

# Material Safety Data Sheet

Reference MSDS-US-CAC-8/06

## Calcium Aluminate Cement

Updated 8/24/2006

### 1 Product and company identification

- Product Name**

Calcium Aluminate Cement

- Trade Names**

Ciment Fondu<sup>®</sup>, Secar<sup>®</sup> 41, Secar<sup>®</sup> 51, Secar<sup>®</sup> 60, Secar<sup>®</sup> 71 and Secar<sup>®</sup> 80

- Supplier**

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The generic CAS number for the polyphasic aluminate cement is:

Calcium aluminate cement 65997-16-2

Calcium aluminate cement does not contain free lime or crystalline silica (such as quartz, tridymite or cristobalite) in measurable amounts.

- CAS number**

Ciment Fondu<sup>®</sup>, Secar<sup>®</sup> 41, Secar<sup>®</sup> 51, Secar<sup>®</sup> 60, Secar 71

**65997-16-2** 100%

Secar<sup>®</sup> 80 **65997-16-2** 40-80%  
**1344-28-1** 20-60%

### 2 Composition / Information on ingredients

- Chemical Nature**

Substance obtained from the milling of a calcium aluminate clinker. The major elements appearing in the clinker are oxides based on Al, Ca, Si and Fe. The cement particles are polyphasic and as such the following mineralogical phases can be found depending on the grade of clinker.

CaO•Al <sub>2</sub> O <sub>3</sub>	12042-68-1
CaO•2Al <sub>2</sub> O <sub>3</sub>	12004-88-5
12CaO•7Al <sub>2</sub> O <sub>3</sub>	12005-57-1
2CaO•Al <sub>2</sub> O <sub>3</sub> •SiO <sub>2</sub>	12068-46-1
4CaO•Al <sub>2</sub> O <sub>3</sub> •Fe <sub>2</sub> O <sub>3</sub>	12068-35-8
Al <sub>2</sub> O <sub>3</sub> (α, β)	1344-28-1

### 3 Hazards Identification

- HMIS Rating (NPCA)**

Health	0	Flammability	0
Reactivity	0	Personal Protection	0

- NFPA Rating**



Health	0	Flammability	0
Reactivity	0	Special	0

## Calcium Aluminate Cement

- **WHMIS Classification**



Class D, division 2B toxic material

skin or eye irritant

Class E, corrosive material

forms alkaline solution with water

- **Most important hazards**

In contact with water, an alkaline solution will be formed (pH 11 – 11.5). In spite of the pH level, the alkaline reserve is limited and the product has not been classified as irritant according to the criteria defined in the EEC directives (93/21/EEC)

A dust problem may occur in confined areas. It is regarded as nuisance dust without any known specific effects to health.

- **Specific hazards**

Calcium aluminates react chemically and harden when mixed with water. The reaction is exothermic resulting in a temperature rise. If large quantities of cement are exposed to sufficient quantities of water, steam can be formed and the temperature may increase enough to cause a risk of burns during the reaction.

- **Carcinogen listed in:**

Calcium aluminate cement is not a listed carcinogen with NTP, OSHA or IARC monograph.

### 4 First aid measures

- **Inhalation**

Remove person to fresh air. If symptoms persist, seek medical attention

- **Skin contact**

Remove contaminated clothing and wash affected area with soap and water.

- **Eye contact**

Flush eyes with plenty of clean water. If symptoms persist, seek medical attention.

- **Ingestion**

Do not induce vomiting. Wash mouth with water and give plenty of water to drink.

### 5 Fire-fighting measures

Calcium aluminate cement is not flammable and will not support a flame. It does not promote combustion with other materials.

### 6 Accidental release measures

- **Personal precautions**

See section 7 and 8

- **Environmental precautions**

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## Calcium Aluminate Cement

Avoid emission of dust

- **Methods of cleaning up**

For large amounts, preferable use dry methods while avoiding dust exposure.

