



ChemMasters®

ChemPlug™

Fast Setting Hydraulic Cement

Sets in 4 to 6 minutes @70°F (21°C)

SPECIALTY CONSTRUCTION PRODUCTS

P R O D U C T D A T A

DESCRIPTION

ChemMasters' **ChemPlug** is a fast setting expansive hydraulic cement compounded to withstand continual exposure to water, even under pressure. **ChemPlug** fills and seals pores and voids in concrete and masonry surfaces. It sets in 4 to 6 minutes at 70°F (21°C).

USES

- Stops leaks with water tight seals
- Emergency repairs in concrete such as ruptured concrete water pipes
- Patch construction faults in precast and cast on location structures
- Stops leaks in basements, foundations, sewer pipes, manholes, and around conduit, gas and water lines that pass through concrete walls
- Under water repairs: swimming pools, cisterns, troughs, silos, tunnels, sewers, elevator pits, electrical vaults, marine structures
- Industrial, commercial, residential, electrical, and plumbing concrete repairs above or below grade horizontal, vertical and overhead surfaces

ADVANTAGES

- Sets under water to stop leaks immediately
- Does not deteriorate under continuous exposure to water
- Sets rapidly for emergency repairs with minimal downtime
- **ChemPlug** is available in three formulations designed for different set times @ 70°F (21°C):
 1. **ChemPlug** sets in 4 to 6 min.
 2. **ChemPlug F** sets in 1 to 2 min.
 3. **ChemPlug S** sets in 15 to 20 min.
- Slightly expansive with high compressive strength for durable repairs
- Economical to use, does not require special tools or procedures, mixes with water

ChemPlug Packaging Part Number

10 lb (4.5 kg) cans	4 per case	F3000.04
Pails 50 lb (22.7 kg)	36 per pallet	F3000.50

TECHNICAL DATA

Estimating Guide

17 in ³ per lb	603 cm ³ per kg
Yield 50 lbs (22. kg)	0.5ft ³ (0.014m ³)

ChemPlug Physical Properties

Set Times ASTM C191 Vicat Method	4 to 6 minutes @ 70°F (21°C)
Application Temp	40°F (10°C) to 80°F (27°C)
Flexural Strength ASTM C 348 @ 17 days 28 days	625 psi 860 psi
Compressive Strength ASTM C 109 1 hr 1 day 7 days	970 psi 1700 psi 5200 psi
Tensile Strength ASTM C 307 7 days	196 psi



ChemMasters®

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DIRECTIONS

Surface preparation: Enlarge crack or hole to a depth and width of 3/4" (1.9 cm). Undercut is best. Do not 'V' cut. Chip out joint cutting into both wall and floor in wall to floor joints. Brush out loose material. Dampen the surface if leak is not active.

Mixing: Add clean potable room temperature water to a small amount of **ChemPlug** until a putty like consistency is achieved. Do not mix more than can be placed before set time.

Low or High Temperatures: Under 40°F (4°C) warm **ChemPlug** and mixing water to 70°F (21°C) to speed set time. For higher temperatures or when a slower set time is needed use cold water.

Application: Once **ChemPlug** is mixed with water, quickly place it firmly into opening and hold tightly with trowel or gloved hand for about 2 minutes or until mortar is hard. Do not twist or grind the mixed **ChemPlug** into place. This will weaken the repair. Do not over trowel surface.

To Stop Running Water: Prepare **ChemPlug** and water mixture. Seal crack from top to bottom. Force **ChemPlug** firmly into the point of greatest pressure. Hold it in place with trowel or gloved hand. Exert pressure until it hardens and water stops flowing. After material has set firmly shave excess material to be even with the surface.

To Seal Wall to Floor Joint: Prepare **ChemPlug** and water mixture. Force **ChemPlug** into crack and smooth to form a cove at the base of the wall.

Setting Anchor Bolts or Fixtures: Prepare **ChemPlug** and water mixture. Make a hole at least 0.5" (1.25cm) larger on all sides than the bolt or fixture to be anchored.

