



## MAL Magyar Alumínium Termelő és Kereskedelmi Zrt.

Date of issue: 2011-01-01  
Date of revision: 2012-01-01  
Revision No: 0003 2012

Safety data sheet: aluminium hydroxide  
REACH-Registration No.: 01-2119529246-39-0021

\*\*\* Basically aluminium hydroxide is a non-hazardous substance. An MSDS is not mandatory required. The data sheet is provided on voluntary basis according to REACH Regulation (EC) No. 1907/2006. \*\*\*

# Safety data sheet

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

**Product name:** aluminium hydroxide

Trade name : aluminium hydroxide, aluminum trihydroxide, ATH; wet hydrates; dried hydrates; ground- and viscosity optimized hydrates; fine precipitated hydrates;

CAS name: aluminium hydroxide

CAS Number: 21645-51-2

EU name: aluminium hydroxide

EU Number: 244-492-7

IUPAC name: aluminum trihydroxide

Company product codes: ALH-.....; ALOLT.....

Substance type: mono constituent; inorganic substance

**REACH-Registration No.:** 01-2119529246-39-0021

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

Feedstock, Ceramics, Fillers, Industrial applications, Others: e.g. chemical reagents, Personal care

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

**Manufacturer:**

**Name:** MAL Magyar Alumínium Termelő és Kereskedelmi Zrt.

Head-office: H-8400 Ajka, Gyártelep hrsz. 598/15

Country: Hungary

Company e-mail: timfold@mal.hu

Company homepage: www.mal.hu

Company telephone: (+36) 88 522 400

Company telefax: (+36) 88 311 634



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Safety Data Sheet contact: sds@mal.hu

## 1.4. Emergency telephone number

### National Emergency contact:

Name: **Egészségügyi Toxikológiai Tájékoztató Szolgálat**

Address: 1096 Budapest, Nagyvárad tér 2.

Country: Hungary

Phone: +36 1 476 6464; +36 80 201 199

Telefax: +36 1 476 1138

E-mail: [ettsz@okbi.antsz.hu](mailto:ettsz@okbi.antsz.hu)

Homepage: [www.okbi.hu](http://www.okbi.hu)

## 2. Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008:

not classified, no H-phrases

Classification according to Directive 67/548/EEC:

not classified, no R-phrases

### 2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008:

none / no signal word

Labelling according to Directive 67/548/EEC:

none / no signal word

Precautionary statements (recommendation):

In case of longer period or high level airborne dust respiratory tract mechanical irritation should be happened.

P 261: Avoid breathing dust

P280: Wear eye protection

P285: In case of inadequate ventilation wear respiratory protection



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P305 + P351 + P338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P302+352: IF ON SKIN: Wash with soap and water

## 2.3. Other hazards

none

## 3. Composition/information on ingredients

### 3.1. Substances

Product name: aluminium hydroxide  
CAS Number: 21645-51-2  
EU Number: 244-492-7  
Purity: > 99.5 % (w/w)

## 4. First aid measures

First aide personnel: pay attention to self- protection!

### 4.1. Description of first aid measures

Inhalation: Move to fresh air. Consult physician if necessary.

Skin contact: Mechanical (dry) removal, than rinsing with water.

Eye contact: Rinse with plenty of water. Consult physician if necessary.

Ingestion: Rinse mouth and give plenty of water to drink. Consult physician if necessary.

Advice to medical treatment: No special advice.

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

None



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#### 4.3. Indication of any immediate medical attention and special treatment needed

None

### 5. Firefighting measures

#### 5.1. Extinguishing media

**The substance is inflammable and non-explosive**

Suitable extinguishing media: Use fire fighting media appropriate for surrounding materials

Unsuitable extinguishing media: None

#### 5.2. Special hazards arising from the substance or mixture

None

#### 5.3. Advice for firefighters

None

### 6. Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation. In case of exposure to high level airborne dust wear a personal respirator in compliance the local bye-laws.

See seesection 8.

#### 6.2. Environmental precautions

Avoid dispersal of spilled material and runoff. Avoid creating dusty conditions and prevent wind dispersal. Collect material for recycling if possible



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### 6.3. Methods and material for containment and cleaning up

The material can be taken up mechanically and disposed of observing the national regulations.

