1. Identification

1.1. Product identifier
Product Code(s) 1259
Product Name SPECIALTY ALUMINA

1.2. Relevant identified uses of the substance or mixture and uses advised against
Recommended use Refractory Technical ceramics
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
Non-Emergency Telephone Number +49 69 9573410

1.4. Emergency telephone number
Emergency Telephone +1 501-776-4677 3E Global Incident Response Hotline (Almatis access code: 334735)

2. Hazard(s) 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 [GHS]

2.2. Label elements
This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]

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

2.3. Other hazards
No information available

3. Composition/information on ingredients
3.1 Substances

Not applicable

3.2 Mixtures

<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>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>215-691-6</td>
<td>1344-28-1</td>
<td>&gt;90</td>
<td>-</td>
<td>01-2119529248-35-0024</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01-2119529248-35-0125</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>01-2119529248-35-0086</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>01-2119529248-35-0087</td>
</tr>
</tbody>
</table>

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.
Self-protection of the first aider Do not breathe dust.

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 physicians Treat symptomatically.

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 Avoid generation of dust. Fine dust dispersed in air may ignite.
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.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions

Ensure adequate ventilation. Avoid generation of dust. Avoid contact with eyes. Use personal protective equipment as required. Do not breathe dust.

Other information

Refer to protective measures listed in Sections 7 and 8.

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 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.

7. Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation. Avoid generation of dust. Do not breathe dust. Avoid contact with eyes.

General hygiene considerations

Do not breathe dust.

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)

No information available.

Risk Management Methods (RMM)

The information required is contained in this Material Safety Data Sheet.

8. Exposure controls/personal protection
8.1. Control parameters

Exposure Limits

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>European Union</th>
<th>United Kingdom</th>
<th>France</th>
<th>Spain</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>1344-28-1</td>
<td>-</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TWA: 4 mg/m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical name</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></td>
<td></td>
<td></td>
<td>TWA: 5 mg/m³</td>
</tr>
<tr>
<td>1344-28-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TWA: 2 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Austria</th>
<th>Switzerland</th>
<th>Poland</th>
<th>Norway</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1344-28-1</td>
<td>TWA: 5 mg/m³</td>
<td>TWA: 3 mg/m³</td>
<td>TWA: 2.5 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td>STEL: 10 mg/m³</td>
<td>STEL: 24 mg/m³</td>
<td>STEL: 15 mg/m³</td>
<td>STEL: 4 mg/m³</td>
<td>STEL: 30 mg/m³</td>
</tr>
</tbody>
</table>

Biological occupational exposure limits

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Austria</th>
<th>Switzerland</th>
<th>Poland</th>
<th>Norway</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1344-28-1</td>
<td>-</td>
<td>60 µg/g creatinine - urine (Aluminum) - no restrictions</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Derived No Effect Level (DNEL)  No information available.
Predicted No Effect Concentration (PNEC)  No information available.

8.2. Exposure controls

Engineering controls  Apply technical measures to comply with the occupational exposure limits. Showers. Eyewash stations. Ventilation systems.

Personal protective equipment

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

Skin and body protection  If there is a risk of contact:. Wear suitable protective clothing.

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  Do not breathe dust.

Environmental exposure controls  Avoid release to the environment. Avoid creating dust.

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>Solid Powder</td>
</tr>
<tr>
<td>Appearance</td>
<td>white Powder</td>
</tr>
<tr>
<td>Color</td>
<td>white</td>
</tr>
<tr>
<td>Odor</td>
<td>None.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
</tr>
</tbody>
</table>
### Property | Values | Remarks • Method
--- | --- | ---
pH | No data available | None known
Melting point / freezing point | No data available | None known
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 | No data available | None known
  - Upper flammability or explosive limits | No data available | None known
  - Lower flammability or explosive limits | No data available | None known
Sensitivity to mechanical impact | None | 
Sensitivity to static discharge | None | 
Vapor pressure | No data available | None known
Vapor density | No data available | None known
Relative density | No data available | None known
Water solubility | insoluble | None known
Solubility(ies) | insoluble | None known
Partition coefficient | No data available | None known
Autoignition temperature | No data available | None known
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 | 
Softening point | No information available | 
Molecular weight | No information available | 
VOC Content (%) | No information available | 
Liquid Density | 2.7-3.94 g/cm³ | 
Bulk density | 770-1250 kg/m³ | 

### 10. Stability and reactivity

#### 10.1. Reactivity

Reactivity
No information available.
Remarks
None under normal processing.

#### 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 polymerization
Hazardous polymerisation does not occur.

#### 10.4. Conditions to avoid

Conditions to avoid
Avoid dust formation.

#### 10.5. Incompatible materials

Incompatible materials
None known based on information supplied.
10.6. Hazardous decomposition products

Hazardous decomposition products: Carbon monoxide. Carbon dioxide (CO2).

11. Toxicological information

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

- **Inhalation**: Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
- **Eye contact**: Specific test data for the substance or mixture is not available. Dust contact with the eyes can lead to mechanical irritation.
- **Skin contact**: Specific test data for the substance or mixture is not available. May cause irritation.
- **Ingestion**: Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms: No information available.

Numerical measures of toxicity

Component Information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>&gt; 5000 mg/kg (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.
- **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  
Aquatic toxicity is unlikely due to low solubility. 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  

<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.

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.

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

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
Contact supplier for inventory compliance status
DSL/NDSL
Contact supplier for inventory compliance status
EINECS/ELINCS
Contact supplier for inventory compliance status
ENCS
Contact supplier for inventory compliance status
IECSC
Contact supplier for inventory compliance status
KECL
Contact supplier for inventory compliance status
PICCS
Contact supplier for inventory compliance status
AICS
Contact supplier for inventory compliance status

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) (AEGGL(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 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

Prepared By  Product Safety Department
Almatis B.V.
Theemsweg 30
3197 KM Botlek Rt
The Netherlands
+31-181-270124
info@almatis.com

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

Disclaimer
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materials or in any process, unless specified in the text.

End of Safety Data Sheet