Walls of the hole should be dampened with clean potable water. Blow out any excess water. Pack firmly with **ChemPlug** mixture. Force in bolt or fixture. Tamp **ChemPlug** firmly in place. Keep damp for 60 minutes. Do not apply excessive load for several hours.

Underwater Applications: Contact ChemMasters' Technical Service Department for detailed instructions

Curing: **ChemPlug** continues to gain strength as long as it is damp. It should be kept wet for at least 60 minutes after installation to reach maximum initial strength. **ChemPlug** locks itself in by expanding as it cures. It becomes stronger and more water tight when subjected to water pressure.

LIMITATIONS

- **ChemPlug** hardens in 4 to 6 minutes. Prepare only enough for immediate use
- Do not use as a topping or as a repair mortar for traffic bearing surfaces
- Do not use as a non-shrink grout under columns or machinery
- Do not apply to frozen or frosted surfaces
- Keep moist for at least 60 minutes after installation to cure and reach maximum initial strength
- Do not use as a structural or machine support grout.
- Consult ChemMasters' Technical Service Department for recommendations

STORAGE

Store in a sealed moisture proof container in cool dry area. Shelf life of properly stored material is 2 years from date of manufacture.

CAUTIONS

Causes irritation to eyes. May cause skin irritation, sensitization, and chemical burns. Respiratory tract irritant. Use with adequate ventilation. Do not take internally. See Safety Data Sheet for proper handling instructions.

Keep out of Reach of Children

Proper application is the responsibility of the user. ChemMasters can only make technical recommendations and cannot provide quality control on the jobsite.

This Product is Formulated and Labeled for Industrial and Commercial Use Only

FOR BEST RESULTS AND SAFEST USAGE, USER IS SPECIFICALLY DIRECTED TO CONSULT THE CURRENT MATERIAL SAFETY DATA SHEET AND PACKAGE LABEL FOR THIS PRODUCT. We warrant our products to meet our published specifications and to be free from defects in materials and workmanship to the acceptable quality levels defined in these specifications. If acceptable quality levels are not specified, the acceptable quality levels will be those normally supplied by us for the product. We make no guarantee of the results to be obtained from the use of our products. The determination as to the adaptability of any of our products to the specific needs of the Buyer is solely Buyer's prerogative and responsibility. We are glad to offer suggestions on the use of our products. Nevertheless, there are no warranties given except such expresses warranties offered in connection with the sale of a particular product. Our liability shall be limited to replacement of, or refund of an amount not to exceed the purchase price attributed to, the goods as to which such claim is made. Our selection of one of these alternatives shall be Buyer's exclusive remedy. IN NO CASE SHALL WE BE LIABLE FOR CONSEQUENTIAL OR SPECIAL DAMAGES, EVEN IF WE HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES, CO-CONDITIONS AND REPRESENTATIONS, EITHER EXPRESSED OR IMPLIED, WHETHER ARISING UNDER ANY STATUTE, COMMON LAW, USAGE OR TRADE, COURSE OF DEALING OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

SAFETY DATA SHEET



Issue Date: July 10, 2014

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Version: 2014.1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name(s): ChemPlug, ChemPlug F, ChemPlug S

Other Means of Identification

SDS #: F3000, F3010, F3016

Recommended Use: Concrete Restoration

Restrictions on Use: No Data

Supplier of the Safety Data Sheet including Address:

ChemMasters Inc.
300 Edwards Street
Madison, OH 44057

Telephone Numbers

Company Phone Number

Phone: 800-486-7866, 440-428-2105

Fax: 440-428-7091

Emergency Telephone: ChemTrec 800-424-9300 (United States & Canada), International Call: 1-703-527-3887

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards:

Harmful if swallowed. Causes severe skin burns and eye damage. Harmful if inhaled. Suspected of causing cancer by inhalation of respirable crystalline silica. Causes damage to Lungs through prolonged or repeated exposure by inhalation.

