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Revision Number 1

## 1. Identification

### Product identifier

### Other means of identification

Product Code(s) 1036

Synonyms M-ADS Series, M-ADW Series

### Recommended use of the chemical and restrictions on use

Recommended use Refractory, Construction material

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)

Reproductive toxicity	Category 1B
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### Hazards not otherwise classified (HNOC)

No information available

### Label elements

Danger

### Hazard statements

May damage fertility or the unborn child



**Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required

**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** M-ADS Series, M-ADW Series.

Chemical name	CAS No	Weight-%	Trade secret
Aluminum oxide	1344-28-1	80-90	*
Boric acid	10043-35-3	1-5	*

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

**4. First-aid measures****Description of first aid measures**

<b>General advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<b>Inhalation</b>	If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. Do not breathe dust. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
<b>Skin contact</b>	Wash off immediately with plenty of water for at least 15 minutes. If symptoms persist, call a physician.
<b>Ingestion</b>	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
<b>Self-protection of the first aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to

protect themselves and prevent spread of contamination. Do not breathe dust. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Use personal protective equipment as required. See section 8 for more information.

#### **Most important symptoms and effects, both acute and delayed**

**Symptoms** Coughing and/ or wheezing. Difficulty in breathing.

#### **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** 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** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Avoid generation of dust. Do not breathe dust. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Other information** Refer to protective measures listed in Sections 7 and 8.

#### **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 labeled containers.

### **7. Handling and storage**

#### **Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not breathe dust. Avoid generation of dust. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. 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.

## 8. Exposure controls/personal protection

### Control parameters

#### Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Aluminum oxide 1344-28-1	TWA: 1 mg/m <sup>3</sup> respirable particulate matter	TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 10 mg/m <sup>3</sup> total dust (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction	-
Boric acid 10043-35-3	STEL: 6 mg/m <sup>3</sup> inhalable particulate matter TWA: 2 mg/m <sup>3</sup> inhalable particulate matter	-	-

**Other information** Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

### Appropriate engineering controls

**Engineering controls** Showers  
Eyewash stations  
Ventilation systems.

### 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. Long sleeved clothing.

**Respiratory protection** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

**General hygiene considerations** Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not breathe dust. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

**Physical state** Powder  
**Appearance** white Powder  
**Color** white  
**Odor** None  
**Odor threshold** No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known

<b>Flash point</b>	-	Not applicable
<b>Evaporation rate</b>	No data available	None known
<b>Flammability (solid, gas)</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability or explosive limits</b>	No data available	
<b>Lower flammability or explosive limits</b>	No data available	
<b>Vapor pressure</b>	No data available	None known
<b>Vapor density</b>	No data available	None known
<b>Relative density</b>	No data available	None known
<b>Water solubility</b>	slightly soluble	
<b>Solubility in other solvents</b>	No data available	
<b>Partition coefficient</b>	No data available	None known
<b>Autoignition temperature</b>	-	Does not ignite
<b>Hyphen</b>	No data available	None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known
<b><u>Other information</u></b>		
<b>Explosive properties</b>	No information available	
<b>Oxidizing properties</b>	No information available	
<b>Softening point</b>	No information available	
<b>Molecular weight</b>	No information available	
<b>VOC Content (%)</b>	No information available	
<b>Liquid Density</b>	3.9 g/cm <sup>3</sup>	
<b>Bulk density</b>	900-1000 kg/m <sup>3</sup>	

## 10. Stability and reactivity

<b>Reactivity</b>	No information available.
<b>Chemical stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	None under normal processing.
<b>Conditions to avoid</b>	Avoid accumulation of airborne dust.
<b>Incompatible materials</b>	None known based on information supplied.
<b>Hazardous decomposition products</b>	Carbon monoxide. Carbon dioxide (CO <sub>2</sub> ).

## 11. Toxicological information

### Information on likely routes of exposure

#### Product Information

<b>Inhalation</b>	May cause irritation of respiratory tract.
<b>Eye contact</b>	Dust contact with the eyes can lead to mechanical irritation.
<b>Skin contact</b>	Causes mild skin irritation.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available.

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Symptoms</b>	Coughing and/ or wheezing. Difficulty in breathing.
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**Numerical measures of toxicity**

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 5,316.00 mg/kg  
 ATEmix (dermal) 1,201.20 mg/kg  
 ATEmix (inhalation-dust/mist) 0.10 mg/l

Product Information

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum oxide 1344-28-1	> 5000 mg/kg ( Rat )	-	-
Boric acid 10043-35-3	= 2660 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	> 0.16 mg/L ( Rat ) 4 h

**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 sensitization** No information available.

Product Information

**Germ cell mutagenicity** No information available.

Product Information

**Carcinogenicity** No information available.

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

Chemical name	ACGIH	IARC	NTP	OSHA
Boric acid 10043-35-3	-	Group 2A	-	X

**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** May cause harm to the unborn child.

Product Information

**STOT - single exposure** No information available.

Product Information

**STOT - repeated exposure** No information available.

Product Information

**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** Not considered to be harmful to aquatic life.

Product Information				
Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Boric acid 10043-35-3	-	-	-	EC50: 115 - 153mg/L (48h, Daphnia magna)

**Persistence and degradability** Product is not biodegradable.

**Bioaccumulation** MATERIAL DOES NOT BIOACCUMULATE.

**Component Information**

Chemical name	Partition coefficient
Boric acid 10043-35-3	-0.757

**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.

**US EPA Waste Number** D002.

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

Chemical name	California Hazardous Waste Status
Boric acid 10043-35-3	Toxic

**14. Transport information**

**DOT** Not regulated

**TDG** Not regulated

**MEX** Not regulated

**ICAO (air)** Not regulated

**IATA** Not regulated

<b>IMDG</b>	Not regulated
<b>RID</b>	Not regulated
<b>ADR</b>	Not regulated
<b>ADN</b>	Not regulated

## 15. Regulatory information

### International Inventories

<b>TSCA</b>	Does not comply.
<b>DSL/NDL</b>	Does not comply.
<b>EINECS/ELINCS</b>	Does not comply.
<b>ENCS</b>	Complies.
<b>IECSC</b>	Complies.
<b>KECL</b>	Complies.
<b>PICCS</b>	Complies.
<b>AICS</b>	Complies.

### Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - 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.

Chemical name	SARA 313 - Threshold Values %
Aluminum oxide - 1344-28-1	1.0

#### **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**

Chemical name	New Jersey	Massachusetts	Pennsylvania
Aluminum oxide 1344-28-1	X	X	X
Boric acid 10043-35-3	X	-	-

**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable

**16. Other information**

<b>NFPA</b>	Health hazards 2	Flammability 0	Instability 0	Physical and chemical properties -
<b>HMIS</b>	Health hazards 4 *	Flammability 0	Physical hazards 0	Personal protection X
<i>Chronic Hazard Star Legend</i>	<i>* = Chronic Health Hazard</i>			

**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 Environment, Health, and Safety Publications  
 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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**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**