



ADVANCED MATERIALS

SAFETY DATA SHEET

SB-632

MoEL's Public Notice No. 2016-19 Standards for Classification and Labeling of Chemical Substances and Safety Data Sheet (SDS)

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Section 1: PRODUCT AND COMPANY IDENTIFICATION

A. Product name SB-632

Pure substance/mixture Substance

Aluminum Hydroxide

CAS Number 21645-51-2

Weight-% 100

B. Recommended use and Limitations on use

Recommended Use Flame retardant

Uses advised against None known

C. Supplier information

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Section 2: HAZARDS IDENTIFICATION

A. Hazard category/Classification

Physical Hazards Not classified

Health Hazards Not classified

Environmental Hazards Not classified

B. Warning label items including precautionary statement

Label Elements

Symbols/Pictograms None

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Signal Words None**Hazard Statements** None**Precautionary statement**
Prevention

Employ good industrial hygiene practice
Do not handle until all safety precautions have been read and understood
Do not breathe dust
Wear protective gloves/protective clothing/eye protection/face protection

Response IF ON SKIN: Wash with plenty of soap and water**Storage** Store away from incompatible materials**Disposal** Dispose of contents/containers in accordance with local regulations**Additional Information:** None.**C. Other hazards not included in the hazard category criteria (e.g. dust explosion hazard)**
None known**Section 3: COMPOSITION/INFORMATION ON INGREDIENTS****Pure substance/mixture** Substance

Chemical Name	CAS Number	S. Korea (KECL)	Korean GHS Classification	Weight-%
Aluminum Hydroxide	21645-51-2	KE-00980	Not classified	100

Section 4: FIRST AID MEASURES**A. In case of eye contact** Rinse with water. Get medical attention if irritation develops and persists.**B. In case of skin contact** Wash off with soap and water. Get medical attention if irritation develops and persists.**C. In case of inhalation** Move to fresh air. Call a physician if symptoms develop or persist.**D. In case of swallowing** Rinse mouth. Get medical attention if symptoms occur.**E. Note to physician** Treat symptomatically.**Section 5: FIRE FIGHTING MEASURES****A. Suitable (and unsuitable) extinguishing media**

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Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media None known

B. Specific hazards arising from the chemical (example: hazardous combustion products)

Explosion hazard: None known

C. Specific methods of fire-fighting

Self-contained breathing apparatus and full protective clothing must be worn in case of fire. In the event of fire and/or explosion do not breathe fumes. Move container from fire area if it can be done without risk.

Section 6: SPILLAGE, ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency measures Ensure adequate ventilation. Avoid dust formation. See section 8 for more information.

B. Environmental precautions Not considered to be harmful to aquatic life. Avoid discharge into drains, water courses or onto the ground.

C. Methods and materials for containment and cleaning up Vacuum or sweep material and place in a disposal container.

Section 7: HANDLING AND STORAGE**A. Precautions for safe handling**

In case of exposure to environments exceeding the occupational exposure limit, wear a respirator in compliance with national legislation.

B. Conditions for safe storage (including any incompatibilities)

Keep container tightly closed in a dry and well-ventilated place

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**A. Exposure limit values, biological limit values, etc****Aluminum Hydroxide**

ACGIH
OSHA

TLV/TWA 8-hr: 1 mg/m³ (respirable fraction)
TWA: 15 mg/m³ Total Dust
5 mg/m³ Respirable Dust

B. Engineering Controls**Engineering Measures**

Ensure adequate ventilation, especially in confined areas
Provide a good standard of controlled ventilation (10 to 15 air changes per hour)

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C. Personal protective equipment

- **Eye protection** If contact is likely, safety glasses with side shields are recommended.
- **Hand protection** For prolonged or repeated skin contact use suitable protective gloves.
- **Body protection** Wear suitable protective clothing.

Hygiene Measures

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid Powder
Odor	Odorless
Odor Threshold	No information available
pH:	8.4 - 10.2 5% Water suspension
Melting point / Freezing point	ca 300 °C / 572 °F (101.3 kPa)
Initial boiling point	5396 °F (2980 °C) 101.3 kPa
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability (solid, gas)	Not applicable
Upper flammability limit:	No data available
Lower flammability limit:	No data available
Vapor Pressure	Not applicable
Vapor Density	Not applicable
Relative Density	2.4 g/cm ³ , 20° C
Water Solubility	Insoluble
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition Temperature	Not applicable
Decomposition Temperature	392 °F (200 °C)
Viscosity	Not applicable
Kinematic viscosity	No data available.
Explosive Properties	None
Oxidizing Properties	Not applicable
VOC Content (%)	Not applicable

Section 10: STABILITY AND REACTIVITY**A. Stability and hazardous reaction potential**

Stability Stable under normal conditions

Hazardous reaction None known

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potential

B. Conditions to avoid (e.g. static discharge, shock or Vibration, etc) Avoid creating dust. Incompatible materials.

C. Incompatible materials Strong oxidizing agents

D. Hazardous decomposition products No hazardous decomposition products are known.

Section 11: TOXICOLOGICAL INFORMATION

A. Information on likely routes of exposure

- **Mouth** Not an expected route of exposure
- **Eyes** Dust contact with the eyes can lead to mechanical irritation
- **Skin** Prolonged skin contact may cause temporary irritation.