Target Organs: Lungs

GHS Classification:

Acute Toxicity Oral – Category 4

Carcinogenicity – Category 2

Eye damage/eye irritation – Category 1

Skin sensitization – Category 1

Skin irritation – Category 1

Specific target organ toxicity – repeated exposure – Category 2, Respiratory System

Label Elements, including precautionary statements

Pictograms:



Signal Word: DANGER

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Hazard Statements:

- H302 Harmful if swallowed
- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage
- H335 May cause respiratory irritation.
- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure if inhaled.

Precautionary Statement(s)

Prevention:

- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 Wash hands and skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:

- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P310 Immediately call a POISON CENTER/doctor.
- P303+P313+P310 IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with plenty of water or shower. Immediately call a POISON CENTER/doctor.
- P363 Wash contaminated clothing before reuse.
- P333+P313 If skin irritation or rash occurs: Get medical advice or attention.
- P304+P340+P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P314 Repeated Exposure: Get medical advice/attention if you feel unwell.

Storage:

- P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Disposal:

- P501 Dispose of contents/container in accordance with local/regional/national regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component

Crystalline Silica in the form of Quartz	CAS#: 14808-60-7	25-35%
Cement Mixture	CAS#: 65997-15-1 & 65997-16-2	65-75%
Calcium Magnesium Hydroxide	CAS#: 39445-23-3	1-5 %
Additives	Proprietary	<1%

Ingredients not listed on this safety data sheet are considered to be non-hazardous according to OSHA 1910.1200 or are not present above their cutoff levels. Where a range is displayed, the exact percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First Aid Measures

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Inhalation: If breathed in, move person into fresh air and keep comfortable for breathing. Consult a physician.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult a physician.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Skin Contact: Remove contaminated clothing. Wash off with soap and plenty of water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Material is Non-combustible. Use Water spray, alcohol-resistant foam, dry chemical, or carbon dioxide for surrounding fire.

Specific Hazards Arising from the Chemical

Avoid breathing dust. Wet cement is caustic.

Hazardous Combustion Products

Calcium Oxide, Sulfur Dioxide

Protective Equipment and Precautions for Firefighters

Wear self-contained breathing apparatus and full protective gear for firefighting.

Further Information: See Section 7 for safe handling and storage.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Avoid actions that cause the material to become airborne. Avoid inhalation of dust and contact with skin. Wear appropriate personal protective equipment during any cleanup and response activities.

Environmental Precautions

Do not wash cement down sewage and drainage systems or into bodies of water.

Methods and Material for Containment and Cleaning Up

Place spilled material into a container. Scrape wet material and place in container. Allow material to dry or solidify before disposal. Dispose of cement according to Federal, State, Provincial and Local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for Safe Storage, Including any Incompatibilities

General information: Keep bagged material dry until used. Stack bagged material in a secure manner to prevent falling. Bagged material is heavy and poses risks such as sprains and strains to the back, arms, shoulders and legs during lifting and mixing. Handle with care and use appropriate control measures.

Incompatibilities: Water will cause product to solidify.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Component Exposure Limits

Cement CAS#: 65997-15-1 OSHA 15 mg/m³ T (Total) / 5 mg/m³ R (Respirable)

Silica, Quartz CAS#: 14808-60-7 OSHA TWA 10 mg/m³, ACGIH TWA 0.025 mg/m³

Calcium Magnesium Hydroxide Hydrated CAS#: 39445-23-3 OSHA TLV 5 mg/m³

Appropriate Engineering Controls

Local Ventilation: Recommended

General Ventilation: Recommended

Individual Protection Measures, such as Personal Protective Equipment

Eye/Face Protection: Use proper protection – Safety Glasses as a minimum

Skin and Body Protection: Wash at mealtime and end of shift. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc.). Use chemical protective gloves as a minimum and wash skin promptly upon any skin contact.

