



Technical Report

MONOCHEM 45

MONOCHEM 45 is a two-component, high solids, self-leveling epoxy-cycloaliphatic amine. MONOCHEM 45 is high gloss and available in clear and colors. For added decorative and safety options, you can broadcast plastic chips, color micas, metallic pigments, color quartz, silica sand and other aggregates. It is designed as a high performance primer, base or interior top coat.

Basic Uses:

Primer: MONOCHEM 45 can be used as a flooring epoxy with all the MONOCHEM decking systems. It may also be applied over almost all floor surfaces including those previously coated.

Finish Coat: MONOCHEM 45 is extremely durable and recommended for protecting and dust-proofing interior concrete floors. It provides a seamless chemically resistant film for common areas such as warehouse floors, manufacturing facilities, residential and industrial garages, mechanical rooms and commercial kitchens.

Typical Uses:

- Concrete
- Metal
- Plywood
- Tile

MONOCHEM 45 is not UV stable and must be topcoated with a pigmented coating if exposed to ultraviolet rays.

Advantages:

- Solvent Free
- Very Low VOC, Zero HAPs
- 100% Solids
- Low Odor
- Direct to Concrete
- High Gloss
- Superior Adhesion
- High Tensile Strength
- Universally Compliant
- Hot Tire Resistant
- Chemical Resistant
- Non Blushing
- Self-Leveling
- Custom Color Matching
- Acceptable for Use in USDA Inspection Facilities

Colors:

Available in clear, standard and custom colors.

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Packaging:

96 Oz. Kit: One gallon can, net fill 64 ounces of Part-A and One quart can, net fill 32 ounces of Part-B.

Clear: Item NO. 4545-96OZ

White Base: Item NO. 4520-96OZ

3 Gallon Kit: One 3.5 gallon pail, net fill 2 gallons of Part-A and One gallon can, net fill 1 gallon of Part-B.

Clear: Item NO. 4545-03

White Base: Item NO. 4520-03

Mixing:

The volume mixing ratio is 2 parts Part-A liquid to 1 part Part-B liquid.

Pot Life: 35-45 minute pot life (at 70°F and 50% relative humidity).
Higher temperatures and humidity levels tend to shorten pot life.

Physical Properties:

Composition.....	Epoxy-cycloaliphatic amine
VOC Level	< 15 g/L
Solids by Weight.....	98%
Solids by Volume	98%
Mixed Viscosity @75°F	118 Kius
Weight.....	96 Oz Kit: 8.5 Lbs; 3-Gal Kit: 27 Lbs
Finish @60°	Gloss 100°
Color (Gardner)	<2
Mixing Ratio.....	2 Parts A to 1 Part B [2:1]
Pot Life at 75°F, 50% RH	35-45 Minutes
Coverage.....	175-300 Sq. Ft per Gallon
Recommended Dry Mils	5-8

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Performance Characteristics:

Hardness:

Method: ASTM D2240

Result: 81, Shore D

Compressive Strength @Yield:

Result: 10,000 psi

Compressive Modulus

Result: 312,000 psi

Tensile Strength

Result: 6,400 psi

Tensile Modulus

Result: 255,000 psi

Tensile Elongation

Result: 6%

Preparation:

- All surfaces to be coated must be thoroughly dry (<15% moisture) and free of all adhesion affecting contaminants including but not limited to curing compounds, oils, grease, concrete hardeners, loose paint and dirt. The concrete should be between 2500-3000 psi.
- All concrete and stucco must be cured for a minimum of 28 days.
- All holes, cracks and/or joints larger than 1/16" should be caulked with a paintable polyurethane elastomeric caulk.
- The surface temperature must be between 50-90°F during product application.
- Surfaces with hydrostatic pressure must be corrected prior to product application.
- Make sure to apply a test patch to ensure the proper adhesion, appearance and performance.
- Surfaces must display a pH below 9.
- On rare occasions, abrading the surface may be necessary for proper adhesion. This can be determined by the required test patch.

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Dry Time:

- Recoat (if needed): 8-10 hours (do not exceed 24 hours)
- Light Foot Traffic: 18-24 hours
- Normal Foot Traffic: 2 Days
- Hot Tire & Heavy Object Exposure: 5 Days

*Excessive humidity or condensation on the surface during curing can interfere with the cure time and can cause discoloration, surface hazing or blushing.

Application:

- USE AS IS; DO NOT DILUTE MONOCHEM 45.
- Primer/Coating Application : Apply immediately after mixing using a high quality foam or core roller (1/4"-3/8")

A non-skid surface can be achieved by broadcasting washed and dried aggregates onto the wet freshly applied MONOCHEM 45 by hand or hopper gun. Then apply two coats of MONOCHEM 45 pigmented (or any other pigmented topcoat) as the chosen top coat at a spread rate of ~175-200 square feet per gallon to cover the sand. Monopole, Inc. recommends the use of aggregates for skid resistance in all of its floor coatings that may be exposed to wet, oily or greasy conditions.

- When using aggregates, color quartz or paint chips, we recommend applying a final clear coat of MONOCHEM 45, PERMASHIELD 200 or PERMASHIELD 2000 to encapsulate the additives.
- For clear non-skid applications, the MONOTEX 20 can be mixed into the Part A of the MONOCHEM 45. Please consult the MONOTEX 20 technical data pages or our technical department for the simple application.

Limitations:

- MONOCHEM 45 is for interior use only unless protected by a pigmented UV resistant pigmented coating such PERMASHIELD 200 or PERMASHIELD 2000.
- If solvents (such as Acetone) are added, which we do not recommend, it will make the MONOCHEM 45 combustible or flammable. In this case caution must be taken to protect against contact with sparks or open flames.
- MONOCHEM 45 is meant for non-ferrous surfaces and is not rust inhibitive.
- MONOCHEM 45 is not meant for surfaces containing tannin acids.

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Clean-Up:

Ideally clean material off of equipment while still wet. Uncured material can be removed with an environmentally safe solvent, as permitted under local regulations, immediately after use. Cured material can only be removed mechanically.

Shelf Life:

MONOCHEM 45 has a one-year shelf life from the date of manufacture in original, factor sealed containers when stored indoors at temperatures between 65-95°F.

Chemical Resistance (ASTM D543)

% Weight Change after 3 days and 28 days immersed in various chemicals at 75°F

Reagent.....	3 Days	28 Days
Deionized Water	0.49.....	1.5
Xylene	0.01.....	83
Toluene.....	0.06.....	82
Bleach.....	0.08.....	83
Methanol.....	7.93.....	-2.41
Ethanol.....	3.98.....	10.28
10% Acetic Acid	2.92.....	8.23
10% Lactic Acid.....	1.81	5.42
Trichloroethane.....	0.02.....	-0.02
Butyl Cellosolve.....	1.65	5.31
Methyl Ethyl Ketone	Destroyed	Destroyed
70% Sulfuric Acid.....	0.08.....	0.14
98% Sulfuric Acid	Destroyed	Destroyed
50% Sodium Hydroxide	-0.01	-0.04

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WARRANTY INFORMATION:

MONOPOLE believes that the information in this publication is an accurate description of the typical characteristics and/or uses of the product or products. But it is the end users responsibility to thoroughly test the product in the specific application to determine its performance efficacy and safety. Since use of this product is beyond our control, Monopole, Inc. cannot assume any risk or liability for results obtained when not used according to our specifications and directions. Unless MONOPOLE provides a specific written statement of fitness for a particular use, MONOPOLE'S sole warranty is that the product will meet its current sales specifications. MONOPOLE specifically disclaims any other expressed or implied warranty, including the warranty of merchantability and fitness for use. The exclusive remedy and MONOPOLE's sole liability for breach of warranty is limited to a refund of the purchase price or replacement of product proven to be defective. In no event shall the seller be liable for any loss of profits or other consequential damages. Under no circumstance will MONOPOLE pay labor charges.

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