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Revision Number 1

1. Identification

1.1. Product identifier

Product Code(s) 993

Product Name CALCIUM ALUMINATE CEMENT

Synonyms CA-14 M, CA-14 S, CA-14 W, CA-25 C, CA-25 M, CA-25 R, CA-270, CA-470 TI, CA-670, CA-680, CAC DISCHARGE, CARO WHITE

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

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

For further information, please contact

E-mail address info@almatis.com

1.4. Emergency telephone number

Emergency Telephone GB: +44 20 35147487
UK: 0 800 680 0425

Emergency Telephone - §45 - (EC)1272/2008

Europe |112

2. Hazard(s) identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

2.2. Label elements

Hazard statements

EUH210 - Safety data sheet available on request

2.3. Other hazards

May form combustible dust concentrations in air (during handling or processing).

3. Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	EC No	CAS No	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Aluminum oxide	215-691-6	1344-28-1	0-50	-	01-2119529248-35-002401-2119529248-35-012501-2119529248-35-008601-2119529248-35-0238

Full text of H- and EUH-phrases: see section 16**4. First-aid measures****4.1. Description of first aid measures**

Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.
Ingestion	Clean mouth with water and drink afterwards plenty of water.

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

Symptoms	Mild eye irritant. Mild skin irritant.
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4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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5. Fire-fighting measures**5.1. Extinguishing media**

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	Slight fire hazard. Avoid generation of dust. Fine dust dispersed in air may ignite.
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5.3. Advice for firefighters

Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
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6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid generation of dust. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Take precautionary measures against static discharges.
For emergency responders	Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information.
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6.3. Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so. Prevent dust cloud.
Methods for cleaning up	Take up with inert, damp, non-combustible material using clean non-sparking tools and place into loosely covered plastic containers for later disposal. Pick up and transfer to properly labeled containers.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections	Advices on safe handling: See Section 7 for more information. Personal protective equipment [PPE]: See section 8 for more information. Disposal: See section 13 for more information.
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7. Handling and storage

7.1. Precautions for safe handling

Advice on safe handling	Ensure adequate ventilation. Avoid generation of dust. Do not breathe dust. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).
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7.3. Specific end use(s)

Risk Management Methods (RMM)	The information required is contained in this Material Safety Data Sheet.
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8. Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	European Union	United Kingdom	France	Spain	Germany
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Aluminum oxide 1344-28-1	-	TWA: 10 mg/m ³ TWA: 4 mg/m ³	TWA: 10 mg/m ³	TWA: 10 mg/m ³	-
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Aluminum oxide 1344-28-1	-	TWA: 10 mg/m ³	-	-	TWA: 5 mg/m ³ TWA: 2 mg/m ³
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Aluminum oxide 1344-28-1	TWA: 5 mg/m ³ STEL 10 mg/m ³	TWA: 3 mg/m ³ STEL: 24 mg/m ³	TWA: 2.5 mg/m ³ TWA: 1.2 mg/m ³	TWA: 10 mg/m ³ STEL: 15 mg/m ³	TWA: 10 mg/m ³ TWA: 4 mg/m ³ STEL: 30 mg/m ³ STEL: 12 mg/m ³

Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Aluminum oxide 1344-28-1	-	60 µg/g creatinine - urine (Aluminum) - no restrictions	-	-	-

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). EN 166.

Hand protection Wear suitable gloves. EN 374.

Skin and body protection Wear fire/flamm resistant/retardant clothing. EN ISO 6529.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls Avoid release to the environment.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Appearance	White to off-white Powder
Color	White to off-white
Odor	None.
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	11.3 - 11.5	aqueous solution
Melting point / freezing point	1650 - 1820 °C	
Boiling point / boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive	No data available	

limits		
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	
Relative density	No data available	None known
Water solubility	insoluble	
Solubility(ies)	slightly soluble	
Partition coefficient	No data available	None known
Autoignition temperature	-	Does not ignite
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No information available	
Oxidizing properties	No information available	

9.2. Other information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	2.8-3.3 g/cm ³
Bulk density	750-1100 kg/m ³

10. Stability and reactivity**10.1. Reactivity**

Reactivity None under normal use conditions.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Contact with water generates heat.

Hazardous polymerization None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Avoid accumulation of airborne dust. Keep away from open flames, hot surfaces and sources of ignition.

10.5. Incompatible materials

Incompatible materials None known based on information supplied.

10.6. Hazardous decomposition products

Hazardous decomposition products None under normal processing.

11. Toxicological information**11.1. Information on toxicological effects**

Information on likely routes of exposure**Product Information**

Inhalation	May cause irritation.
Eye contact	Dust contact with the eyes can lead to mechanical irritation.
Skin contact	Causes mild skin irritation.
Ingestion	No known hazard by swallowing.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Numerical measures of toxicity

Unknown acute toxicity No information available.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum oxide	> 5000 mg/kg (Rat)		

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	No information available.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.

12. Ecological information**12.1. Toxicity**

Ecotoxicity Not considered to be harmful to aquatic life.

12.2. Persistence and degradability

Persistence and degradability Not readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulation Does not bioaccumulate.

12.4. Mobility in soil

Mobility in soil No information available.

Mobility No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

Chemical name	PBT and vPvB assessment
Aluminum oxide	The substance is not PBT / vPvB PBT assessment does not apply

12.6. Other adverse effects

Other adverse effects No information available.

13. Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

Waste codes / waste designations according to EWC / AVV According to the European Waste Catalog, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. 01 03 08.

14. Transport information

IMDG

14.1 UN number Not regulated
 14.2 UN proper shipping name Not regulated
 14.3 Transport hazard class(es) Not regulated
 14.4 Packing group Not regulated
 14.5 Marine pollutant Not applicable
 14.6 Special Provisions None
 14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code No information available

RID

14.1 UN number Not regulated
 14.2 UN proper shipping name Not regulated
 14.3 Transport hazard class(es) Not regulated
 14.4 Packing group Not regulated
 14.5 Environmental hazards Not applicable
 14.6 Special Provisions None

ADR

14.1 UN number Not regulated

14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special Provisions	None

<u>IATA</u>	Not regulated
14.1 UN number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special Provisions	None

15. Regulatory information

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

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009 Not applicable

International Inventories

TSCA	Complies
DSL/NDSL	Listed on DSL
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Does not comply
AICS	Complies

Legend:

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

15.2. Chemical safety assessment

Chemical Safety Report No information available

16. Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend

SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGl(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 Japan GHS Classification
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program
 Organization for Economic Co-operation and Development Screening Information Data Set
 RTECS (Registry of Toxic Effects of Chemical Substances)
 World Health Organization

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This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

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 guidance 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