Respiratory Protection: Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice. Wash hands before & after breaks and work day.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State

Appearance: Solid Powder

Color: Gray

Odor: Mild

Odor threshold: No Data

Property

Value

Remarks – Method

Vapor Pressure	Not Available	
Vapor Density	Not Available	
Relative Density	Not Available	
pH (In Water)	12-13	
Melting/Freezing Point	Not Relevant	
Solubility	Not Available	
Evaporation Rate	Not Available	
Flash Point	Not Relevant	
Flammability Limits	Not Available	
Flammability (Solid, gas)	Not Relevant	
Auto Ignition Temperature	Not Available	
Initial Boiling Point/Boiling Range	Not Available	
Decomposition Temperature	Not Available	
Viscosity	Not Available	
Specific Gravity	Not Available	

STABILITY AND REACTIVITY

Chemical Stability:

Stable.

Possibility of Hazardous Reactions:

Hazardous polymerization will not occur.

Conditions to Avoid:

Keep dry until use. Avoid contact with incompatible materials.

Incompatible Materials:

Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Hazardous Decomposition Products

None known

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Skin Contact, Eye Contact, Ingestion

Symptoms of Exposure:

Inhalation: May cause respiratory irritation

Skin: Causes severe skin burns. May cause allergic skin reaction.

Eyes: Causes serious eye damage

Ingestion: Irritation of the digestive system may occur if large amounts are swallowed.

Numerical measures of toxicity:

Acute Toxicity Value: Silica-LD50 oral rat 22,500 mg/kg

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-Term Exposure

Dermatitis:

Irritant Dermatitis is caused by physical properties of cement including alkalinity and abrasion. **Allergic Dermatitis** is caused by sensitization to hexavalent chromium (Chromate) present in cement. The reaction can range from a mild rash to severe skin ulcers. Persons already sensitized may react to the first contact with cement. Others may develop allergic dermatitis after years of repeated contact with cement.

Carcinogenicity:

IARC: 1-Group 1: Carcinogenic to humans (Quartz)

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: Carcinogenic to humans (Quartz)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Specific target organ toxicity: Single exposure – No data available.

Specific target organ toxicity: Repeated exposure – Category 2, Respiratory System.

Silicosis: Silicosis is caused by the inhalation and retention of respirable crystalline silica dust.

Simple Chronic Silicosis - results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD).

Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years). Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis.

Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels.

Pre-Existing Conditions: Cement dust is irritating to the nose, throat and respiratory tract causing coughing and sneezing. Pre-existing upper respiratory and lung diseases including asthma and bronchitis may be aggravated.

12. ECOLOGICAL INFORMATION

Eco toxicity: Not expected to be hazardous to the environment.

Persistence and Degradability: No Data Available

Bioaccumulation: No Data Available

Mobility: No Data Available

Other Adverse Effects: No Data Available

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes: This product is not expected to be a hazardous waste under RCRA. Place spilled material into a container. Scrape wet material and place in container. Allow material to dry or solidify before disposal. Dispose of according to Federal, State, Provincial and Local regulations.

Contaminated Packaging: Dispose of as unused material.

14. TRANSPORT INFORMATION

DOT: Not a Dangerous Good

IATA: Not a Dangerous Good

IMDG: Not a Dangerous Good

Marine Pollutant: No

15. REGULATORY INFORMATION

International Inventories

TSCA: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

US Federal Regulations

SARA 302: None Known

SARA 311/312 Hazard Categories: Acute Health Hazard, Chronic Health Hazard

SARA 313 Hazard Categories: None Known

CWA (Clean Water Act): None Known

Supplemental State Compliance Information

California:

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm.

Quartz CAS#:14808-60-7
Hexavalent Chromium Compounds

New Jersey Right TO Know

CAS Number	Component Name
14808-60-7	Quartz

Pennsylvania Right To Know

CAS Number	Component Name
14808-60-7	Quartz

Massachusetts Right To Know

CAS Number	Component Name
14808-60-7	Quartz

U.S. EPA Label Information: No Data

Canada

WHMIS Classification: Class D2B (Toxic) & Class E (Corrosive)

Symbol: Stylized T, Corrosive



16. OTHER INFORMATION

HMIS Classification:

Health hazard:	2
Flammability:	0
Physical Hazards:	0

NFPA Rating:

Health hazard:	2
Fire:	0
Reactivity Hazard:	0

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet