

# SAFETY DATA SHEET

## Martinal® ONS

MOL No. 2009-68 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** Martinal® ONS

**Pure substance/mixture** Substance

**Aluminum Hydroxide**

**CAS Number** 21645-51-2

**Weight-%** >99

**B. Recommended use and Limitations on use**

**Recommended Use** Additive : Flame retardant

**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  
Wash hands thoroughly after handling**Response** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
IF ON SKIN: Wash with plenty of soap and water**Storage** Keep in a dry place  
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	>99

**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 (CO<sub>2</sub>).

**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/m<sup>3</sup> (respirable fraction)  
TWA: 15 mg/m<sup>3</sup> Total Dust  
5 mg/m<sup>3</sup> Respirable Dust

**B. Engineering Controls**

**Engineering Measures** Do not handle until all safety precautions have been read and understood

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Ensure adequate ventilation, especially in confined areas  
 Provide a good standard of controlled ventilation (10 to 15 air changes per hour)  
 Use exhaust ventilation to keep airborne concentrations below exposure limits  
 In case of insufficient ventilation, wear suitable respiratory equipment

**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**

<b>Physical State</b>	Solid Powder
<b>Color</b>	White
<b>Odor</b>	Odorless
<b>Odor Threshold</b>	No information available
<b>pH:</b>	+/- 9 ( 10% Water )
<b>Melting point / Freezing point</b>	~ 300 °C / 572 °F (101.3 hPa)
<b>Initial boiling point and boiling range</b>	> 2900 °C / 5252 °F (101.3 hPa)
<b>Flash Point:</b>	Not applicable Product/Substance is inorganic Solid
<b>Evaporation Rate</b>	Not applicable
<b>Flammability (solid, gas)</b>	Not flammable
<b>Upper flammability limit:</b>	No data available
<b>Lower flammability limit:</b>	No data available
<b>Vapor Pressure</b>	Not applicable
<b>Vapor Density</b>	Not applicable
<b>Relative Density</b>	+/- 2.42 g/cm <sup>3</sup> (20 °C)
<b>Water Solubility</b>	Insoluble
<b>Solubility in other solvents</b>	No information available Not applicable Product/Substance is inorganic
<b>Decomposition Temperature</b>	200 °C (392 °F)
<b>Kinematic viscosity</b>	No data available.
<b>Dynamic viscosity</b>	Not applicable. Solid.
<b>Explosive Properties</b>	None
<b>Oxidizing Properties</b>	None

**9.2. Other information**

No data available

**Section 10: STABILITY AND REACTIVITY**

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**A. Stability and hazardous reaction potential****Stability** Stable under normal conditions**Hazardous reaction potential** None known**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 (Al<sub>2</sub>O<sub>3</sub>) Aerosol Maximum attainable concentration

**Aluminum Hydroxide**

**IARC** Not Listed

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

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**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

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

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

### Section 15: REGULATORY INFORMATION

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**National Regulations****Aluminum Hydroxide**

CAS Number 21645-51-2  
 Weight-% >99  
 Korean GHS Classification Not classified

**Other domestic and foreign regulations****Global Inventories**

Chemical Name	CAS Number	EC No	REACH registration number	Australia (AIIIC)	Canada (DSL)	China (IECSC)	Japan	S. Korea (KECL)	Mexico	New Zealand	Philippines (PICCS)	Taiwan	TSCA: United 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 1.3.1  
of most recent revision**

**D. Other**

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**End of Safety Data Sheet**