SAFETY DATA SHEET
Alumina hydrate

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier
Product name : Alumina hydrate
EC number : 244-492-7

REACH Registration number

<table>
<thead>
<tr>
<th>Registration number</th>
<th>Legal entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>01-2119529246-39-0000</td>
<td>Alteo Gardanne</td>
</tr>
<tr>
<td></td>
<td>Route de Biver BP 20062</td>
</tr>
<tr>
<td></td>
<td>13541 Gardanne cedex</td>
</tr>
<tr>
<td></td>
<td>FRANCE</td>
</tr>
</tbody>
</table>

CAS number : 21645-51-2
Product code : Not available.
Product type : Powder.
Other means of identification : Alumina Trihydrate, ATH, Aluminium Hydroxide, Hydrated Alumina, Aluminium Trihydroxide, dried hydrate, LVSW series, TIMAL H series, LVSH series, FRAT series.

Chemical formula : Al(OH)_3

1.2 Relevant identified uses of the substance or mixture and uses advised against
Product use : feedstock for the manufacture of aluminium oxide and other aluminium containing compounds, including aluminium fluoride, aluminium sulphate, PAC, zeolites, and sodium aluminate. Coatings for titania. Filler for plastics, resins, rubbers, paper, paints, as a flame retardant and smoke suppressant for polymers. Additive to glass and various ceramic and refractory formulations.

Area of application : Industrial applications.

1.3 Details of the supplier of the safety data sheet
Alteo Gardanne
Route de Biver
BP 20062
13541 Gardanne cedex
France
Telephone no.+33 442 65 22 22
e-mail address of person responsible for this SDS : msds@alteo-alumina.com

1.4 Emergency telephone number
Supplier
Telephone number : +33 442 65 20 40

Date of issue/Date of revision : 21/08/2019
Date of previous issue : 31/07/2019
Version : 2.03
SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition: Mono-constituent substance

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Not classified.

The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended. See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word: No signal word.

Hazard statements: No known significant effects or critical hazards.

Precautionary statements:

- Prevention: Not applicable.
- Response: Not applicable.
- Storage: Not applicable.
- Disposal: Not applicable.

Hazardous ingredients: Aluminium hydroxide

Supplemental label elements: Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: Not applicable.

Special packaging requirements:

- Containers to be fitted with child-resistant fastenings: Not applicable.
- Tactile warning of danger: Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII:

<table>
<thead>
<tr>
<th>PBT</th>
<th>P</th>
<th>B</th>
<th>T</th>
<th>vPvB</th>
<th>vP</th>
<th>vB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable (Inorganic)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Not applicable (Inorganic)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Other hazards which do not result in classification: None known.

SECTION 3: Composition/information on ingredients

3.1 Substances: Mono-constituent substance

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Identifiers</th>
<th>%</th>
<th>Regulation (EC) No. 1272/2008 [CLP]</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium hydroxide</td>
<td>EC: 244-492-7 CAS: 21645-51-2</td>
<td>100</td>
<td>Not classified.</td>
<td>[A]</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Date of issue/Date of revision: 21/08/2019  Date of previous issue: 31/07/2019  Version: 2.03 2/11
SECTION 3: Composition/information on ingredients

Type
[A] Constituent
[B] Impurity
[C] Stabilising additive

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

   Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
   Inhalation  : Move exposed person to fresh air. Get medical attention if symptoms occur.
   Skin contact: Wash with soap and water. Get medical attention if symptoms occur.
   Ingestion   : Wash out mouth with water. Get medical attention if symptoms occur.
   Protection of first-aiders: No special protection is required. See Section 8 for information on appropriate personal protective equipment.

4.2 Most important symptoms and effects, both acute and delayed

   Over-exposure signs/symptoms
   Eye contact : Adverse symptoms may include the following: irritation, redness
   Inhalation  : Adverse symptoms may include the following: respiratory tract irritation, coughing
   Skin contact: No specific data.
   Ingestion   : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

   Notes to physician: Treat symptomatically. No specific treatment.
   Specific treatments: No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

   Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.
   Unsuitable extinguishing media : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

   Hazards from the substance or mixture : No specific fire or explosion hazard.
   Hazardous thermal decomposition products : None.

5.3 Advice for firefighters
SECTION 5: Firefighting measures

Special protective actions for fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Put on appropriate personal protective equipment.

For emergency responders: Put on appropriate personal protective equipment (see Section 8).

6.2 Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

6.3 Methods and material for containment and cleaning up

Small spill: Recycle, if possible. Waste must be disposed of according to applicable regulations.

Large spill: Recycle, if possible. Waste must be disposed of according to applicable regulations. Avoid creating dusty conditions and prevent wind dispersal.

6.4 Reference to other sections: See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures: Avoid creating dusty conditions and prevent wind dispersal. Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust.

Advice on general occupational hygiene: Workers should wash hands and face before eating, drinking and smoking.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Avoid creating dusty conditions and prevent wind dispersal.

7.3 Specific end use(s)

Recommendations: Not available.

Industrial sector specific solutions: Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits: No exposure limit value known.
**SECTION 8: Exposure controls/personal protection**

**Recommended monitoring procedures**

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**DNELs/DMELs**

No DNELs/DMELs available.

