

SAFETY DATA SHEET

SECTION 1 **PRODUCT AND COMPANY IDENTIFICATION**

PRODUCT:

Product Identifier: Curing Agent
 Product Description: Curing Agent for Solidifying Conductive Pourable Backfill
 Recommended Use: Curing Agent for SAE Inc. ConduFlow®

**COMPANY IDENTIFICATION:
 SUPPLIER**

SAE Inc.
 691 Bayview Drive
 Barrie, Ontario, Canada L4N 9A5
 +1 (705) 733-3307
 www.saeinc.com

SECTION 2 **HAZARDS IDENTIFICATION**

CLASSIFICATION OF THE MIXTURE:

Skin Irritation Cat. 2; H315
 Eye Damage Cat. 1; H318
 Specific Target Organ Toxicity, Single Exposure, Cat. 3; H335
 Carcinogenicity Cat. 1; H350 (inhalation)
 Specific Target Organ Toxicity, Repeated Exposure, Cat. 1; H372 (inhalation)

LABELLING:

SYMBOLS:



Signal Word: Danger

Hazard Statements:

- H315: Causes skin irritation
- H318: Causes serious eye damage
- H335: May cause respiratory irritation
- H350: May cause cancer by inhalation
- H372: Causes damage to lungs through prolonged or repeated exposure by inhalation

Other Hazards:

- Dusts from this product, when combined with water or sweat, produce a corrosive alkaline solution.

Precautionary Statements:

Prevention

- P260: Do not breathe dusts.
- P264: Wash hands thoroughly after handling.
- P270: Do not eat, drink, or smoke when using this product.
- P271: Use only outdoors or in a well-ventilated area.
- P280: Wear protective gloves/clothing and eye protection/face protection.

Response

- P302+P352: IF ON SKIN: Wash with plenty of water.
- P321: Specific treatment: Caustic burns must be treated promptly by a doctor.
- P332+P313: If skin irritation occurs: Get medical advice/attention.
- P362+P364: Take off contaminated clothing and wash it before reuse.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P402: Store in a dry place.
- P501: Recycle and or dispose of contents/containers in accordance with local/regional/national/international regulations.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Wt. %	GHS Classification
Portland Cement	65997-15-1	90 - 100	Skin Irrit. 2; H315 / Eye Dam. 1; H318 / STOT SE 3; H335
Calcium Oxide	1305-78-8	0.3 – 3.0	Skin Irrit. 2; H315 / Eye Dam. 1; H318
Crystalline Silica	14808-60-7	0.1 – 1.5	Carc. 1; H350 / STOT RE1; H372
Chromate compounds	Not available	<0.1	Not available
Nickel compounds	Not available	<0.1	Not available

SECTION 4 FIRST AID MEASURES

- PRECAUTIONS:** First aid providers should avoid direct contact with this chemical. Wear chemical protective gloves, if necessary. Take precautions to ensure your own safety before attempting rescue, (e.g. wear appropriate protective equipment).
- EYE:** Immediately rinse eyes with running water for several minutes while forcing eyelids open during flushing. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention immediately after flushing. Take care not to rinse contaminated water into the unaffected eye or onto face.
- SKIN:** Wash affected areas with non-abrasive pH neutral soap and lukewarm running water and remove contaminated clothing. Launder contaminated clothing before reuse. Seek medical attention for rashes, burns, irritation, dermatitis, and prolonged unprotected exposures to wet cement, cement mixtures, or liquids from wet cement. Burns should be treated promptly by a doctor.
- INHALATION:** If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Seek medical help if coughing or other symptoms persist. Inhalation of large amounts of Portland cement requires immediate medical attention. Call a poison control center or doctor. If the individual is not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.
- INGESTION:** Rinse mouth. Do NOT induce vomiting. If large amounts were ingested obtain medical attention immediately or transport victim to an emergency treatment center.

Most Important Symptoms and Effects, both Acute and Delayed:

Inhalation: High concentrations of airborne dusts are severely irritating to the upper respiratory tract with symptoms such as coughing, sneezing and shortness of breath. Long-term inhalation exposure to dusts containing respirable size crystalline silica can cause silicosis and lung cancer.

Eye Contact: Severely irritating in contact with eyes. Causes eye damage which may be permanent and may cause blindness. Solid particles react with moisture in the eye to form clumps of moist compound which may be difficult to remove.

Skin Contact: Dusts from this product, when combined with water or sweat, produce a severely irritating alkaline solution and burning of the skin. Symptoms include pain, burns, skin dryness, cracking and eczema. Wet product causes burns with little warning. Discomfort or pain cannot be relied upon to alert a person to a serious injury; symptoms of pain and burn may be delayed for hours. May cause an allergic skin reaction from trace amounts of sensitizing metals in lime.

