

Product Data and Test Information

PROTECTOSIL® MMA Cracksealer HE

PRODUCT DESCRIPTION

PROTECTOSIL® MMA Cracksealer HE is a low viscosity reactive methylmethacrylate (MMA) with improved elongation, for use in sealing cracks in concrete structures. **PROTECTOSIL® MMA Cracksealer HE** is a two component liquid material which is catalyzed to cure into a hard methylmethacrylate (MMA) resin. The low viscosity of the **PROTECTOSIL® MMA Cracksealer HE** allows it to readily penetrate into cracks. Cracks as wide as 1/8 of an inch (3 mm) to hairline can be sealed. **PROTECTOSIL® MMA Cracksealer HE** cures within one hour and is ready for traffic at that time. The cured MMA is resistant to water, chloride ion ingress, and also alkali attack. **PROTECTOSIL® MMA Cracksealer HE** penetrates into cracks, then reacts to seal against water and chloride ion intrusion. The unique MMA resin also seals sound concrete against water and chloride ion ingress. The cured MMA creates a barrier which prevents the ingress of water and water borne contaminants from entering the substrate and causing premature deterioration. By combining the two low viscosity components of the MMA resin, **PROTECTOSIL® MMA Cracksealer HE** penetrates by gravity into even the smallest crack. The excellent adhesion and strength of the cured resin ensures a long service life.

APPROPRIATE APPLICATIONS/SUBSTRATES

For use to seal cracks on cast-in-place, pre-cast, and high-strength concrete as well as concrete surfaces from ingress of water and water-borne contaminants, such as chloride ions. For use on concrete bridge decks, parking garages, pedestrian walkways and other elevated concrete structures.

ADVANTAGES

PROTECTOSIL® MMA Cracksealer HE is a 100% solid reactive MMA resin with low intrinsic viscosity and excellent adhesion to concrete surfaces.

The main benefits of this product are:

- New Formulation with increased elongation up to 12%
- Fast Curing System (1 hour)
- Deep penetration into cracks
- Excellent adhesion and bond strength
- Excellent water and chloride ion screening
- Compatible with other **PROTECTOSIL®** Building Protection products
- Highly resistant to alkali attack

LIMITATIONS

Not intended for below-grade waterproofing of cracks under hydrostatic pressure. Should not be applied if the surface temperature is below 40°F (4°C) or above 90°F (32°C), if rain is expected within two hours following application, or if high winds or other conditions prevent proper application. If rain has preceded the application, the surface should be allowed to dry at least 24 hours.

TECHNICAL DATA

PROTECTOSIL® MMA Cracksealer HE is a liquid system catalyzed by the addition of **Protectosil® BPO** activator.

Color	bluish, slightly turbid liquid
Active Substance	methylmethacrylate
Active Content	100%
Solvent	none
Viscosity @ 74°F	5 - 15 cp
Flash point	50°F
VOC	less than 70 g/l
Compressive Strength ASTM C3986	12,800 psi
Tensile Strength ASTM D638	6427 psi
Elongation at Break ASTM D638	> 14%
Flexural Strength ASTM D790	1190 psi

INSTALLATION

Concrete should be allowed to cure a minimum of 28 days. Concrete repair and replacement must be completed prior to application of **PROTECTOSIL® MMA Cracksealer HE**. Patching materials, caulking, sealing material, and traffic paint must be fully cured before application. All surfaces must be cleaned to remove all traces of dirt, dust, efflorescence, mold, salt, grease, oil, asphalt, laitance, curing compounds, paint, coatings, and other foreign materials. Acceptable surface cleaning methods include shotblasting, sandblasting, waterblasting, and chemical cleaners. Do not apply to a wet substrate and allow a minimum of 24 hours drying after precipitation. Check with your Evonik Corporation representative to verify that surface preparation is adequate. **DO NOT ADD SOLVENTS, WATER OR OTHER MATERIAL TO THE PROTECTOSIL® MMA Cracksealer HE FORMULATION.** Mix the **PROTECTOSIL® MMA Cracksealer HE** containers by rolling, shaking ..(Continued)

or stirring containers prior to use. The **PROTECTOSIL® MMA Cracksealer HE** formulation should be mixed in clean containers, preferably plastic. Mix the Protectosil Degadeck CSS until thoroughly mixed.