**PNECs**

No PNECs available

8.2 Exposure controls

**Appropriate engineering controls**

Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Individual protection measures**

**Hygiene measures**

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. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection**

If operating conditions cause high dust concentrations to be produced, use dust goggles. Safety eyewear should be used when there is a likelihood of exposure.

**Skin protection**

**Hand protection**

Wear suitable gloves.

**Body protection**

No special protective clothing is required.

**Other skin protection**

No special protective clothing is required.

**Respiratory protection**

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

**Environmental exposure controls**

Avoid creating dusty conditions and prevent wind dispersal.

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### SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

**Appearance**

**Physical state**

Solid. [Powder.]

**Colour**

White. Pale colour.

**Odour**

Odourless.
## SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odour threshold</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>2072°C</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>2977°C</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non-flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat, shocks and mechanical impacts, oxidizing materials, reducing materials, combustible materials, organic materials, metals, acids, alkalis and moisture.</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>2.4</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Insoluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>180°C</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not available.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### 9.2 Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solubility in water</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>78 g/mole</td>
</tr>
<tr>
<td>Density</td>
<td>2.42 g/cm³</td>
</tr>
<tr>
<td>Physical/chemical properties</td>
<td>No additional information.</td>
</tr>
</tbody>
</table>

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

- No specific test data related to reactivity available for this product or its ingredients.

### 10.2 Chemical stability

- The product is stable.

### 10.3 Possibility of hazardous reactions

- Under normal conditions of storage and use, hazardous reactions will not occur.

### 10.4 Conditions to avoid

- Not applicable.

### 10.5 Incompatible materials

- Not applicable.
SECTION 10: Stability and reactivity

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Conclusion/Summary : Not available.

Acute toxicity estimates

N/A

Irritation/Corrosion

Conclusion/Summary

Skin : No significant irritation expected other than possible mechanical irritation.

Eyes : May cause mild eye irritation.

Respiratory : May cause respiratory irritation.

Sensitisation

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : No carcinogenic effect.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure

Potential acute health effects

Eye contact : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics
SECTION 11: Toxicological information

Eye contact: Adverse symptoms may include the following:
- irritation
- redness

Inhalation: Adverse symptoms may include the following:
- respiratory tract irritation
- coughing

Skin contact: No specific data.

Ingestion: No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure
- Potential immediate effects: Not available.
- Potential delayed effects: Not available.

Long term exposure
- Potential immediate effects: Not available.
- Potential delayed effects: Not available.

Potential chronic health effects
Not available.

Conclusion/Summary: No known significant effects or critical hazards.

General: Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity: No known significant effects or critical hazards.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Other information: Not available.

SECTION 12: Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium hydroxide</td>
<td>EC50 &gt;100 mg/l</td>
<td>Algae - Selenastrum capricornutum</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>EC50 &gt;100 mg/l</td>
<td>Daphnia - Daphnia magna</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EC50 &gt;100 mg/l</td>
<td>Fish - Salmo trutta</td>
<td>46 hours</td>
</tr>
</tbody>
</table>

Conclusion/Summary: No known significant effects or critical hazards.

12.2 Persistence and degradability

Conclusion/Summary: Not readily biodegradable.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium hydroxide</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential
SECTION 12: Ecological information

Not available.

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc})

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>PBT</th>
<th>P</th>
<th>B</th>
<th>T</th>
<th>vPvB</th>
<th>vP</th>
<th>vB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium hydroxide</td>
<td>Not applicable (Inorganic)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Not applicable (Inorganic)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : Recycle, if possible. The generation of waste should be avoided or minimised wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

<table>
<thead>
<tr>
<th></th>
<th>ADR/RID</th>
<th>ADN</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2 UN proper shipping name</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14.3 Transport hazard class(es)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14.4 Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14.5 Environmental hazards</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>
Alumina hydrate

SECTION 14: Transport information

14.6 Special precautions for user

Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not available.

Remarks
IMSBC code: group A and B

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV
None of the components are listed.

Substances of very high concern
None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Not applicable.

Other EU regulations

Europe inventory
This material is listed or exempted.

Ozone depleting substances (1005/2009/EU)
Not listed.

Prior Informed Consent (PIC) (649/2012/EU)
Not listed.

Seveso Directive
This product is not controlled under the Seveso Directive.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals
Not listed.

Montreal Protocol (Annexes A, B, C, E)
Not listed.

Stockholm Convention on Persistent Organic Pollutants
Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)
Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals
SECTION 15: Regulatory information

15.2 Chemical safety assessment : Complete.
15.3 Registration status : Applicable.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms:
- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- N/A = Not available
- PBT = Persistent, Bioaccumulative and Toxic
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- vPvB = Very Persistent and Very Bioaccumulative

Key literature references and sources for data:
- Regulation (EC) No. 1272/2008 [CLP]; European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), concluded in Geneva on 30 September 1957 plus amendments (Uniform text: Journal of Laws 27/2009 pos. 162 plus amendments); European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN); Occupational exposure limits; International regulations

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not classified.</td>
<td></td>
</tr>
</tbody>
</table>

Full text of abbreviated H statements
Not applicable.

Full text of classifications [CLP/GHS]
Not applicable.

Training advice
Ensure operatives are trained to minimise exposures. Training staff on good practice.

Date of issue/ Date of revision : 21/08/2019
Date of previous issue : 31/07/2019
Version : 2.03

Notice to reader
To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.