1. Identification

Product identifier

**Product Name**
DISPERSING ALUMINA ADS and ADW

**Other means of identification**

**Product Code(s)**
974

**Synonyms**
None

Recommended use of the chemical and restrictions on use

**Recommended use**
Refractory

**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**
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)

<table>
<thead>
<tr>
<th>Hazard Type</th>
<th>Category/Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reproductive toxicity</td>
<td>Category 1B</td>
</tr>
<tr>
<td>Combustible dust</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Hazards not otherwise classified (HNOC)**

May form combustible dust concentrations in air

**Label elements**

Danger

**Hazard statements**

May damage fertility or the unborn child
May form combustible dust concentrations in air
Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Other information
Not applicable

3. Composition/information on ingredients

Substance
Not applicable.

Mixture

Synonyms
ADS Series. ADW Series.

<table>
<thead>
<tr>
<th>Substance/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>87-97</td>
<td>*</td>
</tr>
<tr>
<td>Proprietary inorganic and organic modifier</td>
<td>-</td>
<td>10-20</td>
<td>*</td>
</tr>
<tr>
<td>Boric acid</td>
<td>10043-35-3</td>
<td>0-5</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

General advice
Show this safety data sheet to the doctor in attendance.
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. May damage fertility or the unborn child.

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
Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical
Avoid generation of dust. Fine dust dispersed in air may ignite.

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

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
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
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.
Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).

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>
<tr>
<td>Boric acid</td>
<td>STEL: 6 mg/m³ inhalable particulate matter TWA: 2 mg/m³ inhalable particulate matter</td>
<td>-</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

Wear safety glasses with side shields (or goggles).

Hand protection

Wear suitable gloves.

Skin and body protection

If there is a risk of contact: 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

Do not breathe dust. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Solid Powder</th>
</tr>
</thead>
<tbody>
<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>

<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>Not applicable</td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>No data available</td>
<td>None known</td>
</tr>
</tbody>
</table>
Boiling point / boiling range: No data available
Flash point: No data available
Evaporation rate: No data available
Flammability (solid, gas): No data available
Flammability Limit in Air
- Upper flammability or explosive limits: No data available
- Lower flammability or explosive limits: No data available
Vapor pressure: No data available
Vapor density: No data available
Relative density: No data available
Water solubility: Partly soluble
Solubility in other solvents: No data available
Partition coefficient: No data available
Autoignition temperature: -
Hyphen: None known
Kinematic viscosity: No data available
Dynamic viscosity: No data available

Other information
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: 3.9 g/cm³
Bulk density: 900-1000 kg/m³

10. Stability and reactivity

Reactivity: No information available.
Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions: None under normal processing.
Conditions to avoid: Excessive heat. Heating in air. Dust formation.
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: May damage fertility or the unborn child.
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>
<tr>
<td>1344-28-1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boric acid</td>
<td>= 2660 mg/kg (Rat)</td>
<td>&gt; 2000 mg/kg (Rabbit)</td>
<td>&gt; 0.16 mg/L (Rat) 4 h</td>
</tr>
<tr>
<td>10043-35-3</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.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boric acid</td>
<td>-</td>
<td>Group 2A</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>10043-35-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend

IARC (International Agency for Research on Cancer)
Group 2A - Probably Carcinogenic to Humans
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Reproductive toxicity
Classification based on data available for ingredients. May damage fertility or the unborn child.

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.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Toxicity to microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boric acid</td>
<td>-</td>
<td>LC50: =1020mg/L (72h, Carassius auratus)</td>
<td>-</td>
<td>EC50: 115 - 153mg/L (48h, Daphnia magna)</td>
</tr>
<tr>
<td>10043-35-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Persistence and degradability
Product is not biodegradable.

Bioaccumulation
Does not bioaccumulate.
Component Information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boric acid</td>
<td>-0.757</td>
</tr>
<tr>
<td>10043-35-3</td>
<td></td>
</tr>
</tbody>
</table>

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.

California Hazardous Waste Status
This product contains one or more substances that are listed with the State of California as a hazardous waste.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>California Hazardous Waste Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boric acid</td>
<td>Toxic</td>
</tr>
<tr>
<td>10043-35-3</td>
<td></td>
</tr>
</tbody>
</table>

14. Transport information

DOT
Not regulated

ICAO (air)
Not regulated

IATA
Not regulated

IMDG
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>
</tr>
<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
**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></td>
<td>X</td>
</tr>
<tr>
<td>Boric acid - 10043-35-3</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable

**16. Other information**

**NFPA**
Health hazards 0  Flammability 1  Instability 0  Physical and chemical properties -

**HMIS**
Health hazards 0 *  Flammability 1  Physical hazards 0  Personal protection X

Chronic Hazard Star Legend  * = Chronic Health Hazard

**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)
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

Prepared By  Product Safety Department
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              info@almatis.com.

Issuing Date  18-Feb-2020
Revision date  10-Jul-2019
Revision Note  No information 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