1. Identification

Product identifier

Product Name: SPECIALTY ALUMINA

Other means of identification

Product Code(s): 1259

Synonyms: CT3000 SDP, CT3000LS SDP

Recommended use of the chemical and restrictions on use

Recommended use: Refractory. Technical ceramics

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

Emergency telephone number

Emergency Telephone: 3E Global Incident Response Hotline (Almatis access code: 334735)
US: +1 760 476 3960

2. Hazard(s) identification

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Combustible dust: Category 1

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Warning

Hazard statements

May form combustible dust concentrations in air

Precautionary Statements - Prevention
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Use explosion-proof electrical/ ventilating / lighting / equipment

None needed according to classification criteria.

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

Unknown acute toxicity
10 % of the mixture consists of ingredient(s) of unknown toxicity

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance</th>
<th>Not applicable.</th>
</tr>
</thead>
</table>

Mixture

Synonyms
CT3000 SDP, CT3000LS SDP.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>Trade secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>1344-28-1</td>
<td>&gt;=90</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
No information available.

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. Fine dust dispersed in air may ignite.

Hazardous combustion products

Carbon monoxide. Carbon dioxide (CO2).

Explosion data

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

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. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Take precautionary measures against static discharges.

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.

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. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges.

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</td>
<td>TWA: 15 mg/m³ total dust</td>
<td>-</td>
</tr>
<tr>
<td>1344-28-1</td>
<td>particulate matter</td>
<td>TWA: 5 mg/m³ respirable</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>fraction (vacated)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 10 mg/m³ total dust</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(vacated)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 5 mg/m³ respirable</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>fraction</td>
<td></td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering controls

Showers
Individual protection measures, such as personal protective equipment

Eye/face protection
No special protective equipment required.

Hand protection
Wear suitable gloves.

Skin and body protection
Wear suitable protective clothing. Wear fire/flame resistant/retardant 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
Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid Powder</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>white Powder</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>white</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
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<td>None known</td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>No data available</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>None known</td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability or explosive limits</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Lower flammability or explosive limits</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Relative density</td>
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<td>None known</td>
</tr>
<tr>
<td>Water solubility</td>
<td>insoluble</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No data available</td>
<td></td>
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<tr>
<td>Partition coefficient</td>
<td>No data available</td>
<td>None known</td>
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<tr>
<td>Autoignition temperature</td>
<td></td>
<td>Does not ignite</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>No data available</td>
<td>None known</td>
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<tr>
<td>Other information</td>
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<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Softening point</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>VOC Content (%)</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Liquid Density</td>
<td>2.7-3.94 g/cm³</td>
<td></td>
</tr>
<tr>
<td>Bulk density</td>
<td>770-1250 kg/m³</td>
<td></td>
</tr>
</tbody>
</table>

10. Stability and reactivity

Reactivity
No information available.
Chemical stability  Stable under normal conditions.
Possibility of hazardous reactions  None under normal processing.
Hazardous polymerization  Hazardous polymerisation does not occur.
Conditions to avoid  Excessive heat. Heating in air. Avoid accumulation of airborne dust.
Incompatible materials  None known based on information supplied.
Hazardous decomposition products  Carbon monoxide. Carbon dioxide (CO2).

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

No information available

Unknown acute toxicity  10 % of the mixture consists of ingredient(s) of unknown 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>
<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.
Target organ effects  Respiratory system, Eyes, Skin.
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 No information available.

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
TDG Not regulated
MEX Not regulated
ICAO (air) Not regulated
IATA Not regulated
IMDG Not regulated
RID Not regulated
ADR Not regulated
ADN Not regulated

15. Regulatory information
International Inventories

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA</td>
<td>Contact supplier for inventory compliance status.</td>
</tr>
<tr>
<td>DSL/NDSL</td>
<td>Contact supplier for inventory compliance status.</td>
</tr>
<tr>
<td>EINECS/ELINCS</td>
<td>Contact supplier for inventory compliance status.</td>
</tr>
<tr>
<td>ENCS</td>
<td>Contact supplier for inventory compliance status.</td>
</tr>
<tr>
<td>IECSC</td>
<td>Contact supplier for inventory compliance status.</td>
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<tr>
<td>KECL</td>
<td>Contact supplier for inventory compliance status.</td>
</tr>
<tr>
<td>PICCS</td>
<td>Contact supplier for inventory compliance status.</td>
</tr>
<tr>
<td>AICS</td>
<td>Contact supplier for inventory compliance status.</td>
</tr>
</tbody>
</table>

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</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>1344-28-1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

U.S. EPA Label Information
16. Other information

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>-</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Physical hazards</th>
<th>Personal protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>X</td>
</tr>
</tbody>
</table>

NFPA Hazard Star Legend
- Not applicable

HMIS Chronic Hazard Star Legend
- Not applicable

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

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION
TWA (time-weighted average) STEL (Short Term Exposure Limit)
Ceiling Maximum limit value

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 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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info@almatis.com.

Issuing Date
20-Dec-2019

Revision date
10-Jul-2019

Revision Note

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