

KEMKO[®] 005 HiChem Coat

Coating/Surface with
Resistance to Strong
Industrial Chemicals

Type:	Two-component, solvent-free, epoxy resin / hardener.
Primary Use:	Coating and slip resistant surfacing in strong chemical environments, sewer and waste water treatment plants, secondary containment facilities
Substrates:	Concrete, masonry, stone (dry and damp), steel and wood.
Minimum Temp:	Installation: 50° F, Cure: 50° F (substrate temperature).
Thickness:	Coating, 6 - 8 mils per coat, two coats minimum.
Finish:	Smooth, tile-like or variable texture with aggregate broadcast.
Colors:	Concrete gray (beige - gray), white and brick red.
Coverage:	Coating, 100 - 133 sq ft / gal (two coats); Surfacing, 54 - 80 sq ft / gal.
Shelf Life:	Three years minimum in sealed containers (see below for conditions).

The properties listed in this bulletin are typical and descriptive of the product and should not be used for specification purposes. For specification preparation, reference the specification of this product available from ChemCo Systems, Inc. This product is available only through KIP System (KEMKO® Injection Process) licensee/applicators.

Description: KEMKO 005, HiChem Coat is a two-component, rigid, epoxy coating with excellent resistance to strong acids and bases, organic acids (e.g., acetic, lactic) in moderate concentrations, industrial chemicals and automotive fluids (fuels, lubricants, hydraulic fluids). When seeded or blended with aggregate, it can be used on properly prepared concrete, masonry, steel or wood substrates to provide a chemical resistant surface with excellent slip/skid resistance and wear characteristics.

Features: KEMKO 005 will bond to properly prepared dry and damp substrates and cures to a tough, bluish-free, tile-like surface. In outdoor use, the coating is freeze - thaw resistant and will not embrittle but will acquire a chalky surface when exposed to sunlight. KEMKO 005 is a 100% solids product and does not contain any volatile organic solvents (VOC's). It has a convenient 2:1 (by vol.) mixing ratio and can be applied by brush, roller or with two-component spray equipment.

Limitations: The recommended minimum substrate temperature during application is 50 deg F. The minimum substrate temperature for cure is 50 deg F. Apply the material after the daily substrate temperature cycle has reached its peak. Substrates on or below grade must have a functioning vapor barrier to minimize the potential for blistering or delaminating of the applied coating. Galvanized steel and aluminum are difficult substrates to coat and require special surface preparation. Do not add solvents or otherwise thin this material.

Packaging: Standard package sizes of Part A + Part B are 3, 15 and 150 gallon units.

Shelf Life: Three years minimum in unopened, original containers when stored between 50 and 90 deg F in a dry place away from sunlight. Remixing of components may be required upon long-term storage.

Chemical Resistance: KEMKO 005 provides excellent resistance to water, detergent and salt solutions, alcoholic and carbonated beverages, gasoline, kerosene, crude, fuel and mineral oil, strong alkali and inorganic acids in concentrations up to 25% and to most organic acids. Exposure to organic acids, strong acids and alkali in higher concentrations, hot water (above 140°F), bleaches and other highly corrosive chemicals should be occasional and time limited. Resistance under these conditions should be determined by actual test before the product is applied. KEMKO 005 has limited resistance to hydrocarbon solvents. Performance is a function of the specific chemical and concentration, ambient and solution temperatures, exposure times and housekeeping procedures. For information on specific chemicals and exposure conditions, contact a ChemCo Systems, Inc., technical representative.

Color Selection: The standard color is concrete gray. Brick red and white are optional colors and may require minimum quantity and/or slightly higher cost.

Surface Preparation: Concrete surfaces may be dry or damp but must be sound and free of all bond-inhibiting substances. Prepare surfaces for coating in accordance with ASTM D 4259, "Standard Practice for Abrading Concrete," or ACI 503R, Chapter 5, "Preparing Surfaces for Epoxy Compound Application," and ChemCo Systems, Inc.'s specific recommendations. Properly prepared concrete surfaces should have a minimum strength of 250 psi in direct tension. Steel surfaces should be cleaned to 'white metal' according to SSPC SP5.

