1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Code 993
Product Name CALCIUM ALUMINATE CEMENT
Contains Calcium aluminate, CAS 65997-16-2

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Hydraulic binder. Used for production of refractory concretes and mortars and as ingredient of construction materials and construction chemistry products
Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Almatis GmbH Lyoner Str. 9 60528 Frankfurt Germany Phone: +49 69 9573410
Almatis B.V. Theemsweg 30 NL-3197 KM Botlek Rt The Netherlands Phone: +31 181270129

For further information, please contact

E-mail address info@almatis.com

1.4. Emergency telephone number

Emergency Telephone Number 3E Global Incident Response Hotline (Almatis access code: 334735)
GB: +44 20 35147487
UK: 0 800 680 0425
US: +01 760 476 3961
US: +01 760 476 3959

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008
Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Classification according to Regulation (EC) No. 1272/2008 [CLP]
No data available

2.2. Label Elements

Symbol(s) Not applicable
Signal word
None

Hazard statements
None

2.3. Other information
No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>REACH Reg. No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>1344-28-1</td>
<td>0-50</td>
<td>01-2119529248-35-0024</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>01-2119529248-35-0125</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>01-2119529248-35-0086</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>01-2119529248-35-0238</td>
</tr>
<tr>
<td>Calcium aluminate</td>
<td>65997-16-2</td>
<td>40-100</td>
<td></td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Skin Contact
Wash skin with soap and water.

Ingestion
Rinse mouth

Inhalation
Remove to fresh air

General Advice
If symptoms persist, call a physician
Show this safety data sheet to the doctor in attendance

4.2. Most important symptoms and effects, both acute and delayed

Mild eye irritation
Mild skin irritant

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician
Treat symptomatically

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media
Suitable Extinguishing Media
The product itself does not burn
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Extinguishing media which must not be used for safety reasons
No information available

5.2. Special hazards arising from the substance or mixture
Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases
None in particular.

5.3. Advice for firefighters
Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures
Wear personal protective equipment
Avoid dust formation

### 6.2. Environmental precautions
Do not flush into surface water or sanitary sewer system
Do not contaminate surface water

### 6.3. Methods and material for containment and cleaning up
Recover product. Place into appropriate container for disposal.

Methods for Cleaning Up
Sweep up and shovel into suitable containers for disposal

### 6.4. Reference to other sections
See Section 12 for additional information.

## 7. HANDLING AND STORAGE

### 7.1. Precautions for Safe Handling
Handling
Provide appropriate exhaust ventilation at places where dust is formed

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice

Exposure scenario
No information available

### 7.2. Conditions for safe storage, including any incompatibilities
Keep in a dry place
Protect from moisture.

### 7.3. Specific end use(s)
No information available

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>EU</th>
<th>United Kingdom</th>
<th>France</th>
<th>Spain</th>
<th>Germany OEL (TWA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td></td>
<td></td>
<td>VME: 10 mg/m³</td>
<td>VLA-ED: 10 mg/m³</td>
<td>1.25 mg/m³</td>
</tr>
<tr>
<td>1344-28-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.0 mg/m³(a)</td>
</tr>
<tr>
<td>Calcium aluminate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.0 mg/m³</td>
</tr>
<tr>
<td>65997-16-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) GOEL - Germany - TRGS 900 - Occupational Exposure Limits - TWAs, (a) exempt facilities listed in 2.4(8) and (9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Component

<table>
<thead>
<tr>
<th>Component</th>
<th>Italy</th>
<th>Portugal</th>
<th>Netherlands</th>
<th>Finland</th>
<th>Denmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td></td>
<td>TWA: 10 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1344-28-1 ( 0-50 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Component

<table>
<thead>
<tr>
<th>Component</th>
<th>OSHA PEL</th>
<th>ACGIH TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)</td>
<td>1 mg/m³ TWA (respirable fraction)</td>
</tr>
<tr>
<td>1344-28-1 ( 0-50 )</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Derived No Effect Level (DNEL)**
No information available
8.2. Exposure controls
Personal protective equipment

