SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Code(s) 387
Chemical name Calcined Alumina and Polishing Alumina
Synonyms A-Aluminas, CL-Aluminas, CT-Aluminas, CTC-Aluminas, E-SY 1000, Gilox, GMA, HVA, MPC, P-Aluminas, PSG, RAPOL, RG-Aluminas, Thermafill, Ultimate, WRA, Exception: CTC55 - see Material Safety Data Sheet 1000, Exception: CT3000 SDP - see Material Safety Data Sheet 1259
Molecular weight 101.96

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

Recommended use Adsorbents Filler Polishing agent Refractory Ceramic
Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Manufacturer 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 3E Global Incident Response Hotline (Almatis access code: 334735)
GB: +44 20 35147487
UK: 0 800 680 0425

Emergency Telephone - §45 - (EC)1272/2008
Not applicable

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

2.2. Label elements
This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]
Signal word
None

Hazard statements
This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

Precautionary Statements - EU (§28, 1272/2008)
P403 + P235 - Store in a well-ventilated place. Keep cool

2.3. Other hazards
No information available

SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>EC No</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
<th>REACH registration number</th>
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<tr>
<td>Aluminum oxide</td>
<td>215-691-6</td>
<td>1344-28-1</td>
<td>&gt;99</td>
<td>-</td>
<td>01-2119529248-35-XXXX</td>
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</table>

Full text of H- and EUH-phrases: see section 16

SECTION 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 doctor.

Skin contact Wash skin with soap and water. In the case of skin irritation or allergic reactions see a doctor.

Ingestion Clean mouth with water and drink afterwards plenty of water.

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

Symptoms Contact with dust can cause mechanical irritation or drying of the skin.

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

Note to doctors Treat symptomatically.

SECTION 5: Firefighting 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 No information available.
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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
Ensure adequate ventilation.

For emergency responders
Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions
See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for containment
Prevent dust cloud. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Pick up and transfer to properly labelled 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.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation. Avoid generation of dust.

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.

7.3. Specific end use(s)

Specific use(s)
Aluminum filter, Heat exchanger, Inert bed support, Refractory.

Identified Uses

Risk Management Methods (RMM)
The information required is contained in this Material Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits
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  No special protective equipment required.
Eye protection must conform to standard EN 166.

Hand protection  Wear suitable gloves.
Gloves must conform to standard EN 374.

Skin and body protection  No special protective equipment required.

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  No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Values</th>
<th>Remarks • Method</th>
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<tbody>
<tr>
<td>pH</td>
<td>-</td>
<td>Not applicable</td>
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<tr>
<td>Melting point / freezing point</td>
<td>2000 °C</td>
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<table>
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<tr>
<th>Property</th>
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<th>Spain</th>
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<td>TWA: 10 mg/m³</td>
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<table>
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<tr>
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<th>Finland</th>
<th>Denmark</th>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>TWA: 5 mg/m³</td>
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<td>TWA: 2 mg/m³</td>
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<table>
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<th>Switzerland</th>
<th>Poland</th>
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<th>Ireland</th>
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<td>TWA: 2.5 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
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<td>STEL 10 mg/m³</td>
<td>STEL: 24 mg/m³</td>
<td>STEL: 15 mg/m³</td>
<td>STEL: 30 mg/m³</td>
<td>STEL: 12 mg/m³</td>
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<td>TWA: 4 mg/m³</td>
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</tr>
<tr>
<td>1344-28-1</td>
<td>TWA: 1.5 mg/m³</td>
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<td></td>
</tr>
</tbody>
</table>

60 µg/g creatinine - urine (Aluminum) - no restrictions
Boiling point / boiling range  No data available  None known
Flash point  -  Not applicable
Evaporation rate  No data available  Not applicable
Flammability (solid, gas)  No data available  Not applicable
Flammability Limit in Air
   Upper flammability or explosive limits  -
   Lower flammability or explosive limits  -
Vapour pressure  No data available  None known
Vapour density  No data available  Not applicable
Relative density  No data available  Not applicable
Water solubility  Insoluble
Solubility(ies)  Insoluble
Partition coefficient  No data available  Not applicable
Autoignition temperature  No data available  None known
Hyphen  No data available  None known
Kinematic viscosity  No data available  Not applicable
Dynamic viscosity  No data available  Not applicable
Explosive properties  No information available
Oxidising properties  No information available

SECTION 10: Stability and reactivity

10.1. Reactivity
Reactivity  No information available.

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  None under normal processing.
Hazardous polymerisation  Hazardous polymerisation does not occur.

10.4. Conditions to avoid
Conditions to avoid  dust formation.

10.5. Incompatible materials
Incompatible materials  None known based on information supplied.

10.6. Hazardous decomposition products
Hazardous decomposition products  None known based on information supplied.
SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

Inhalation May cause irritation of respiratory tract.
Eye contact Dust contact with the eyes can lead to mechanical irritation.
Skin contact No known hazard in contact with skin.
Ingestion No known hazard by swallowing.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Numerical measures of toxicity

Product Information

Component Information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Oral LD50 (mg/kg)</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>&gt; 5000 (Rat)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Skin corrosion/irritation No information available.

Product Information

Serious eye damage/eye irritation No information available.

Product Information

Respiratory or skin sensitisation No information available.

Product Information

Germ cell mutagenicity No information available.

Product Information

Carcinogenicity No information available.

Product Information

Reproductive toxicity No information available.

Product Information

STOT - single exposure No information available.

Product Information

STOT - repeated exposure No information available.

Product Information

Other adverse effects No information available.
Aspiration hazard
No information available.

SECTION 12: Ecological information

12.1. Toxicity
Ecotoxicity
Not considered to be harmful to aquatic life.

Product Information

12.2. Persistence and degradability
Persistence and degradability
Not readily biodegradable.

12.3. Bioaccumulative potential
Bioaccumulation
MATERIAL 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
The product does not contain any substance(s) classified as PBT or vPvB.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>PBT and vPvB assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>The substance is not PBT / vPvB PBT assessment does not apply</td>
</tr>
</tbody>
</table>

12.6. Other adverse effects
Other adverse effects
No information available.

SECTION 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 Catalogue, 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.

SECTION 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

IATA
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

SECTION 15: Regulatory information

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

Water hazard class (WGK) non-hazardous to water (nwg)

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

Authorisations and/or restrictions on use:
This product does not contain substances subject to authorisation (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 Not Listed on NDSL
EINECS/ELINCS Complies
15.2. Chemical safety assessment

Chemical Safety Report

No information available

SECTION 16: Other information

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

Legend

SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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

Classification procedure

Classification according to Regulation (EC) No. 1272/2008 [CLP] Method Used
Acute oral toxicity Calculation method
Acute dermal toxicity Calculation method
Acute inhalation toxicity - gas Calculation method
Acute inhalation toxicity - Vapour Calculation method
Acute inhalation toxicity - dust/mist Calculation method
Skin corrosion/irritation Calculation method
Serious eye damage/eye irritation Calculation method
Respiratory sensitisation Calculation method
Skin sensitisation Calculation method
Mutagenicity Calculation method
Carcinogenicity Calculation method
Reproductive toxicity Calculation method
STOT - single exposure Calculation method
STOT - repeated exposure Calculation method
Acute aquatic toxicity Calculation method
Chronic aquatic toxicity Calculation method
Aspiration hazard Calculation method
Ozone Calculation method

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
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus database (NLM CIP)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation 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