Ingestion: Severely irritating to the mouth, throat, and gastro-intestinal system if swallowed. Symptoms may include severe pain and burning of the mouth, throat, esophagus and gastrointestinal tract with nausea, vomiting and diarrhea. If aspiration into the lungs occurs during vomiting, severe lung damage may result.

Indication of any Immediate Medical Attention and Special Treatment Needed:

Corrosive material; get immediate medical advice/attention if inhaled, if swallowed or if in eyes.

SECTION 5 FIRE FIGHTING MEASURES

- EXTINGUISHING MEDIA:** Use extinguishing media appropriate to the surrounding fire conditions. Use flooding quantities of water as a spray.

SECTION 5 FIRE FIGHTING MEASURES, CONTINUED

Unsuitable Extinguishing Media:	Use caution when using water. Do not get water inside closed containers; contact with water will generate heat. Water jet may cause spattering of the corrosive solution. Use caution when using CO ₂ ; it may scatter the dry powder.
SPECIAL HAZARDS:	Product is not flammable or combustible. Corrosive; reacts with water forming an alkaline solution.
ADVICE FOR FIREFIGHTERS:	Firefighters must wear full protective equipment including self-contained breathing apparatus with chemical protection clothing when firefighters are exposed to decomposition products from this material.

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:	Wear adequate personal protective equipment, including an appropriate respirator as indicated in Section 8. Isolate spill area, preventing entry by unauthorized persons. Do not touch spilled material. Do not breathe dusts.
ENVIRONMENTAL PRECAUTIONS:	Avoid releases to the environment and prevent material from entering sewers, natural waterways or storm water management systems.
METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:	Move containers from spill area. Avoid dust generation and prevent wind dispersal. Vacuum dust with equipment fitted with a HEPA filter and place in a closed labelled waste container. Small spills may be picked up with a damp mop.
REFERENCE TO OTHER SECTIONS:	See Section 8 for information on selection of personal protective equipment. See Section 13 for information on disposal of spilled product and contaminated absorbents.

SECTION 7 HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING:	Before handling, it is important that engineering controls are operating, protective equipment requirements and personal hygiene measures are being followed. People working with this should be trained regarding its hazards and its safe use. Do not breathe dusts. Wash hands and exposed skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Prevent eye contact: Wear protective gloves/protective clothing and eye protection/face protection.
CONDITIONS FOR SAFE STORAGE:	Store in a dry, well-ventilated area, away from incompatible materials. Keep containers closed. Protect from moisture/humidity. Store in a place accessible by authorized persons only. Store away from food and animal feed. Keep out of reach of children.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

**CONTROL PARAMETERS:
Occupational Exposure Limits:**

Ingredient	ACGIH TLV (8-hr. TWA)	U.S. OSHA PEL (8-hr. TWA)	Ontario (Canada) TWA
Portland Cement (respirable)*	1 mg/m ³	15 mg/m ³ (total dust) 5 mg/m ³ (respirable)	Refer to ACGIH TLV
Calcium oxide	2 mg/m ³	5 mg/m ³	Refer to ACGIH TLV
Crystalline silica (Quartz)	0.025 mg/m ³ (respirable)	Quartz (total dust): 30 mg/m ³ / (%SiO ₂ + 2) Quartz (respirable): 10 mg/m ³ / (%SiO ₂ + 2)	0.1 mg/m ³ (respirable) Designated Substance

*value for particulate matter containing no asbestos and less than 1% crystalline silica.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION, CONTINUED

Other Exposure Limits:

Ingredient	NIOSH REL	NIOSH IDLH (Immediately Dangerous to Life or Health)
Portland Cement	10 mg/m ³	5000 mg/m ³
Calcium Oxide	2 mg/m ³	25 mg/m ³

EXPOSURE CONTROLS:

Engineering Controls:

Handle product in an area provided with appropriate exhaust ventilation. Handle in accordance with good industrial hygiene and safety practices. Ensure regular cleaning of equipment, work area and clothing. If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection. Have equipment available for use in emergencies such as spills or fire.

Personal Protection:

Workers must comply with the Personal Protective Equipment requirements of the workplace in which this product is handled.

Eye/Face Protection:

Wear approved safety glasses with side-shields or chemical safety goggles. Wear a face-shield or full-face respirator when needed to prevent exposure to airborne dusts. The use of contact lenses is not recommended.

