

Sonneborn®**Concrete
Repair
Systems****SONOCRETE®****EPOFIL™/EPOFIL™ SLV****High-modulus, low-viscosity epoxy injection resins**

- Available in two versions
 - EpoFil™: Low viscosity
 - EpoFil™ SLV: Super low viscosity for injecting very fine cracks.

**Where to Use
EpoFil™ and
EpoFil™ SLV**

- High-strength structural bonding of cracks—applied manually or by automated injection systems
- When mixed with clean, dry sand, can be used as an epoxy mortar for patching and over-laying interior horizontal surfaces
- Gravity feed to repair cracks in floors
- Bonds to concrete, wood, steel
- Interior and exterior

Features

- 2 to 1 mixing ratio...
- Moisture insensitive...
- Tenacious bond strength...
- High early strength...
- Side-by-side cartridges available...
- Low viscosity...

Benefits

- Meets the mix ratio requirements of professional injection equipment
- Bonds to damp or dry surfaces
- Creates a permanent structural bond
- Returns structure to service fast
- Repairs cracked concrete without expensive equipment
- Penetrates deeply for reliable, complete crack repairs

How to Apply EpoFil™ and EpoFil™ SLV

The application instructions for EpoFil™ and EpoFil™ SLV are identical, with the exception of the pot life and the amount of sand added when EpoFil™ and EpoFil™ SLV are used for patching applications. Pay special attention to these instructions.

Surface Preparation

1 Surfaces must be clean, structurally sound, and fully cured (28 days) before application begins. They can be dry or damp, but must be free of standing water.

2 Surface must be free from dust, grease, curing compounds, waxes, laitance, loose deteriorated concrete, and other unsound materials.

3 Sandblast or power-wire-wheel steel to a white metal finish.

4 Blow surfaces clean with oil-free compressed air.

Mixing

1 Precondition EpoFil™ to 70°F ± 5° (21°C ± 3°) before mixing.

2 Premix each component of EpoFil™ before mixing together.

3 Add 2 parts by volume of Part A to 1 part by volume of Part B in a clean mixing pail. Mix thoroughly for approximately 2 minutes using a low-speed (400 - 500 rpm) drill and paddle mixer.

4 Thoroughly scrape the sides of the mixing container and continue to mix for an additional 1 minute to ensure a homogeneous mixture uniform in color.

5 Pot life of EpoFil™ SLV is 30 - 35 minutes at 77°F (25°C).

Pot life of EpoFil™ is 20 - 25 minutes at 77°F (25°C).

Increased temperatures will dramatically reduce the pot life.

Application Pressure Injection of Cracks

1 EpoFil™ is specially designed and formulated to be mixed and applied with automatic pressure injection equipment. Follow the recommendations and directions supplied by the equipment manufacturer.

2 Seal ports and cracks with EpoGel™ or Rapid Gel non-sag epoxy adhesives (See Form Nos. 1017919 and 1017944).

3 When EpoGel™ or Rapid Gel is thoroughly cured, inject EpoFil™ using standard pressure injection equipment or by gravity feed method.

4 For crack injection using a manual side by side dispenser, hold in an upright position to ensure proper mixing and avoid gravity discharge of low viscosity component.

Flooring Mortar for Patching Applications

1 Cut the edge of the patch to a 90° angle to eliminate featheredging.

2 Mix mechanically using a slow-speed drill and paddle mixer. Add 2 parts by volume of Part A to 1 part by volume of Part B to a clean mixing container. Mix for a minimum of 2 minutes until evenly blended to a uniform color.

3 Prime the prepared substrate. Neatly apply EpoFil™ mixture using a brush or roller.

4 Add approximately 4 - 5 parts by loose volume of 20/40 grade clean dry sand to one part by volume of EpoFil™ mixture. Add 5 - 6 parts by loose volume of 20/40 grade clean dry sand to one part by volume of

EpoFil™ SLV mixture. Continue mixing to a uniform homogeneous lump-free consistency. (Mix only a quantity of material that can be placed within the pot life.)

5 While prime coat is still tacky, apply and compact the EpoFil™ mortar mixture and finish with steel trowel and allow to cure.

Side-by-Side cartridges

1 Insert cartridges filled with EpoFil™ into pneumatic dispense gun, making sure that properly sized piston head is inserted into each cartridge seal. Connect air lines with pressure regulator set at 90 psi (0.62 MPa).

2 Immediately install flow restrictors and the static mixer with retaining nut.

3 Increase air pressure to desired flow rates and dispense 1 to 2 inches (25 - 51 mm) of materials before proceeding with the application.

Clean Up

Tools may be cleaned with Reducer 990 or xylene before cure of epoxy material. Avoid contact of solvents with skin. Cured epoxy material must be mechanically abraded.