B. Information on health hazards

Aluminum Hydroxide

Oral LD50 > 2000 mg/kg Rat
Inhalation LC50 Rat > 2.3 mg/l (Al₂O₃) Aerosol Maximum attainable concentration

Aluminum Hydroxide

IARC Not Listed

Acute Toxicity Based on available data, the classification criteria are not met

Chronic Toxicity Based on available data, the classification criteria are not met.

Chronic Effects Based on available data, the classification criteria are not met.

Respiratory Sensitization No information available

Serious eye damage/eye irritation Non-irritant Rabbit

Skin Corrosion/Irritation Non-irritant Rabbit

Skin Sensitization Based on available data, the classification criteria are not met Not a skin sensitizer
Guinea pig

Mutagenicity in vitro Not genotoxic in bacteria and mammalian cell systems.
in vivo Mutagenicity (micronucleus test) Rat Negative (weight of evidence approach)

Germ cell mutagenicity No information available.

Reproductive Effects Based on available data, the classification criteria are not met.

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Reproductive Toxicity Based on available data, the classification criteria are not met.

Carcinogenicity Based on available data, the classification criteria are not met.

Specific target organ toxicity - Single exposure Not classified.

Specific target organ toxicity - Repeated exposure No information available.

Mixture versus substance information No information available.

Section 12: ECOLOGICAL INFORMATION

A. Ecotoxicity

Hazardous to the aquatic environment, acute hazard Not classified
Avoid runoff to waterways and sewers

Hazardous to the aquatic environment, long-term hazard Not classified
Avoid runoff to waterways and sewers

B. Persistence/degradability No data available

C. Bioaccumulative potential No data available

D. Mobility in soil No data available

E. Other adverse effects No data available

Section 13: DISPOSAL CONSIDERATIONS

A. Method of disposal

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable regulations.

B. Disposal considerations (including disposal of contaminated containers or packaging) Disposal should be in accordance with applicable regional, national and local laws and regulations

Section 14: TRANSPORT INFORMATION

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Mode of Transportation (Road, Water, Air, Rail)

ADR	Not regulated
RID	Not regulated
ADN	Not regulated
IATA	Not regulated
IMDG/IMO	Not regulated
ICAO	Not regulated

- 14.1. UN number None
- 14.2. UN proper shipping name None
- 14.3. Transport hazard class(es) None
- 14.4. Packing group None
- 14.5. Environmental hazards No
- 14.6. Special precautions for user Not applicable

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

A. Method of disposal

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable regulations.

B. Disposal considerations (including disposal of contaminated containers or packaging) Disposal should be in accordance with applicable regional, national and local laws and regulations

Section 15: REGULATORY INFORMATION

National Regulations**Aluminum Hydroxide**

CAS Number	21645-51-2
Weight-%	100
Korean GHS Classification	Not classified

Other domestic and foreign regulations**Global Inventories**

Chemical Name	CAS Number	EC No	EU REACH	Australia (AIC)	Canada (DSL)	China (IECSC)	Japan	S. Korea (KECL)	Mexico	New Zealand	Philippines (PICCS)	Taiwan	TSCA: United
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			registrati on number										States
Aluminum Hydroxide	21645-51-2	244-492-7	01-211952 9246-39	Y	Y	Y	(1)-17 (ENCS); ISHL	KE-00980	Y	Y	Y	Y	A

Legend

X / Y: Complies ; A: Active ; - / N: Exempt / Not Listed

Section 16: OTHER INFORMATION

A. Source of Information

Abbreviations and acronyms

IARC (International Agency for Research on Cancer)
 IATA (International Air Transport Association)
 IMDG (International Maritime Dangerous Goods)
 IUCLID (International Uniform Chemical Information Database)
 WHMIS (Workplace Hazardous Materials Information System)
 DOT (Department of Transportation)
 OSHA (Occupational Safety and Health Administration of the US Department of Labor)
 TWA (Time-Weighted Average)
 CLP (The Classification, Labeling and Packaging of Substances and Mixtures Regulation (EC 1272/2008))
 PPE (Personal Protection Equipment)
 NIOSH (National Institute for Occupational Safety and Health)
 TDG (Transport of Dangerous Goods) Canada
 CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)
 RQ (Reportable Quantity) (RQ/% in mixture)
 STEL (Short Term Exposure Limit)
 TLV® (Threshold Limit Value)
 DNEL (Derived No Effect Level)
 SVHC (Substances of Very High Concern)
 BOD (Biochemical oxygen demand)
 COD (Chemical oxygen demand)
 ICAO (International Civil Aviation Organization)
 IMDG (International Maritime Dangerous Goods)
 ADR (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
 RID (Agreement Concerning the International Carriage of Dangerous Goods by Rail)
 SCBA (Self-Contained Breathing Apparatus) Positive Pressure
 PNEC (Predicted No Effect Concentration)
 TSCA (Toxic Substances Control Act)
 GHS (Globally Harmonized System)

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C. Number of revisions and Date 1.3.2
of most recent revision

D. Other

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End of Safety Data Sheet