### 6.4. Reference to other sections

See: 2.2. Label elements; 7. Handling and storage; 8. Exposure controls/personal protection; 13. Disposal considerations

## 7. Handling and storage

General advice: Handle in accordance with good industrial hygiene and safety practice. Wear suitable personal working cloth and protective equipment.

### 7.1. Precautions for safe handling

Dust generation: Avoid dust formation. No special handling advice required

Eating, hygiene in work area: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

Precautions against fire and explosion: The substance is inflammable and non-explosive

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

Condition of storage rooms and tanks: No any special precautions required.

Incompatible substances or mixtures: None

Further information of storage: Dry storage.

Packaging compatibilities: None

### 7.3. Specific end use(s)

Feedstock, Ceramics, Fillers, Industrial applications, Others: e.g. chemical reagents, Personal care



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## 8. Exposure controls/personal protection

### 8.1. Control parameters

Components with specific control parameters as limit values: Occupational exposure limits (air): generally same as for nuisance dust

Observe the local by-laws in terms of dust.

(Germany: inhalable dust 10 mg/m<sup>3</sup>, respirable dust 3 mg/m<sup>3</sup>;

Great Britain: : inhalable dust 10 mg/m<sup>3</sup>, respirable dust 4 mg/m<sup>3</sup>;

USA: OSHA - Respirable fraction: 5 mg/m<sup>3</sup>, Total dust: 15 mg/m<sup>3</sup>;

Hungary: Egyéb inert porok - totális (belélegezhető): 10 mg/m<sup>3</sup>; respirábilis: 6 mg/m<sup>3</sup>)

Exposure limits for industrial workers:

Observe the local by-laws in terms of dust.

(Germany: inhalable dust 10 mg/m<sup>3</sup>, respirable dust 3 mg/m<sup>3</sup>;

Great Britain: : inhalable dust 10 mg/m<sup>3</sup>, respirable dust 4 mg/m<sup>3</sup>;

USA: OSHA - Respirable fraction: 5 mg/m<sup>3</sup>, Total dust: 15 mg/m<sup>3</sup>;

Hungary: Egyéb inert porok - totális (belélegezhető): 10 mg/m<sup>3</sup>; respirábilis: 6 mg/m<sup>3</sup>)

Exposure limits for professional workers :

Observe the local by-laws in terms of dust.

(Germany: inhalable dust 10 mg/m<sup>3</sup>, respirable dust 3 mg/m<sup>3</sup>;

Great Britain: : inhalable dust 10 mg/m<sup>3</sup>, respirable dust 4 mg/m<sup>3</sup>;

USA: OSHA - Respirable fraction: 5 mg/m<sup>3</sup>, Total dust: 15 mg/m<sup>3</sup>;

Hungary: Egyéb inert porok - totális (belélegezhető): 10 mg/m<sup>3</sup>; respirábilis: 6 mg/m<sup>3</sup>)

Exposure limits for consumers: Not applicable

### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

Avoid dust formation. Appropriate local exhaust ventilation is recommended.



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### 8.2.2. Individual protection measures, such as personal protective equipment

Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended

(a) Eye / face protection: Safety glasses with side-shields

(b) Skin protection: No special protective equipment required. Wearing of closed work clothing is recommended

(b.1) Hand protection: Protective gloves

(b.2) Other: -

(c) Respiratory protection: Respiratory protection: During production process dust is generated; and if ventilation is inadequate, wear dust masks or respirators (P2; P3; FFP2 or FFP3)

(d) Thermal hazards: Not applicable

### 8.2.3. Environmental exposure controls

No special exposure controls required

## 9. Physical and chemical properties

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

(a) Appearance: white odourless powder

(b) Odour: odourless

(c) Odour threshold: -

(d) pH: Not applicable

(e) Melting point/freezing point: 300 °C at 1013 hPa

(f) Initial boiling point and boiling range: 2980 °C at 1013 hPa

(g) Flash point: Not applicable

(h) Evaporation rate: Not applicable

(i) Flammability (solid, gas): Not flameable

(j) Upper/lower flammability or explosive limits: Not applicable

(k) Vapour pressure: Not applicable

(l) Vapour density: Not applicable



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(m) Relative density: 2.42 g/cm<sup>3</sup> at 20 oC

