stain: Chemical has no adverse effects on fully cured coating if removed within 24 hours.

3 = High potential for stain or degradation: Chemical must be removed within 24 hours of exposure.

NR = Not recommended

Acetic Acid (Component Of Vinegar), 10%	1	Methanol	NR
Acetic Acid, 30%.....	1	Methylene Chloride	NR
Acetone.....	NR	MIBK (Methyl Isobutyl Ketone).....	NR
Ammonia, 30%.....	1	Mineral Oil	1
Ammonium Hydroxide, 30%.....	1	Motor Oil, SAE 30	1
Antifreeze (Coolant).....	1	Mineral Spirits.....	1
Benzene (Component of Crude Oil).....	3	Mustard, Yellow	1
Benzyl Alcohol	1	Nitric Acid, 30%.....	1
Betadine, 11%	3	Oleic Acid	1
Boric Acid, 4%	1	Oxalic Acid, 10%.....	1
Brake Fluid, DOT 3	1	Phosphoric Acid, 20%	1
Chromic Acid, 10%.....	1	Potassium Hydroxide, 30%	
Chromic Acid, 30%.....	2	(Alkaline Batteries, Soap Manufacturing).....	1
Citric Acid, 30%	1	Propylene Glycol	1
Ethanol, 95%.....	3	Silver Nitrate, 20% (Photo Labs)	3
Ethyl Acetate, 99% (Food/Beverage Facility)	NR	Hydraulic Fluid (Aviation), Skydrol LD-4	2
Formaldehyde, 37%	2	Sodium Chloride, 20%.....	1
Premium Gasoline.....	1	Sodium Hydroxide (Caustic Soda), 50%	1
Hydraulic Fluids		Sodium Hypochlorite (Bleach), 10%	1
(Machinery, Automobile, Aviation)	1	Sodium Hypochlorite (Bleach), 30%.....	3
Hydrochloric Acid, 10%.....	1	Sodium Persulfate	
Hydrochloric Acid, 30%.....	3	(Bleaching and Oxidizing Agent).....	3
Hydrofluoric Acid, 10%	1	Sulfuric Acid, 37% (Battery Acid)	2
Hydrofluoric Acid, 30%	3	Tannic Acid, 20%.....	3
Hydrogen Peroxide, 10%	1	Tartaric Acid, 10%	1
Hydrogen Peroxide, 50%	1	Transmission Fluid	1
Iodine, 2%.....	3	Urine, Dog or Cat	1
Isopropyl Alcohol	1	Urea (Nitrogen-Rich Fertilizer).....	1
Jet Fuel.....	1	Vinegar, Distilled	1
Lactic Acid, 30% (Dairy Facility).....	NR	Water (Hard Water from Well)	1
Lime Juice	2	Whisky	1
Magnesium Hydroxide.....	1	Wine, Cabernet Sauvignon	1
MEK (Methyl Ethyl Ketone)	3	Xylene	3

Pigments or colorants may affect working times, reduce chemical resistance, or increase potential for stain. Coatings tested at ambient temperature over 1-3 days' exposure to chemical. To ensure desired results are achieved, products should be tested on site before installation.

DISCLAIMER: The information contained in this document is intended for use by KRETUS®-qualified and -trained professionals. This is not a legally binding document and does not release the specifier from their responsibility to apply materials correctly under the specific conditions of the construction site and the intended results of the construction process. The most current valid standards for testing and installation, acknowledged rules of technology, as well as KRETUS® technical guidelines must always be adhered to. The steps given in this document and other mentioned documents are critical to the success of your project.