

KEY #9418 MMA BINDER

Product Data Sheet



DESCRIPTION

KEY #9418 MMA BINDER is a 100% reactive methyl methacrylate binder resin for self-leveling, broadcasted, and troweled mortar systems. **KEY #9418 MMA** resin is ideal for decorative troweled and broadcast quartz floors and industrial surfacings subject to heavy loads and traffic. Flooring systems based on **KEY #9418 MMA** are excellent for food processing areas, restaurant kitchens, laboratories, machine shops, chemical storage warehouses, animal research facilities, and numerous other applications.

KEY ADVANTAGES

- Fast cure for rapid recoat and return to service
- Good leveling and flow characteristics
- Meets USGBC LEED criteria for low VOC
- May be applied in thickness of 1/32" - 1/8"+
- Full cure in less than 60 minutes
- Use over wide temperature range—even below freezing

KEY CONSIDERATIONS

- Concrete must be dry, free of dirt, waxes, curing agents and other foreign materials
- **KEY #9418 MMA** must be mixed with self-leveling filler or blended aggregate and sealed with appropriate MMA sealer
- **KEY #9418 MMA** must be applied at minimum thickness of 30 mils (1/32") per coat unless otherwise approved by **Key Resin Technical Service**
- 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 F1869 and less than 80% RH per ASTM F2170 unless **Key Resin** moisture mitigation system is used
- MMA odor must be contained and/or ventilated with negative air flow as necessary
- Small enclosed spaces require proper negative air flow ventilation to ensure proper curing

COLOR SELECTION

KEY #9418 is supplied Clear (slight haze). Universal Color packs are available, refer to **Key Resin/Flowcrete Standard Color Chart 2020**. Color pack mix ratio is 1 pigment pack per 5 gallons resin. **IMPORTANT:** Do NOT use Black Universal color packs, must use Dry Oxide color pack only.

COMPOSITION

100% reactive methyl methacrylate resin.

COVERAGE

KEY #9418 yield of mixed slurry will vary depending on mix design used. Chart shows yield for 1.6-2 gallons slurry.

Coverage: 1/16"	40-50 ft ²
1/8"	20-25 ft ²
3/16"	13-17 ft ²

APPLICATION

SURFACE PREPARATION

Surface Preparation is the most critical portion of any successful resinous flooring system application. All substrates must be properly prepared as outlined in **Key Resin Technical Bulletin #1**. Work must be performed by trained or experienced contractors or maintenance personnel. **Key Resin Technical Service** is available to answer any questions. All **Key MMA Flooring Systems** require a minimum surface profile of CSP 4-5.

INSTALLATION

(Continued on next page)

KEY #9418 is used in conjunction with fillers or blended aggregate and 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). 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.

Note: **KEY #9418 MMA** must be sealed with **KEY #9522 MMA**, **KEY #9526 MMA** or **KEY #9529 MMA**. These can be either pigmented or clear.

KEY #9418 MMA BINDER

Mix Ratios, Working Life, Hardening/Temperature

Temp of Resin, Air & Floor	Hardener by Volume oz/gal	Working Life (minutes)	Hardening Time (minutes)
+30°F	9 vol. oz. +0.5 v.o. #9101	~45	~75
+40°F	9 vol. oz.	~40	~70
+50°F	6 vol. oz.	~35	~75
+60°F	5 vol. oz.	~25	~65
+70°F	4 vol. oz.	~15	~35
+80°F - 90°F	2-3* vol. oz.	~15-25	~60-70

*Do not use less than 2 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 #9418 MMA BINDER

Product Data Sheet



ADDITIVES / SPECIAL CONDITIONS

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: MUST add KEY #9101 to the MMA resin and thoroughly blend 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, it is advised to use pigmented MMA resin versus clear to reduce the appearance of yellowing, darker colors will be less affected than lighter colors.

TYPICAL SLURRY FORMULA

Yield*: ±1.6-2.0 gallons Slurry (0.2-0.27 ft³)

Material	Weight	Volume
Key #9418 MMA	8.2 lbs/gal	1.0 gallon
Key Self Leveling Filler	15-22 lbs	1.0-1.5 gallons
Key #9000 MMA Hardener	Follow Chart	Follow Chart
Key Pigment Pack	N/A	0.2 pack

INSTALLATION - SLURRY

Add hardener to the clear resin and blend; add filler and pigment (if used) and mix thoroughly with jiffy mixer. Blend for 1-2 minutes until no lumps are present. Apply mix to the primed surface using a gauge rake or notched trowel. The above mixture will yield approximately 1.6-2 gallons of slurry. The fresh slurry coat must be broadcast to excess with a wearing course of aggregate or **Key Broadcast Chips** (color flake) when installed as a single slurry system. Aggregate rates will vary from 0.25-1.0 lbs/ft² depending on type and size of aggregate, mix design, and thickness of slurry. It is recommended to broadcast 30 mesh aggregate or larger. Do not use broadcast aggregate smaller than 30 mesh or the risk of random cure problems increases. Aggregate may be natural or colored quartz, sand, aluminum oxide, emery, etc. **KEY #9418 MMA** must be sealed with **KEY #9522**, **KEY #9526** or **KEY #9529**, depending on expected service conditions.