(n) Solubility(ies): poorly soluble (water solubility 0.00009 g/L at 20 oC)

(o) Partition coefficient n-octanol/water: Not applicable

(p) Auto-ignition temperature: Not applicable

(q) Decomposition temperature: > 200 oC (H<sub>2</sub>O forming)

(r) Viscosity: Not applicable

(s) Explosive properties: Not explosive

(t) Oxidising properties: Not oxidizing

## 9.2. Other information

Granulometry: <2 - 200 micron

## 10. Stability and reactivity

### 10.1. Reactivity

The substance is not reactive

### 10.2. Chemical stability

Thermal decomposition starts at app 200o C

### 10.3. Possibility of hazardous reactions

No hazardous reactions known

### 10.4. Conditions to avoid

Strong acids and caustic solutions can solve it.

### 10.5. Incompatible materials

None

### 10.6. Hazardous decomposition products

No hazardous decomposition products known

## 11. Toxicological information

### 11.1. Information on toxicological effects

It is recommended that aluminium hydroxide is not to be classified for acute oral, dermal and inhalation toxicity.





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### 11.1.1. Substances

(a) acute toxicity:

Acute Oral: No bioaccumulation potential

Acute Inhalation: LD50 (rat) > 2000 mg/kg bw

Acute Dermal: LC50 (4 hs) : > 2.3 mg/L air

(b) skin corrosion/irritation: Not applicable

(c) serious eye damage/irritation: not skin irritant

(d) respiratory or skin sensitisation: No effects apart from mechanical irritation.

(e) germ cell mutagenicity: test substance is not a sensitizer

(f) carcinogenicity: Genetic toxicity: negative

(g) reproductive toxicity: no a systemic carcinogenic effect from exposure to aluminium hydroxide

(h) STOT-single exposure: Negative. There is no evidence of any CMR effects

(i) STOT-repeated exposure: NOAEL (chronic, rat) 30 mg Al/kg bw/day as aluminium citrate

(j) aspiration hazard: NOAEC (subchronic, rat) 70 mg Al/m<sup>3</sup> as aluminium oxide

## 12. Ecological information

### 12.1. Toxicity

With regard to PBT and vPvB assesment Annex XIII of the REACH Regulation (EC) No. 1907/2006 is not applicable to inorganic substances. As aluminium metal, powders and oxide are not bio-available, owing to their extreme insolubility in water, and small bioaccumulation factors (<250), hence they do not fulfil either of the PBT and vPvB criteria for classification.

Fish (*Salmo Trutta*) toxicity: LC/EC 50: > 100mg/l

Invertebrate (*Daphnia Magna*) toxicity: LC/EC 50: > 100mg/l

Algae (*Selenastrum Capricornutum*) toxicity: LC/EC 50: > 100mg/l



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EC10/LC10 or NOEC for aquatic micro-organisms: 200 mg/L

## 12.2. Persistence and degradability

Not applicable

## 12.3. Bioaccumulative potential

Not applicable for inorganic substance

## 12.4. Mobility in soil

Not applicable

## 12.5. Results of PBT and vPvB assessment

Not PBT, vPvB substance

## 12.6. Other adverse effects

None

## 13. Disposal considerations

If it is possible reuse or recycle. The waste can be handled according to the local bye-laws

### 13.1. Waste treatment methods

Recycling of the used, fully emptied packaging according to the local bye-laws.

## 14. Transport information

### 14.1. UN number

UN numbers are four-digit numbers that identify hazardous substances

UN number: Non hazardous material.

### 14.2. UN proper shipping name

Overland freight: Non hazardous material.

ADR/RID class: Non hazardous material.



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Sea freight: Non hazardous material.  
IMDG class: Non hazardous material.  
Air freight: Non hazardous material.  
ICAO/I ATA class: Non hazardous material.

### 14.3. Transport hazard class(es)

Non hazardous material.

### 14.4. Packing group

Non hazardous material.

### 14.5. Environmental hazards

Non hazardous material.

### 14.6. Special precautions for user

Non hazardous material.

### 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Non hazardous material.

## 15. Regulatory information

This product is not classified and labelled in accordance with EC directives. No hazard symbol is necessary.