For Best Performance

- Do not thin; solvents will prevent proper curing.
- Keep from freezing.
- Do not remove flow restrictors on side-by-side cartridge static mixers.
- Do not use when temperatures fall below 40° F (4°C).
- Not for use on exterior slabs as a slab sealer.

- Concrete must be fully cured at least 28 days.
- Injection cracks should not exceed 1/4" (6 mm) in diameter.
- Use only clean, dry sand for aggregate-extended mortar.
- Will discolor when exposed to UV light.

- When used as a patching mortar, maximum lift placement is 1" (25 mm).
- Always apply slow even pressure with side-by-side cartridges; excessive pressure may cause improper mixing or damage to cartridges resulting in seepage of material.

- Make certain the most current version of this data guide is being used; call Customer Service (1-800-433-9517) to verify the most current version.
- Proper application is the responsibility of the user. Field visits by ChemRex® personnel are for the purpose of making technical recommendations only and are not for supervising or providing quality control on the jobsite.

Technical Data

Compliances

EpoFil™

- Most State DOTs (contact Technical Services for more information)
- ASTM C 881, Type I, II, IV, V, Grade 1, Classes B and C
- Meets USDA specifications for use in food processing plants

Typical Properties	Compressive Modulus, psi (MPa) ASTM D 695	Shear Strength ASTM D 732
Pot Life, minutes	28 days	psi (MPa)
40°F (4°C) Approximately 40	3.9 x 10 ⁵ (2,689)	8,800 (60.7)
77°F (25°C) Approximately 25	Tensile Properties ASTM D 638	
90°F (32°C) Approximately 10	14 days	
Viscosity Approximately 750	Bond Strength, psi (MPa) ASTM C 882 (hardened concrete to hardened concrete)	
cps at 77°F (25°C)	2 days (dry cure) 2,300 (15.9)	
Compressive Strength, psi (MPa) ASTM D 695		
14 days (wet cure) 3,000 (20.7)		
Water Absorption ASTM D 570		
Time 73°F (23°C)	Total water absorption, % 0.84	
8 hours 3,000 (20.7)	(24 hour immersion)	
16 hours 5,000 (34.5)	Heat Deflection ASTM D 648	
1 day 7,500 (51.7)	14 days, °F (°C) 120 (49)	
3 days 9,500 (65.5)	All material values assume 73°F (23°C) and 50% relative humidity.	
7 days 10,000 (69.0)		
14 days 10,500 (72.4)		
28 days 10,600 (73.1)		

Compliances

EpoFil™ SLV

- Most State DOTs (Contact Technical Services for more information)
- ASTM C 881, Type I, II, and V, Classes B & C, Grade 1
- Meets USDA specifications for use in food processing plants

Typical Properties	Compressive Modulus, psi (MPa) ASTM D 695	Bond Strength, psi (MPa) ASTM C 882 (hardened concrete to hardened concrete)
Pot Life, minutes	28 days	2 days (dry cure) 2,400 (16.5)
40°F (4°C) Approximately 55	210,000 (1,448)	14 days (wet cure) 3,600 (24.8)
77°F (25°C) Approximately 35	Tensile Properties ASTM D 638	
90°F (32°C) Approximately 12	14 days	
Viscosity Approximately 175	Water Absorption ASTM D 570	
cps at 77°F (25°C)	Total water absorption, % 0.85	
Compressive Strength, psi (MPa) ASTM D 695		
14 days (wet cure) 3,600 (24.8)		
Heat Deflection ASTM D 648		
Time 73°F (23°C)	14 days, °F (°C) 120 (49)	
8 hours 1,600 (11.0)	All material values assume 73°F (23°C) and 50% relative humidity.	
16 hours 6,000 (41.4)		
1 day 9,000 (62.1)		
3 days 10,000 (69.0)		
7 days 10,500 (72.4)		
14 days 10,500 (72.4)		
28 days 10,600 (73.1)		

Test results are averages obtained under laboratory conditions. Reasonable variations can be expected.

Order Information

Packaging

EpoFil™ and EpoFil™ SLV

- 3 gallon kits consisting of 2 gallons (7.6 L) Part A and 1 gallon (3.8 L) Part B

EpoFil™

- 300 by 150 mL side-by-side cartridges (450 mL total)

Shelf life is 2 years when stored in an unopened container under normal conditions.

Color

- Amber when mixed.