Skin Protection:

Wear chemical protective gloves, suit, and boots to prevent skin exposure. Waterproof and cut/abrasion-resistant rubber, such as Heavyweight nitrile gloves, boots and body-covering clothing may be used to prevent dermal exposures to this material. Evaluate resistance under conditions of use and maintain protective clothing carefully. Contact safety supplier for specifications.

Respiratory Protection:

Approved respiratory protective equipment (RPE) is required if other controls are unable to maintain occupational exposure below the legislated levels. An approved respirator, NIOSH 95 rating or higher, must be available in case of accidental releases. Proper respiratory selection should be determined by adequately trained personnel and based on the contaminant(s), the degree of potential exposure and published respirator protection factors.

A respiratory protection program that meets the regulatory requirement, such as OSHA's 29 CFR 1910.134, ANSI Z88.2 or Canadian Standards Association (CSA) Standard Z94.4, must be followed whenever workplace conditions warrant a respirator's use.

Other Protection:

Have a safety shower and eyewash station readily available in the work area.

Every attempt should be made to avoid skin and eye contact. Do not get powder inside boots, shoes, or gloves. Do not allow wet, saturated clothing to remain against the skin. Promptly remove clothing and shoes that are dusty or wet. Wash clothing and shoes thoroughly before reuse.

Do not eat, drink or smoke where this material is handled, stored and processed. Wash hands thoroughly before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Environmental Exposure Controls:

Emissions from ventilation or work process equipment should be monitored to ensure they comply with the requirements of environmental protection legislation.

SECTION 9 PHYSICAL/CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

Appearance:	Solid; grey or white powder
Odour:	Odourless
Odour Threshold:	Not applicable
pH:	12 – 13 (ASTM D1293-95)
Melting point/Freezing point:	Not applicable
Initial Boiling Point and boiling range:	Not applicable
Flash point:	Not applicable
Flammability:	Not flammable or combustible
Auto-ignition temperature:	Not available
Upper/lower flammability or explosive limits:	Not applicable
Explosive properties:	Not applicable
Oxidising properties:	Not applicable
Sensitivity to mechanical impact:	Not applicable
Sensitivity to static discharge:	Not applicable
Vapour pressure:	Not applicable
Vapour density:	Not applicable
Relative density:	3.15 (water = 1)
Solubility:	Slightly soluble in water (0.1 – 1%)
Partition coefficient (n-octanol/water):	Not applicable
Decomposition temperature:	Not available
Viscosity:	Not applicable

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY:	Reacts slowly with water forming hydrated compounds, releasing heat and a strongly alkaline solution.
CHEMICAL STABILITY:	This product is stable in a closed container under normal conditions of storage and use.
POSSIBILITY OF HAZARDOUS REACTIONS:	Aqueous solutions are highly alkaline and may corrode aluminum.
CONDITIONS TO AVOID:	Avoid unintentional contact with water/moisture and with strong acids and other incompatible materials.
INCOMPATIBLE MATERIALS:	Strong acids – Incompatible with strong acids; may react vigorously. Water – reaction generates heat. Aluminum – Aluminum powder and other alkali earth elements will react in the presence of water liberating extremely flammable hydrogen gas. Calcium oxide is corrosive to aluminum metal. Reacts with Ammonium salts
HAZARDOUS DECOMPOSITION PRODUCTS:	In contact with water and moisture, generates corrosive calcium hydroxide.

SECTION 11 TOXICOLOGICAL INFORMATION

LIKELY ROUTES OF EXPOSURE:	Eye and Skin contact, Inhalation of dust.
ACUTE TOXICITY DATA:	Data not available for the mixture.
Skin corrosion/irritation:	Based on information for Portland cement and calcium oxide: Causes skin irritation. May cause caustic burns when in prolonged contact with the skin. Irritating or corrosive to mouth, throat and gastro-intestinal tract.
Serious eye damage/irritation:	Based on information for Portland cement and calcium oxide: Causes serious eye damage and possible blindness. Damage may be permanent if treatment is not immediate.