KEY #9418 can also be used as a binder resin for a decorative troweled mortar formula with colored quartz or

industrial solid color mortar using blended mortar silica aggregate. Used in food and beverage processing, restaurant kitchens, laboratories, animal rooms, pharmaceuticals, locker rooms, grocery stores and/or areas requiring a decorative or solid color heavy duty surface. **KEY #9418 MMA** must be sealed with **KEY #9522**, **KEY #9526** or **KEY #9529**, depending on expected service conditions. These can be pigmented or unpigmented. Topcoating is necessary for improved scratch resistance, stain resistance and chemical resistance.

TYPICAL TROWEL MORTAR FORMULAS COLOR QUARTZ T-250 MORTAR

Material	Weight	Volume
Key #9418 MMA	8.2 lbs/gal	1.0 gallon
Key Blended Color Quartz Key Cove Powder	26 lbs 2.0 lbs	2 gallons 1 pint
Key #9000 MMA Hardener	Varies with temperature	Varies with temperature

COVERAGE

KEY #9418 yield of Color Quartz T-250 mixed mortar will vary depending on mix design used. Yield ± 2.0 gallons.

Coverage: 1/8"	24-25 ft ²
3/16"	18 ft ²
1/4"	12-13 ft ²

SOLID COLOR STD MORTAR

Material	Weight	Volume
Key #9418 MMA	8.2-10.2 lbs	1.0-1.25 gallons
Key BMA-50 Blended Agg. Key Pigment Pack	50 lbs N/A	3.25 gallons 0.2 pack
Key #9000 MMA Hardener	Varies with temperature	Varies with temperature

COVERAGE

KEY #9418 yield of STD mixed mortar will vary depending on mix design used. Yield* ± 2.75-3.0 gallons (0.33-0.4 ft³).

Coverage: 1/8"	35-38 ft ²
3/16"	23-26 ft ²
1/4"	17-19 ft ²

KEY #9418 MMA BINDER

Product Data Sheet



INSTALLATION - TROWELED MORTAR

Add hardener to the clear resin and blend; add aggregate and pigment (if used) and mix thoroughly with jiffy mixer or mortar mixer. Blend for 1-2 minutes until no lumps are present. **IMPORTANT:** Use ONLY **Key KBQ-TR Colored Quartz** or **Key BMA-50** blended silica or other properly graded aggregate blend to ensure proper through-curing. Mortar mix design **MUST** yield a resin-rich, pourable consistency, which has a resin-rich surface after troweling. A mortar with a resin-lean, dry consistency may have cure problems. Apply mix to the primed surface using a trowel. **KEY #9418 MMA** must be sealed with **KEY #9522**, **KEY #9526** or **KEY #9529**, depending on expected service conditions.

TECHNICAL DATA

Percent Reactive	100%
Volatile Organic Content (VOC) (EPA Method 24)	46 g/L, compliant to low VOC Rule 1113 in all 50 states
Weight/gal	8.2 lbs/gal
Viscosity @ 75°F	280-290 cps

CURE/DRY TIME

Working Life	10-15 minutes, will vary with temp. & amount of Hardener
Recoat	35-75 minutes, will vary with temp. & amount of Hardener

WARRANTY

Key Resin Company ("Key") warrants for a period of one (1) year that its products will be free of manufacturing defects and will be in conformity with published specifications when handled, stored, mixed, and applied in accordance with recommendations of Key. If any product fails to meet this warranty, the liability of Key will be limited to replacement of any non-conforming material if notice of such non-conformity is given to Key within (1) one year of delivery of materials. Key may in its discretion refund the price received by Key in lieu of replacing the material. No customer, distributor, or representative of Key is authorized to change or modify the published specifications of this warranty in any way. No one is authorized to make oral warranties on behalf of Key. In order to obtain replacement or refund the customer must provide written notice containing full details of the non-conformity. Key reserves the right to inspect the non-conforming material prior to replacement. EXCEPT FOR THE EXPRESSED WARRANTY STATED ABOVE, THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE. KEY'S OBLIGATION SHALL NOT EXTEND BEYOND THE OBLIGATIONS EXPRESSLY UNDERTAKEN ABOVE AND KEY SHALL HAVE NO LIABILITY OR RESPONSIBILITY TO THE PURCHASER OR ANY THIRD PARTY FOR ANY LOSS, COST, EXPENSE, DAMAGE OR LIABILITY, WHETHER DIRECT OR INDIRECT, OR FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

AVAILABILITY

Key Resin materials are available throughout the United States and a number of other countries. Contact the **Key Resin Representative** in your area for details.

TECHNICAL SERVICE

Key Resin Company provides services and consultations on material selection, specification, troubleshooting, and other information on the proper repair and protection of concrete surfaces. **Key Resin Representatives** are available to assist you. Telephone 888.943.4532 or visit www.keyresin.com.

MAINTENANCE

KEY #9418 MMA is a basecoat resin used with various **Key MMA Systems**, refer to the specific system technical data sheet or sealer product information sheet for recommended maintenance instructions, or **Key Resin Technical Bulletin #3** and **#3-A**.

STORAGE

Store **KEY #9418** in a cool and dry place, below 80°F, out of direct sunlight. Do not store near open flame or food. Shelf life is 12 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

Good ventilation during the application process ensures adequate cross linking and hardening. Read, understand and follow Safety Data Sheets (SDS) and application instructions prior to use. Use only as directed. If substrate and/or material temperature is above 90°F, DO NOT apply material unless prepared for very short working time and possible roller marks, etc.

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