Do not empty material into drains, sewers or water basins as the material hardens in contact with water.

### 7 Handling and storage

- **Technical measures and precautions**

Use common procedures for handling and storage of industrial powder products with particular attention to suppression of dust and spillage, to avoid unnecessary exposure.

Store in dry conditions, preferably above ground protected by shrink wrap or in bulk silo.

- **Safe handling advise**

No particular precautions.

- **Incompatible products**

Contact with water or water vapor during storage will hydrate the product which will cause lumps and affect the performance.

- **Packaging materials**

No special restrictions with respect to safety.

### 8 Exposure control / personal protection

- **Engineering measures**

Mechanical ventilation is recommended wherever feasible for evacuation of dust during handling operations (discharging, mixing, conveying, packing, etc.).

- **Control parameters**

The following occupational exposure limits defined for non specified nuisance dust are applicable.

	OSHA PEL	ACGIH PEL
Total dust	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
Respirable dust	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>

- **Personal protective equipment**

ANSI approved glasses or goggles should be worn whenever there is a risk of powder or wet mixture entering the eyes.

Protective clothing is recommended, including waterproof gloves and boots.

NIOSH approved respiratory protection should be worn when the conditions are such that the personal exposure is estimated to approach or exceed the stated limits.

### 9 Physical and chemical properties

**Physical State:** Dry powder

**Color:** Fondu – dark brown

Secar 41 – brown

Secar 51 – grey

Secar 60 – buff

Secar 71 – white

## Calcium Aluminate Cement

Secar 80 – white

<b>Odor:</b>	none
<b>Specific gravity:</b>	2.9 – 3.3
<b>Vapor density:</b>	n/a
<b>Vapor pressure:</b>	n/a
<b>Evaporation rate:</b>	n/a
<b>Boiling point:</b>	n/a
<b>Freezing point:</b>	n/a
<b>pH:</b>	11 – 11.5 when wet
<b>Water solubility:</b>	negligible

May cause local irritation to eye, throat or skin, but is not classified as irritant according to EEC legislation

- **Sensitization and chronic toxicity**

Does not contain measurable amounts of soluble Chromium (VI)

### 10 Stability and reactivity

- **Stability**

In a dry environment the product is chemically stable.

When mixed with water it reacts chemically and hardens, forming stable calcium aluminate hydrates. The reaction is exothermic and continues for up to 24h. Total heat released is < 500 kJ/kg.

- **Hazardous decomposition products**

None.

### 11 Toxicological information

- **Acute toxicity**

None.

- **Local effects**

### 12 Ecological information

- **Possible environmental effects**

After hydration (a few hours or days in moist conditions) the product is stable in soil and in water, with a negligible mobility of its constituents.

### 13 Disposal considerations

Bags of unused material or empty contaminated packaging, as well as hardened residue may be disposed by landfill, if in accordance with local or national disposal regulations.

The conditions or methods for handling, stocking, using or eliminating this product are beyond the control of Kerneos. Kerneos shall therefore not be held liable in case of loss, damage or any expense incurred related to the handling, the stocking, the use or the elimination of this product howsoever.

## Calcium Aluminate Cement

### 14 Transport information

This product is not classified as a hazardous material under U.S. DOT or Canadian TDG regulations.

### 15 Regulatory information

- **CERCLA/Superfund**

This product is not listed as a CERCLA hazardous substance.

- **Inventory listings**

This substance is listed on:

- U.S. TSCA inventory Section 8 (b)
- Canadian Inventory, the DSL

### 16 Other information

This MSDS follows:

- OSHA CFR 1910.1200 on hazard communication
- It has been prepared by the technical department of Kerneos Inc., Chesapeake, VA.
- This version applies to Kerneos products distributed in North America. For users outside this area please consult your local office for a current MSDS.
- An electronic version of this MSDS is available at: [www.Kerneosinc.com](http://www.Kerneosinc.com) under the products section

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