After mixing, **PROTECTOSIL® MMA Cracksealer HE** is ready for the addition of the initiator. Slowly stir the **PROTECTOSIL® MMA Cracksealer HE** and add **Protectosil® BPO** catalyst per the following temperature chart:

Application Temp	Protectosil BPO catalyst (% by wt.)	Pot Life (min)	Hardening Time (min)
40°F (9°C)	7.0	15	60
50°F (9°C)	5.0	12 - 16	45 - 50
60°F (16°C)	3.0	15 - 20	45 - 50
70°F (21°C)	2.0	15 - 20	45 - 50
80°F (27°C)	1.0	20 - 25	45 - 50
90°F (27°C)	1.0	5 - 10	30 - 35

Stir the mixture until **Protectosil® BPO** powder is dissolved and immediately pour the **PROTECTOSIL® MMA Cracksealer HE** on the concrete surface. Using squeegees, rollers or brooms quickly distribute the material over the concrete surface. Push material onto and into cracks to allow more material to penetrate. After approximately 10 minutes at 70°F (20°C) broadcast clean dry quartz (20 to 30 mesh), aluminum oxide or other approved medium onto the sealed surface. Distribute medium evenly over the surface at a rate of 10 to 15 pounds per 100 square feet for pedestrian traffic areas and 15 to 20 pounds for vehicular traffic areas. After approximately one hour remove any loose sand and open sealed area to traffic.

For large cracks that reflect through the slab, apply by brush or roller **PROTECTOSIL® MMA Cracksealer HE** to the underside of the slab and allow to cure before sealing top surface. On larger cracks it may be advisable to partially fill the cracks with clean dry quartz to reduce the amount of **PROTECTOSIL® MMA Cracksealer HE** needed. Coverage rates depend on the amount and size of cracks, typical coverage is approximately 80 to 140 square feet per gallon. Exact coverage depends on the number and volume of cracks as well as the concrete porosity. It is recommended to seal cracks in the early part of the day if the concrete will be exposed to direct sunlight. As the concrete heats up it will expand and the cracks will close-up. As long as there is no dew or moisture on the decks the **PROTECTOSIL® MMA Cracksealer HE** can be used even at night.

Precautions: PROTECTOSIL® MMA Cracksealer HE is a flammable liquid and should be kept away from heat, sparks, open flame or other sources of ignition. The **PROTECTOSIL® MMA Cracksealer HE** containers should be kept closed when not in use and should be stored at temperatures below 75°F (24°C) and away from rain, standing water and direct sunlight. When working in an enclosed area, an air respirator should be used. Please refer to the Material Safety Data Sheet for more detailed information.

AVAILABILITY

PROTECTOSIL® MMA Cracksealer HE is available in 5 and 55 gallon (180kg) drums to approved applicators, F.O.B. from various warehouses throughout the United States. Contact your local **PROTECTOSIL®** representative or your regional manager for specific cost information. You can obtain their contact information on our website, www.protectosil.com, or by calling us at 1 (800) 828-0919.

TECHNICAL SERVICE

Technical service engineers and scientists are available to answer questions about product performance, application methods and compatibility with other building materials. You can speak to one of our engineers or scientists directly by calling our toll-free number, 1 (800) 828-0919, and selecting option 1.

For more information, SDS and the most updated product information, and to find your local representative, go to www.protectosil.com

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EVONIK CORPORATION
299 Jefferson Road
Parsippany, NJ 07054-0677

Phone +1 800 828-0919
info.protectosil@evonik.com
www.protectosil.com