1. Identification

Product identifier

Product Name
TABULAR ALUMINA

Other means of identification

Product Code(s)
154

Synonyms
None

Recommended use of the chemical and restrictions on use

Recommended use
Refractory. Aluminum filter. Heat exchanger. Inert bed support

Restrictions on use
No information available

Details of the supplier of the safety data sheet

Supplier Address
Almatis, Inc.
P.O. Box 300
4701 Alcoa Road
Bauxite, AR 72022
USA
Telephone: +1 501-776-4677

Manufacturer Address
Almatis B.V.
Theemsweg 30
NL-3197 KM Botlek Rt
The Netherlands
Phone: +31 181270129

Emergency telephone number

Emergency Telephone
US/Canada: +01 760 476 3962, +1 866 519 4752

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazard statements

Not classified
Not applicable

Precautionary Statements - Storage
Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal
Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Other information
Not applicable

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance</th>
<th>Common name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alumina.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Chemical name</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>Trade secret</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aluminum oxide</td>
<td>1344-28-1</td>
<td>&gt;99</td>
<td>*</td>
</tr>
</tbody>
</table>

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

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.

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

Most important symptoms and effects, both acute and delayed

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

Indication of any immediate medical attention and special treatment needed

Note to physicians
Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
No information available.

Specific hazards arising from the chemical
Avoid generation of dust.

Explosion data

- Sensitivity to mechanical impact: None.
- Sensitivity to static discharge: Yes.
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

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.

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

Pick up and transfer to properly labeled containers. Sweep up and shovel into suitable containers for disposal.

7. Handling and storage

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.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls/personal protection

Control parameters

Exposure Limits

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>TWA: 1 mg/m³ respirable particulate matter</td>
<td>TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable fraction (vacated) TWA: 10 mg/m³ total dust (vacated) TWA: 5 mg/m³ respirable fraction</td>
<td>-</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering controls

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

Individual protection measures, such as personal protective equipment

Eye/face protection

No special protective equipment required.

Hand protection

No special protective equipment required.

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.
9. Physical and chemical properties

### Information on basic physical and chemical properties

**Property** | **Value** | **Remarks** | **Method**
--- | --- | --- | ---
Physical state | Solid Powder |  |  |
Appearance | white Powder granules Balls |  |  |
Color | white |  |  |
Odor | None |  |  |
Odor threshold | No information available |  |  |

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks  • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>2053 °C / 3727.4 °F</td>
<td>None known</td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
<td>None known</td>
</tr>
</tbody>
</table>
  - Upper flammability or explosive limits | No data available |  |
  - Lower flammability or explosive limits | No data available |  |
| Vapor pressure | No data available | No information available |
| Vapor density | No data available | No information available |
| Relative density | No data available | None known |
| Water solubility | insoluble |  |
| Solubility in other solvents | No data available |  |
| Partition coefficient | No data available | None known |
| Autoignition temperature | No data available | Does not ignite |
| Hyphen | No data available | No information available |
| Kinematic viscosity | No data available | No information available |
| Dynamic viscosity | No data available | No information available |

### Stability and reactivity

**Reactivity** | No information available |
--- | ---
**Chemical stability** | Stable under normal conditions |
**Possibility of hazardous reactions** | None under normal processing |
**Hazardous polymerization** | None under normal processing |
**Conditions to avoid** | dust formation |
**Incompatible materials** | None known based on information supplied |
**Hazardous decomposition products** | None under normal processing |
11. Toxicological information

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  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

Oral LD50  > 5000 mg/kg (rat)

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>
<tr>
<td>1344-28-1</td>
<td></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.
Other adverse effects  No information available.
Interactive effects  No information available.

12. Ecological information

Ecotoxicity  Aquatic toxicity is unlikely due to low solubility. Not considered to be harmful to aquatic life.

Persistence and degradability  Not readily biodegradable.
Bioaccumulation  Does not bioaccumulate.

Mobility  No information available.

Other adverse effects  None.

13. Disposal considerations

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

DOT  Not regulated

MEX  Not regulated

ICAO (air)  Not regulated

IATA  Not regulated

IMDG  Not regulated

15. Regulatory information

International Inventories

TSCA  Complies.

DSL/NDSL  Complies.

EINECS/ELINCS  Complies.

ENCS  Complies.

IECSC  Complies.

KECL  Complies.

PICCS  Complies.

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
US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide - 1344-28-1</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard classifications.

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

US State Regulations

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide - 1344-28-1</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA
Health hazards 0 Flammability 0 Instability 0 Physical and chemical properties -
HMIS
Health hazards 0 Flammability 0 Physical hazards 0 Personal protection X

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

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

Issuing Date
17-Feb-2020

Revision Date
22-Nov-2019

Revision Note
No data available.

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