KEMKO® 170 LP Paste (1:1)

Slow Set Structural Paste Viscosity Designed for Automatic Mix Pumps

Type:	Two-component, solvent-free, epoxy resin / hardener.
Primary Use:	Filling wide cracks, gaps and voids; fairing and leveling uneven surfaces. Bonding Precast and rigid construction materials to themselves or each other. Anchoring bolts, dowels and rebar into concrete, masonry or stone.
Substrates:	Concrete, masonry, stone (dry, damp and wet), steel and sealed wood. Suitable for vertical surfaces; horizontal and overhead oriented holes.
Minimum Temp:	Installation: 50° F, Cure: 50° F (substrate temperature).
Color:	Concrete gray (blue-gray).
ASTM C 881:	Meets the requirements for bonding agents in load bearing applications.
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) licenses/applicators.

***Description*:** KEMKO® 170, LP Paste is a two-component, long potlife, structural; epoxy paste adhesive designed for application on vertical surfaces and in horizontal and overhead oriented holes. Primary uses include the filling of wide cracks, gaps and voids in concrete and masonry, bonding of rigid construction materials, e.g., hardened concrete, masonry, stone, steel and sealed wood to themselves or each other and anchoring bolts, dowels and rebar into horizontal and overhead oriented holes in concrete, masonry or stone. KEMKO 170 LP Paste bonds to dry, damp and wet (no free standing water) substrates and can be applied up to 1/2 inch thick without sag or flow. The components do not contain volatile organic compounds (VOC's).

***Features*:** The excellent physical properties of the product allow its use in applications requiring resistance to creep and stress relaxation, maintenance of mechanical properties at high ambient temperatures and high load bearing strength. Exceptional substrate wetting and water displacement properties ensure excellent adhesion under adverse application conditions, e.g., cold, wet concrete. The working life/cure time of KEMKO 170, LP Paste may be decreased, if required, by pre-blending the Part B with the Part B of the short potlife paste product, KEMKO 169, SP Paste.

Limitations: The recommended minimum substrate temperature during installation and cure is 50 deg F. (For installation and cure temperatures down to 40 deg F or when a faster cure is needed, use KEMKO 169, SP Paste.) The maximum in-service temperature should not exceed 20 deg F below the HDT in bonding applications subjected to substantial and sustained shear stresses that may cause creep. Do not add solvents to this material. The component viscosity may be decreased by heating with a drum or pall heater for easier mixing and application.

***Packaging*:** Standard package sizes of Part A + Part B are 2, 10 and 100 gallon units. The 5 gallon pail package is suitable to be used with the KEMKO Model C positive displacement paste dispensing pump for bulk or large volume applications.

***Shelf Life*:** Three years minimum in unopened, original containers when stored between 60 and 90 deg F in a dry place away from sunlight. Remixing of components may be required upon prolonged storage.

***Chemical Resistance*:** KEMKO 170, LP Paste has excellent resistance to a wide range of commonly encountered chemicals including acids and bases, aircraft and automotive fluids, petroleum fuels, cutting oils, etc. It 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 of the mixed components is concrete gray (blue-gray). Custom colors are available and may require minimum quantities and/or slightly higher cost.

***Surface Preparation*:** Concrete surfaces may be dry, damp or wet (no free standing water) but must be sound and free of all bond-inhibiting substances. Prepare surfaces for bonding 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 SP 5.

***Mixing*:** KEMKO 170, LP Paste is a two-component adhesive. The resin to hardener (Part A:Part B) mix ratio is 1:1, by volume. Premix the individual components before drawing from bulk packaging. Wear safety glasses and clean neoprene rubber gloves when handling the material. Transfer the appropriate quantities of Part A and Part B into a mixing container. Use quantities that can be applied before the potlife of the material expires. 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. Pre-warming the separate components to at least 70 deg F or as high as 125 deg F will allow easier mixing.

***Installing*:** For fairing and leveling applications, apply mixed material on the prepared substrate using a margin or finishing trowel. Pumping or caulking the material into place may fill wide cracks, gaps and voids. When bonding two solid surfaces, apply bonding agent to both surfaces. Establish contact between the surfaces using positive contact pressure. Maintain contact pressure until the adhesive has set. Remove excess material (squeeze-out) before the material sets. To grout bolts, dowels and rebar into horizontal and overhead holes, place the required amount of material in the hole (approx. 40% of hole volume) using a caulking gun with a nozzle of appropriate length. Retract the nozzle tip as the hole fills. Insert the bar slowly while rotating to expel air. Secure the bar in the center of the hole. For additional application information, see *ACI 503R,Chapter 7*, "Applying Epoxy Compounds."

ChemCo Systems, Inc.
2800 Bay Road
Redwood City, CA 94063
Ph 650-261-3790 Fax 650-261-3799
www.chemcosystems.com

Typical Properties (1)

Property		Test Method	Value		
Mix Ratio, A:B,	by vol			1:1	
	by wt			100:128	
Weight per Gallon, lb:	Part A	ASTM D 1475		10.56	
	Part B			13.49	
	Mixed			12.2	
			@ 50 F	**@73 F**	**@105 F**
Viscosity, poise:	Part A	ASTM D 2393	--	7700	--
	Part B		--	4800	--
	Mixed		--	6700	--
Non-Sag Thickness, inches		ASTM D 2730	--	½	--
Gel Time, 1 quart, hours		ASTM C 881	4.4	1.4	0.5
Thin Film Properties:					
Open Time, hours		AASHTO T-237	5	4	0.7
Hard Dry Time, hours		ASTM D 1640	36	10	3
Cure Time, days		AASHTO T-237	14	7	3
Compressive Yield Strength, psi		ASTM D 695		10,000	
Compressive Modulus, psi		ASTM D 695		350,000	
Flexural Strength, psi		ASTM D 790		10,500	
Flexural Modulus, psi		ASTM D 790		450,000	
Heat Deflection Temp., deg F		ASTM D 648		120	
Bond Strength, psi:	2 day cure @ 60° F	ASTM C 882		1000 (2)	
	14 day cure @ 60° F			1500 (2)	

(1) Cure schedule, 7 days at 73° ± 4° F and test temperature, 73° ± 4° F unless otherwise indicated.
(2) Compressive strength of cement mortar, 4500 psi.

***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.

***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- 2 (Moderate Hazard). Contains alkaline amines. Warning! Causes severe eye and skin irritation. 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.

***DISCLAIMER*:** NO EXPRESS WARRANTY IS MADE WITH RESPECT TO THE RESULTS OF ANY USE OF TH1S PRODUCT. NO IMPLIED WARRANTIES INCLUDING AND NOT LIMITED TO AN IMPLIED WARRANTY OF MERCHANTABILITY OR AN IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE ARE MADE WITH RESPECT TO THIS PRODUCT. NO LIABILITIES FOR PERSONAL INJURY, LOSS OR DAMAGE RESULTING FROM THE USE OF THIS PRODUCT IS ASSUMED. CHEMCO SYSTEMS, INC., RESERVES THE RIGHT TO ALTER OR DISCONTINUE THE PRODUCT DESCRIBED HEREIN AT ANY TIME AND WITHOUT PRIOR NOTICE.

KEMKO® and KIP System ™ are trade names of ChemCo Systems, Inc.

Publication Number: 6 EP KEM-170L, LP Paste

Publication Date: July 2015