Coverage

- One gallon yields 231 cubic inches (0.001 m³/L)
- EpoFil™: One gallon (3.8 L) with 4 - 5 parts clean, dry sand produces approximately 0.4 - 0.5 ft.³ of epoxy mortar

- EpoFil™ SLV: One gallon (3.8 L) with 5 - 6 parts clean, dry sand produces approximately 0.5 - 0.6 ft.³ of epoxy mortar

Warning

EpoFil™ Part A contains trade secret

Risks

May cause skin, eye and respiratory irritation. Ingestion may cause irritation. Potential skin and respiratory sensitizer. Repeated or prolonged contact with skin may cause sensitization. INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

Precautions

KEEP OUT OF THE REACH OF CHILDREN. Prevent contact with skin, eyes and clothing. Avoid breathing vapors. Use only with adequate ventilation. DO NOT take internally. Wash thoroughly after handling. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable federal, state and local regulations. Empty container may contain hazardous residue. All label warnings must be observed until the container is commercially cleaned or reconditioned.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. SEEK IMMEDIATE MEDICAL ATTENTION. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs, or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Refer to Material Safety Data Sheet (MSDS) for further information.

Proposition 65

This product contains material listed by the state of California as known to cause cancer, birth defects or other reproductive harm.

VOC Content

0 g/L.

Danger—Corrosive

EpoFil™ Part B contains proprietary amine mixture

Risks

Contact with skin or eyes may cause burns. Potential skin and/or respiratory sensitizer. Causes respiratory irritation. Ingestion may cause burns or other harm. INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

Precautions

PREVENT CONTACT WITH SKIN, EYES, AND CLOTHING. WASH THOROUGHLY AFTER HANDLING. USE ONLY WITH ADEQUATE VENTILATION. KEEP CONTAINER CLOSED WHEN NOT IN USE. DO NOT TAKE INTERNALLY. USE IMPERVIOUS GLOVES, EYE PROTECTION AND IF THE TLV IS EXCEEDED OR IF USED IN A POORLY VENTILATED AREA, USE NIOSH/MSHA APPROVED RESPIRATORY PROTECTION IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS. EMPTY CONTAINER MAY CONTAIN HAZARDOUS RESIDUE. ALL LABEL WARNINGS MUST BE OBSERVED UNTIL THE CONTAINER IS COMMERCIALY CLEANED OR RECONDITIONED.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. SEEK IMMEDIATE MEDICAL ATTENTION. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Refer to Material Safety Data Sheet (MSDS) for further information.

Proposition 65

This product does not knowingly contain materials listed by the state of California as known to cause cancer and birth defects or other reproductive harm.

VOC Content

0 g/L.

Warning

EpoFil™ SLV Part A contains trade secret resin

Risks

May cause skin, eye and respiratory irritation. Ingestion may cause irritation. Potential skin and respiratory sensitizer. Repeated or prolonged contact with skin may cause sensitization. INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

Precautions

KEEP OUT OF THE REACH OF CHILDREN. Prevent contact with skin, eyes and clothing. Avoid breathing vapors. Wash thoroughly after handling. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable federal, state and local regulations. Empty container may contain hazardous residues. All label warnings must be observed until container is commercially cleaned or reconditioned.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. SEEK IMMEDIATE MEDICAL ATTENTION. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs, or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Refer to Material Safety Data Sheet (MSDS) for further information.

Proposition 65

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VOC Content

0 g/L.

Danger—Corrosive

EpoFil™ SLV Part B contains trade secret

Risks

Contact with skin or eyes may cause burns. May cause dermatitis and allergic reactions. Inhalation of vapors causes irritation. Ingestion may cause burns or other harm. INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

Precautions

KEEP OUT OF THE REACH OF CHILDREN. Prevent contact with skin, eyes and clothing. Wash thoroughly after handling. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or if used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable federal, state and local regulations. Empty container may contain hazardous residue. All label warnings must be observed until container is commercially cleaned or reconditioned.

First Aid

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VOC Content

EpoFil™: When components are mixed, this product contains 0 g/L of VOC per gallon of material.

EpoFil™ SLV: When components are mixed, this product contains 0 g/L less water and exempt solvents.

For medical emergencies only, call ChemTrec (1/800/424-9300)

Limited Warranty Notice

Every reasonable effort is made to apply ChemRex® exacting standards both in the manufacture of our products and in the information which we issue concerning these products and their use. We warrant our products to be of good quality and will replace or, at our election, refund the purchase price of any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. Therefore, except for such replacement or refund, CHEMREX® MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, RESPECTING ITS PRODUCTS, and CHEMREX® shall have no other liability with respect thereto. Any claim regarding product defect must be received in writing within one (1) year from the date of shipment. No claim will be considered without such written notice or after the specified time interval. User shall determine the suitability of the products for the intended use and assume all risks and liability in connection therewith. Any authorized change in the printed recommendations concerning the use of our products must bear the signature of the ChemRex® Technical Manager.



Sonneborn

ChemRex

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