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Revision Number 1

## 1. Identification

### 1.1. Product identifier

**Product Code(s)** 1036  
**Product Name** DISPERSING ALUMINA M-ADS and M-ADW  
**Synonyms** M-ADS Series, M-ADW Series

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Recommended use** Refractory; Construction material  
**Uses advised against** No information available

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

Almatis GmbH  
Lyoner Str. 9  
60528 Frankfurt  
Germany  
+ 49 69 9573410

For further information, please contact

**E-mail address** info@almatis.com

### 1.4. Emergency telephone number

Emergency Telephone GB: +44 20 35147487  
UK: 0 800 680 0425

<b>Emergency Telephone - §45 - (EC)1272/2008</b>	
<b>Europe</b>	112

## 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]  
EUH210 - Safety data sheet available on request

### 2.3. Other hazards

May form combustible dust concentrations in air (during handling or processing).

### 3. Composition/information on ingredients

#### 3.1 Substances

Not applicable

#### 3.2 Mixtures

Chemical name	EC No	CAS No	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Aluminum oxide	215-691-6	1344-28-1	87	-	01-2119529248-35-002401-2119529248-35-012501-2119529248-35-008601-2119529248-35-0238
Boric acid	233-139-2	10043-35-3	1-5	Repr. 1B (H360FD)	No data available

#### Full text of H- and EUH-phrases: see section 16

This product contains one or more candidate substance(s) of very high concern (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Chemical name	CAS No	SVHC candidates
Boric acid	10043-35-3	X

### 4. First-aid measures

#### 4.1. Description of first aid measures

<b>Inhalation</b>	Remove to fresh air.
<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 skin with soap and water. In the case of skin irritation or allergic reactions see a physician.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water.

#### 4.2. Most important symptoms and effects, both acute and delayed

<b>Symptoms</b>	Mild eye irritant. Mild skin irritant.
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#### 4.3. Indication of any immediate medical attention and special treatment needed

<b>Note to physicians</b>	Treat symptomatically.
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### 5. Fire-fighting measures

#### 5.1. Extinguishing media

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Unsuitable extinguishing media</b>	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. 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.

**For emergency responders** Use personal protection recommended in Section 8.

### 6.2. Environmental precautions

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

### 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. Do not breathe dust. Avoid generation of dust. Do not eat, drink or smoke when using this product. 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.

**General hygiene considerations** Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Protect from moisture.

### 7.3. Specific end use(s)

**Specific use(s)**

Refractory; Construction material.

**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**

Chemical name	European Union	United Kingdom	France	Spain	Germany
Aluminum oxide 1344-28-1	-	TWA: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>	-
Boric acid 10043-35-3	-	-	-	TWA: 2 mg/m <sup>3</sup> STEL: 6 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Aluminum oxide 1344-28-1	-	TWA: 10 mg/m <sup>3</sup>	-	-	TWA: 5 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup>
Boric acid 10043-35-3	-	TWA: 2 mg/m <sup>3</sup> STEL: 6 mg/m <sup>3</sup>	-	-	-
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Aluminum oxide 1344-28-1	TWA: 5 mg/m <sup>3</sup> STEL 10 mg/m <sup>3</sup>	TWA: 3 mg/m <sup>3</sup> STEL: 24 mg/m <sup>3</sup>	TWA: 2.5 mg/m <sup>3</sup> TWA: 1.2 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> STEL: 15 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup> STEL: 30 mg/m <sup>3</sup> STEL: 12 mg/m <sup>3</sup>
Boric acid 10043-35-3	-	TWA: 1.8 mg/m <sup>3</sup> STEL: 1.8 mg/m <sup>3</sup>	-	-	TWA: 2 mg/m <sup>3</sup> STEL: 6 mg/m <sup>3</sup>

**Biological occupational exposure limits**

Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Aluminum oxide 1344-28-1	-	60 µg/g creatinine - urine (Aluminum) - no restrictions	-	-	-

**Derived No Effect Level (DNEL)** No information available.**Predicted No Effect Concentration (PNEC)** No information available.**8.2. Exposure controls****Personal protective equipment****Eye/face protection** Wear safety glasses with side shields (or goggles). EN 166.**Hand protection** Wear suitable gloves. EN 374.**Skin and body protection** Wear fire/flamm resistant/retardant clothing. EN 6529.**Respiratory protection** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.**General hygiene considerations** Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls** No information available.