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006



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COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Chemical Safety Report of aluminium hydroxide

Hungarian decree: 25/2000. (IX. 30.) EüM-SzCsM együttes rendelet a munkahelyek kémiai

Hungarian decree: 44/2000. (XII. 27.) EüM rendelet a veszélyes anyagokkal és a veszélyes

Hungarian regulation: 2000. évi XXV. Törvény a kémiai biztonságról

### 15.2. Chemical safety assessment

Chemical Safety Assessment (CSR) has been done.

## 16. Other information

### Exposure Scenario:

As a result of the hazard assessment and PBT/vPvB assessment it is found that SUBSTANCE aluminium hydroxide (CAS Number: 21645-51-29) does not meet the criteria for classification as hazardous (according to Directives 67/548/EEC and 1272/2008/EC) nor is it considered to be a PBT/vPvB. Exposure assessment and the subsequent step of risk characterisation is not required.

### Marking of revision:

1. - Since 28. 06. 2011. the version 0002\_2011 is valid. Because of important changes in form of Safety data sheet.
2. - Since 01. 01. 2012. the version 0003\_2012 is valid. Change in Head-office address of Manufacturer (chapter 1.3)

### Abbreviations and acronyms:

PBT - Persistent, Bioaccumulative and Toxic chemicals

vPvB - very Persistent, very Bioaccumulative



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LD - Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.

LC - Lethal Concentration. The concentration of the chemical in air that kills 50% of the test animals in a given time (usually four hours) is the LC50 value.

UVCB substances - substances of unknown or variable composition, complex reaction products or biological materials

CMR effects - carcinogenity, mutagenicity and toxicity for reproduction

CAS - Chemical Abstracts Service (division of the American Chemical Society)

OSHA - Occupational Safety and Health Administration (US)

ADR - Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID - Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations concerning the International Transport of Dangerous Goods by Rail)

IMDG: - International Maritime Code for Dangerous Goods

IATA - International Air Transport Association

IATA-DGR - Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO - International Civil Aviation Organization

ICAO-TI - Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS - Globally Harmonized System of Classification and Labelling of Chemicals

EINECS - European Inventory of Existing Commercial Chemical Substances

PNEC - Potential No Effect Concentration

DNEL - Derived No Effect Level

DOC - Dissolved Organic Compounds

Bwt - bodyweight



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### List of relevant H and P phrases:

P 261: Avoid breathing dust

P280: Wear eye protection

P285: In case of inadequate ventilation wear respiratory protection

P305 + P351 + P338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P302+352: IF ON SKIN: Wash with soap and water

### Remarks:

This Safety Data Sheet contains our currently known information. The Safety Data Sheet was prepared according to our best knowledge, but only for information. Therefore the given data do not serve any guaranty or legal obligation concerning to characteristics of the product.

This Safety Data Sheet serves for help to the user in making his own decision about suitability of the product to his own usage goals.

Because the handling, storing, using and annihilation are out of our competence, we preclude the responsibility concerning to the handling, storing, using and annihilation of product.

If the product is used as a component of an other product this Safety Data Sheet can not be used any more.

### Standard commercial types:



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### wet hydrates;

ALH-D80; ALH-W90

### dried hydrates;

ALOLT 01; ALOLT 1AF

### ground- and viscosity optimized hydrates;

ALOLT 21AF; ALOLT 2AF; ALOLT 28AF; ALOLT 8AF; ALOLT 38AF; ALOLT 30AF;  
ALOLT 50AF; ALOLT 59AF; ALOLT 704; ALOLT 710; ALOLT 714; ALOLT 716; ALOLT 720; ALOLT  
730

### fine precipitated hydrates;

ALOLT 60F; ALOLT 60DLS; ALOLT 60P; ALOLT 90F; ALOLT 90DLS; ALOLT 120F

Any modification or change in the listing of commercial, standard types does not mean the revision of Safety Data Sheet, since concerning the merits remains unchanged.

### Prepared by:

MAL Magyar Alumínium Termelő és Kereskedelmi Zrt.

H-8401 Ajka, Gyártelep, hrsz. 598 (Pf.: 124)

timfold@mal.hu

www.mal.hu

(+36) 88 522 400

(+36) 88 311 634