SECTION 11 **TOXICOLOGICAL INFORMATION, CONTINUED**

Specific Target Organ Toxicity Single Exposure:	Breathing dusts causes respiratory irritation. Inflammation of the respiratory passages, ulceration and perforation of the nasal septum and pneumonia has been attributed to the inhalation of dust containing calcium oxide.
Aspiration Hazard:	This material is corrosive; if aspiration into the lungs occurs during vomiting, severe lung damage may result.
CHRONIC TOXICITY:	
Specific Target Organ Toxicity Repeated Exposure:	Prolonged and repeated breathing of dust may cause lung disease. The extent and severity of lung injury correlates with the length of exposure and dust concentration. Inflammation of the respiratory passages, ulceration and perforation of the nasal septum and pneumonia has been attributed to the inhalation of dust containing calcium oxide. Contains crystalline silica. Long-term exposure to fine airborne crystalline silica dust may cause silicosis a form of pulmonary fibrosis that can cause shortness of breath, cough and reduced lung function. Particles with diameters less than 1 micrometer are considered most hazardous.
Respiratory and/or Skin Sensitization:	Product may contain trace concentrations (<0.1%) of Chromate and Nickel compounds that can cause an allergic skin reaction. Further skin contact may result in inflammation, rash and itching. Not known to be a respiratory sensitizer.
Germ Cell Mutagenicity:	Not available.
Reproductive Effects:	Not available.
Developmental Effects:	Not available.
Effects on or via Lactation:	Not available.
Carcinogenicity:	Portland cement is not classifiable as a human carcinogen. Crystalline silica is considered a hazard by inhalation. IARC has classified crystalline silica as a Group 1 substance, carcinogenic to humans. This classification is based on the findings of laboratory animal studies (inhalation and implantation) and epidemiology studies that were considered sufficient for carcinogenicity.
Interactions with Other Chemicals:	Not available.

SECTION 12 **ECOLOGICAL INFORMATION**

ECOTOXICITY	Harmful to aquatic life. Contact with water forms an alkaline solution. Avoid release to the environment. <u>Data for Calcium oxide:</u> 96 hour LC ₅₀ freshwater fish <i>Cyprinus carpio</i> = 1070 mg/L (static) Chronic 46 day NOEC freshwater fish <i>Oreochromis niloticus</i> juvenile (fledgling, hatchling, weanling) = 100 mg/L
PERSISTENCE AND DEGRADABILITY:	Not available.
BIOACCUMULATION POTENTIAL:	Not available.
MOBILITY IN SOIL:	Not available.
OTHER ADVERSE EFFECTS:	Not available

SECTION 13 DISPOSAL CONSIDERATIONS

DISPOSAL METHODS:

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Untreated waste should not be released to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe manner. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff, and contact with soil, waterways, drains and sewers.

SECTION 14 TRANSPORT INFORMATION

UN NUMBER:	Cement is not covered by international transport regulations (IMDG, UN Model Regulations).
UN PROPER SHIPPING NAME:	Not applicable
TRANSPORT HAZARD CLASS(ES):	Not applicable
PACKING GROUP:	Not applicable
ENVIRONMENTAL HAZARDS:	Not available
SPECIAL PRECAUTIONS FOR USER:	Not available
U.S. HAZARDOUS MATERIALS REGULATION (DOT 49CFR):	Not regulated except for transport by aircraft.
CANADA TRANSPORTATION OF DANGEROUS GOODS (TDG) REGULATIONS:	Not regulated except for transport by aircraft.

SECTION 15 REGULATORY INFORMATION

SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE:**USA**

TSCA Status: Substances are listed on the TSCA inventory or are exempt.

California Proposition 65:

California Proposition 65 Information: This product contains, or may contain, trace quantities of a substance known to the state of California to cause cancer. Portland cement may contain 0.1 – 1.5 wt% of crystalline silica (CAS No. 14808-60-7).

OSHA HazCom 2012 Hazards:

Skin Irritation – Cat. 2
 Eye Damage – Cat. 1
 Specific Target Organ Toxicity, Single Exposure – Cat. 3
 Carcinogenicity – Cat. 1 (inhalation)
 Specific Target Organ Toxicity, Repeated Exposure – Cat. 1 (inhalation)

CANADA

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the SDS contains all the information required by the *Controlled Products Regulations*.

WHMIS 1988 Classification:

D2A – Other toxic effects (Untested mixture containing crystalline silica).
 E – Corrosive – Mixture containing calcium oxide; pH > 12

NSNR Status:

Substances are listed on the DSL or are exempt.

SECTION 16**OTHER INFORMATION**

REVISION DATE:

February 13, 2020

ADDITIONAL INFORMATION:

This safety data sheet is believed to provide a useful summary of the hazards of ConduFlow® Curing Agent as it is commonly used, but cannot anticipate and provide all of the information that might be needed in every situation. It relates specifically to the product designated and may not be valid for the product when used with any other materials or products or in a particular process.

The information provided herein was believed by SAE Inc. to be accurate at the time of preparation or prepared from sources believed to be reliable. However, no representation, warranty or guarantee, express or implied, is made as to its accuracy, reliability or completeness. It is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe handling and use of product and to determine the suitability of the product for its intended use. We do not accept responsibility for any-loss or damage which may occur from the use of this information.