## 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Physical state</b>	Powder
<b>Appearance</b>	white Powder
<b>Color</b>	white
<b>Odor</b>	None.
<b>Odor threshold</b>	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
Flash point	-	Not applicable
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	slightly soluble	No data available
Solubility(ies)	Partly soluble	
Partition coefficient	No data available	None known
Autoignition temperature	-	Does not ignite
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	

### 9.2. Other information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	3.9 g/cm <sup>3</sup>
Bulk density	900-1000 kg/m <sup>3</sup>

## 10. Stability and reactivity

### 10.1. Reactivity

**Reactivity** None under normal use conditions.

### 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.

**10.4. Conditions to avoid**

**Conditions to avoid** Avoid accumulation of airborne dust. Keep away from open flames, hot surfaces and sources of ignition.

**10.5. Incompatible materials**

**Incompatible materials** None known based on information supplied.

**10.6. Hazardous decomposition products**

**Hazardous decomposition products** Carbon monoxide. Carbon dioxide (CO<sub>2</sub>).

**11. Toxicological information****11.1. Information on toxicological effects****Information on likely routes of exposure****Product Information**

**Inhalation** May cause irritation.

**Eye contact** Dust contact with the eyes can lead to mechanical irritation.

**Skin contact** Causes mild skin irritation.

**Ingestion** No known hazard by swallowing.

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

**Symptoms** No information available.

**Numerical measures of toxicity****Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum oxide	> 5000 mg/kg ( Rat )		
Boric acid	= 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.

**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.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Chemical name	European Union
Boric acid	Repr. 1B

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

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

**Aspiration hazard** No information available.

## 12. Ecological information

### 12.1. Toxicity

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

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Boric acid	-	LC50: =1020mg/L (72h, Carassius auratus)	-	EC50: 115 - 153mg/L (48h, Daphnia magna)

### 12.2. Persistence and degradability

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

### 12.3. Bioaccumulative potential

**Bioaccumulation** Does not bioaccumulate.

### Component Information

Chemical name	Partition coefficient
Boric acid	-0.757

### 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** .

Chemical name	PBT and vPvB assessment
Aluminum oxide	The substance is not PBT / vPvB PBT assessment does not apply
Boric acid	The substance is not PBT / vPvB PBT assessment does not apply

### 12.6. Other adverse effects

**Other adverse effects** No information available.

## 13. Disposal considerations

**13.1. Waste treatment methods**

<b>Waste from residues/unused products</b>	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
<b>Contaminated packaging</b>	Do not reuse empty containers.
<b>Waste codes / waste designations according to EWC / AVV</b>	According to the European Waste Catalog, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. 01 03 08.

**14. Transport information****IMDG**

<b>14.1 UN number</b>	Not regulated
<b>14.2 UN proper shipping name</b>	Not regulated
<b>14.3 Transport hazard class(es)</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated
<b>14.5 Marine pollutant</b>	Not applicable
<b>14.6 Special Provisions</b>	None
<b>14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code</b>	No information available

**RID**

<b>14.1 UN number</b>	Not regulated
<b>14.2 UN proper shipping name</b>	Not regulated
<b>14.3 Transport hazard class(es)</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special Provisions</b>	None

**ADR**

<b>14.1 UN number</b>	Not regulated
<b>14.2 UN proper shipping name</b>	Not regulated
<b>14.3 Transport hazard class(es)</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special Provisions</b>	None

**IATA**

<b>14.1 UN number</b>	Not regulated
<b>14.2 UN proper shipping name</b>	Not regulated
<b>14.3 Transport hazard class(es)</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special Provisions</b>	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 contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorization per REACH Annex XIV
Boric acid - 10043-35-3	30.	

**Persistent Organic Pollutants**

Not applicable

**Dangerous substance category per Seveso Directive (2012/18/EU)**

H2 - ACUTE TOXIC

**Ozone-depleting substances (ODS) regulation (EC) 1005/2009** Not applicable

**International Inventories**

<b>TSCA</b>	Does not comply
<b>DSL/NDSL</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/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) (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

**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**

**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**