Mixing: KEMKO 005 is a two-component adhesive. The resin to hardener (Part A:Part B) mix ratio is 2:1, by volume. Premix the individual components before drawing from bulk packaging. Wear safety glasses and clean neoprene rubber gloves when handling the material. Use quantities that can be applied before the potlife of the mixed material expires. Transfer the appropriate quantities of Part A and Part B into a mixing container. Blend thoroughly using a Jiffy mixer blade attached to a low speed (350 - 750 rpm) electric or pneumatic drill. Proper mixing will take 2 - 3 minutes.

Installing: Apply with a stiff bristle brush, short nap roller, squeegee or two-component spray equipment. When used as a coating, apply in two or more 6 - 8 mil coats rather than one thick coat. Subsequent coats may be applied as soon as the previous coat is "touch dry". When used as a surfacing, pour mixed material onto the substrate and spread to the desired coverage with a V-notch trowel or Squeegee. Allow the coating to become tacky to tack-free (6 - 9 hr @ 70° F) before applying the next coat. Avoid excessive cure times between coats. Aggregate, if used, must be broadcast onto the KEMKO 005 within 15 minutes of applying the coating. The recommended aggregate size is #20x40 or #30x50 mesh. Typical broadcast rates are .75 - 1.5-lbs/sq ft. For additional application information, see ACI 503R, Chapter 7, 'Applying Epoxy Compounds.'

Clean up: All tools and equipment must be cleaned before the mixed material cures. Cleaning can be facilitated with a solvent such as acetone or heavy-duty detergents. Cured material may be removed from equipment and tools by soaking in an epoxy stripper



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Typical Properties (1)

Property		Test Method	Value
Mix Ratio, A:B,	by vol		2:1
	by wt		100:35
Color:	Part A	VISUAL	Concrete gray
	Part B		Clear amber
	Mixed		Concrete gray
Weight per Gallon, lb:	Part A	ASTM D 1475	12.1
	Part B		8.4
	Mixed		10.9
Viscosity, poise:	Part A	ASTM D 2393	110
	Part B		7
	Mixed		35
Gel Time, 200 g, minutes		ASTM D 2471	35
Thin Film Touch Dry Time, hours		ASTM D 1640	6.5
Recoat Time, hours:	@ 60° F	CHEMCO	8 - 72
	@ 73° F		4 - 24
	@ 90° F		2 - 10
Tensile Strength, psi		ASTM D 638	6500
Elongation at Break, %		ASTM D 638	2.0
Compressive Yield Strength, psi		ASTM D 695	13,000
Compressive Modulus, psi		ASTM D 695	460,000
Heat Deflection Temp., deg F		ASTM D 648	110
Hardness, Shore D		ASTM D 2240	85
Taber Abraser, mg loss		ASTM D 4060	117 (2)
Bond Strength To Damp ASTM C 109 Cement Mortar, psi		ASTM D 4547	240 (3)

(1) Cure schedule, 7 days at 73° ± 4° F and test temperature, 73° ± 4° F unless otherwise indicated.

(2) CS-17 wheels, 1000 g load, 1000 cycles.

(3) Compressive strength of cement mortar, 4500 psi.

Handling and Toxicity: This bulletin does not accompany the product when sold. For hazard warnings, safe handling and first aid instructions, **READ CAREFULLY THE MATERIAL SAFETY DATA SHEETS AND CONTAINER WARNING LABELS.**

Part A: Liquid epoxy resin, HMIS Health Hazard Rating - 2 (Moderate Hazard). Warning! Causes eye and skin irritation. May cause allergic skin reaction. Harmful if swallowed. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid prolonged or repeated contact with skin.

Part B: Liquid epoxy hardener, HMIS Health Hazard Rating - 3 (Serious Hazard). Contains alkaline amines. Danger! Causes severe eye and skin burns. May cause allergic skin and respiratory reaction. Combustible, corrosive. Do not get in eyes or skin or on clothing. Avoid breathing vapor. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Keep away from heat and open flame.

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