



KEY 9114 MMA CRACK SEALER

DESCRIPTION

KEY 9114 MMA CRACK SEALER is a 100% reactive ultra-low viscosity methyl methacrylate resin used as a penetrating crack sealer or to fortify extremely porous concrete substrates. **KEY 9114 MMA CRACK SEALER** is typically used on bridge decks, parking structures or as a general penetrating sealer to prevent moisture intrusion.

KEY 9114 MMA CRACK SEALER is a reactive methacrylate resin, which hardens rapidly with the addition of **KEY 9000 MMA HARDENER**, even at low temperatures.

KEY ADVANTAGES

- Fast Cure (60 min.) for Rapid Recoat and Return to Service
- Ultra-Low Viscosity for Excellent Absorption Into Concrete
- Protects Against Water Penetration
- VOC Compliant (100% Solids)
- Full Strength in 1 Hour
- Use Over Wide Temperature Range – Even Below Freezing

KEY CONSIDERATIONS

- Substrate must be dry and free of dirt, waxes, curing agents and other foreign materials.
- Should not be installed on fresh concrete until maximum shrinkage has occurred (at least 30 days after placement).
- On or below grade installation must have an efficient vapor barrier under the slab (minimum 10-15 mil).
- Moisture Vapor Transmission must be less than 3 lbs per ASTM-F-1869 and less than 80% RH per ASTM F-2170. For higher moisture levels, consult with Key Resin for recommendations.
- Priming with **KEY 9112 MMA PRIMER** is required if applying Key MMA Floor Systems.

COMPOSITION

KEY 9114 MMA CRACK SEALER is a 100% reactive methyl methacrylate resin.

COLOR SELECTION

KEY 9114 MMA CRACK SEALER is supplied clear.

SURFACE PREPARATION

Surface preparation is the most critical portion of any successful resinous flooring system. All substrates must be properly prepared as outlined in **Key Resin Company's Technical Bulletin #1**. Work must be performed by trained or experienced contractors or maintenance personnel. Shot blast substrate lightly (brush blast) to remove laitance and expose surface cracks. Clean out cracks with oil-free compressed air.

MIXING AND INSTALLATION

KEY 9114 MMA CRACK SEALER requires the addition of **KEY 9000 MMA HARDENER** to start the hardening process. The amount of hardener must be adjusted to the respective surface temperature (see table below). At temperatures below 40°F, **KEY 9101 MMA COLD TEMPERATURE ACCELERATOR** must be used in addition to the amount of hardener used at the 40°F or 30°F level.

**KEY 9114 MMA CRACK SEALER Resin
Mix Ratios, Pot Life and Hardening/Temperature**

Temp. (°F) of Resin, Air & Floor Surface	Hardener by Volume (oz.) Per Gallon of 9114 Resin	Pot Life (min.)	Hardening Time (min.)
+30°F	9-10 vol. oz.	Approx. 10-12	Approx. 30
+40°F	7-9 vol. oz.	Approx. 10-12	Approx. 30
+50°F	5-7 vol. oz.	Approx. 8-10	Approx. 25
+60°F	4-5 vol. oz.	Approx. 8-10	Approx. 25
+70°F	4 vol. oz.	Approx. 8-10	Approx. 20
+80°F - 90°F	4* vol. oz.	Approx. 6-8	Approx. 20

*Do not use less than 4 oz. Key 9000 MMA Hardener by volume unless confirmed with jobsite testing. Consult with Key Resin Technical Services if performing mix ratio by weight instead of by volume.

KEY 9113 MMA MOISTURE ADHESIVE ADDITIVE: Recommended for damp substrates. Add 5% by volume (or 6.5 ounces by volume per gallon) to **KEY 9114 MMA CRACK SEALER** during mixing.

KEY 9101 MMA COLD TEMPERATURE ACCELERATOR: At temperatures below 40°F, Key 9101 MMA Cold Temperature Accelerator must be used in addition to the amount of hardener used at the 40°F or 30°F level. As a rule of thumb, add about ½ oz by volume per gallon of resin @ 39° to 32°F, up to 2.0 oz by volume per gallon @ -20°F, increasing the quantity gradually in a consistent linear progression as the temperature decreases.