Eye Protection  Wear safety glasses with side shields (or goggles)
Skin Protection  No special protective equipment required.
Hand Protection  No special protective equipment required.
Respiratory Protection  In case of insufficient ventilation, wear suitable respiratory equipment
               When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

Environmental exposure controls  No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Powder</td>
</tr>
<tr>
<td>Color</td>
<td>Off-white</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>pH</td>
<td>11.3 - 11.5</td>
</tr>
<tr>
<td>Flash point (°C) DEGREES</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Autoignition temp (°F) DEGREES</td>
<td>Does not ignite</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td></td>
</tr>
<tr>
<td>Melting point (°C) VALUE</td>
<td>1650 - 1820</td>
</tr>
<tr>
<td>Melting point (°C) DEGREES</td>
<td>°C</td>
</tr>
<tr>
<td>Solubility</td>
<td>Slightly soluble</td>
</tr>
<tr>
<td>Density</td>
<td>2.8-3.3 g/cm³</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>750-1100 kg/m³</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

10.1. Reactivity
None under normal processing

10.2. Chemical Stability
Stable under normal conditions

10.3. Possibility of Hazardous Reactions
None under normal processing

10.4. Conditions to Avoid
None under normal processing

10.5. Incompatible materials
None under normal processing

10.6. Hazardous Decomposition Products
None under normal processing

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects
Acute Toxicity

<table>
<thead>
<tr>
<th>Toxicity Type</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity - Dermal</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity - Inhalation</td>
<td>Not classified</td>
</tr>
</tbody>
</table>
(Dusts/Mists)

Oral LD50 > 5000 mg/kg (rat)
Dermal LD50 No effect
Inhalation LC50 > 5 mg/m^3 (rat)

Chronic Toxicity

Irritation Conclusive but not sufficient for classification
Corrosivity Conclusive but not sufficient for classification
Sensitization Conclusive but not sufficient for classification
Mutagenic Effects Conclusive but not sufficient for classification
Carcinogenic effects Conclusive but not sufficient for classification
Reproductive Effects Conclusive but not sufficient for classification
Developmental Effects Conclusive but not sufficient for classification
Aspiration Hazard Conclusive but not sufficient for classification

12. ECOLOGICAL INFORMATION

12.1. Toxicity
Ecotoxicity effects
Water hazard class 1 (German Regulation): slightly hazardous for water
WGK Kenn-Nr. 2652 (Calcium aluminate)

12.2. Persistence and degradability
No information available

12.3. Bioaccumulative potential.
No information available

12.4. Mobility in soil
No information available

12.5. Results of PBT and vPvB assessment
No information available

12.6. Other adverse effects

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Waste from Residues/Unused Products
Disposal should be in accordance with applicable regional, national and local laws and regulations

Contaminated Packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal

14. TRANSPORT INFORMATION

Note: Not classified as dangerous in the meaning of transport regulations

IMDG/IMO Not regulated.
RID Not regulated.
ADR Not regulated
ICAO Not regulated
IATA Not regulated

15. REGULATORY INFORMATION
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA</td>
<td>Complies</td>
</tr>
<tr>
<td>EINECS/ELINCS</td>
<td>Complies</td>
</tr>
<tr>
<td>DSL/NDSL</td>
<td>Listed on DSL</td>
</tr>
<tr>
<td>PICCS</td>
<td>Complies</td>
</tr>
<tr>
<td>ENCS</td>
<td>Complies</td>
</tr>
<tr>
<td>IECSC</td>
<td>Complies</td>
</tr>
<tr>
<td>AICS</td>
<td>Complies</td>
</tr>
<tr>
<td>KECL</td>
<td>Complies</td>
</tr>
</tbody>
</table>

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

15.2. Chemical Safety Assessment

A Chemical Safety Assessment has been carried out

16. OTHER INFORMATION

Key literature references and sources for data
www.ChemADVISOR.com/

Prepared By: Edwin van Hagen
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Issuing Date: 28-Mar-2011
Revision Date: 26-Mar-2018

Revision Note
Reason for revision: Revision 15, March 2018
Updated Prepared By

Updates
The most current version of this Safety Data Sheet is available at this URL:

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End of Safety Data Sheet