VERY IMPORTANT: KEY 9101 MMA COLD TEMPERATURE ACCELERATOR MUST be added to the MMA resin and thoroughly blended BEFORE adding the **KEY 9000 MMA HARDENER**, or hazardous decomposition may occur (i.e., violent foaming). **KEY 9101 MMA COLD TEMPERATURE ACCELERATOR** will cause yellowing, but this will have no effect with a penetrating sealer as long as a resin-rich surface film is not created.

Inspect underside of elevated decks for evidence of full depth cracks that may require additional treatment to prevent draining of resin. Cracks greater than 1/8" width should be repaired individually prior to application of flood coat. Fill 1/8" or larger cracks with loose sand and pour small quantity of mixed **KEY 9114 MMA CRACK SEALER** into the crack and spread with a paint brush, allow to cure before applying flood coat. **KEY 9114 MMA CRACK SEALER** is spread evenly on the surface as a flood coat with a squeegee or rollers and allowed to absorb completely into the concrete substrate. Do not allow to form puddles. Coverage rate will vary depending on the porosity of the concrete and quantity of cracks. For estimating purposes evaluate the substrate with a test patch whenever possible, or use 80-100 ft²/gallon/coat as a general guide, assume two coats on very absorbent surfaces. Apply subsequent applications of resin only after the previous application is completely hardened. There should be very little resin film on the surface upon completion. Surface resin will wear over time, however the filled cracks and porosity will remain sealed.

PHYSICAL PROPERTIES

Percent Reactive	100%, zero VOC
Working Life, 50°F-70°F	8-10 minutes, will vary with temp. & amount of Hardener
Recoat Time	45-60 minutes
Viscosity	10 cps
Weight per Gallon	8.3 lbs.
Tensile Strength, ASTM D-638	7800-8000 psi
Compressive Strength, ASTM D-638	12,500-12,700 psi
Flexural Strength, ASTM D-638	11, 100-11,500 psi
Water Absorption, ASTM D-570	0.75-0.8 %/24 hrs.
Hardness, ASTM D-2240	>80 Shore D
Elongation, ASTM D-638	4.5-5.0 %

CLEAN UP

Clean tools and equipment with lacquer thinner or MEK. Consult Material Safety Data Sheet for safety and health precautions.

COVERAGE

Will vary depending on porosity of substrate and quantity of cracks. 80-100 ft²/gallon/coat is a suggested starting point. Two coats may be necessary on very porous substrates.

AVAILABILITY

Key Resins are available throughout the United States, Canada, Mexico and a number of other countries. Contact the **Key Representative** in your area. Telephone (888)943-4532 or visit www.keyresin.com.

STORAGE

Store in a cool and dry place, below 80°F, out of direct sunlight. Do not store near open flame or food. Shelf life is 6 months in the original unopened containers. After extended storage: Additives and fillers can separate with storage, materials should be inspected for any visible signs of settlement, polymerization, or paraffin coagulation (clumps, strands). Thoroughly mix pails or drums (use a drum mixer, do not rely on rolling drum on floor) and pour into new containers to inspect resin before use.

HELPFUL HINTS

Adequate cross ventilation should be provided. Good ventilation during the processing ensures a good cross linking and hardening. Read, understand and follow Material Safety Data Sheets and Application Instructions prior to use. Use only as directed. If substrate and/or material temperature is above 90°F, DO NOT apply material.

TECHNICAL SERVICE

Key Resin Company and **KRC Associates, Inc.** provide services and consultations on material selection, specification, troubleshooting, and other information on the proper repair and protection of concrete surfaces. **Key Resin Sales/Technical Representatives** are available to assist you. Telephone (888)943-4532 or visit www.keyresin.com.

WARRANTY

Information regarding Key Resin brand MMA resins and systems is based upon extensive research and experience in the field of applied engineering by the manufacturer **Plasti-Chemie GMBH International**. By making such information available, Key Resin does not thereby assume any liability beyond express terms of our standard limited material warranty. Key Resin does not warrant the accuracy or completeness of any such information, whether conveyed orally or in writing, but to the best of our knowledge believe it to be accurate. We reserve the right at any time and without notice to update or improve our products and process and our information concerning the same. By Key Resin making this information available does not relieve the purchaser or user from his obligation to verify the suitability of our products and processes for the intended use or application. The purchaser and user likewise have the responsibility to ensure that the purchase, use or application does not infringe upon patent rights or other rights of third parties.

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