Calcined Alumina

SAFETY DATA SHEET

Calcined Alumina

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

1.1 Product identifier

Product name : Calcined Alumina
EC number : 215-691-6

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

Product use : feedstock for the manufacture of aluminium metal and various aluminium oxide based materials e.g. tabular alumina, fused alumina, bubble alumina, sintered alumina, Spinel, Mullite, calcium aluminate cement, beta-alumina, zirconia alumina. Manufacture of ceramics, tiles, porcelain, hotel-ware, refractories, abrasives, polishing and cleaning compounds, wear parts, brake linings, electrical insulating materials, spark plugs, fillers, toothpaste, cosmetics. Media for sand blasting and heat treatment.

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

1.4 Emergency telephone number

Supplier
Telephone number : +33 442 65 20 40
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:

Prevention: 

Response: 

Storage: 

Disposal: 

Precautionary statements

Hazardous ingredients: Calcined Alumina

Supplemental label elements

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

No signal word.

Supplemental label elements: Not applicable.

Hazardous ingredients: Calcined Alumina

2.3 Other hazards

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

PBT

P

B

T

vPvB

vP

vB

Not applicable

N/A

N/A

N/A

Not applicable

N/A

N/A

Other hazards which do not result in classification

Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

SECTION 3: Composition/information on ingredients

3.1 Substances

Product/ingredient name: Aluminium oxide

Identifiers

%: >98


Type: [A]
SECTION 3: Composition/information on ingredients
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.

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

Hazard from the substance or mixture : No specific fire or explosion hazard.

Hazardous thermal decomposition products : None.
SECTION 5: Firefighting measures

5.3 Advice for firefighters

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 (see Section 8).

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

6.2 Environmental precautions: Avoid dispersal of spilt 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. Workers should wash hands and face before eating, drinking and smoking.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Exposure limit values</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium oxide</td>
<td>EH40/2005 WELs (United Kingdom (UK), 8/2018). TWA: 10 mg/m³ 8 hours. Form: inhalable dust</td>
</tr>
</tbody>
</table>

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.

Date of issue/Date of revision: 23/07/2019

Date of previous issue: 27/08/2013

Version: 1.01
SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid. [Powder.]</td>
</tr>
<tr>
<td>Colour</td>
<td>White.</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless.</td>
</tr>
<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</td>
<td>2977°C</td>
</tr>
<tr>
<td>boiling range</td>
<td></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</td>
<td>Not available.</td>
</tr>
<tr>
<td>explosive limits</td>
<td></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>3.97</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>Not applicable.</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 available.</td>
</tr>
<tr>
<td>Physical/chemical properties comments</td>
<td>No additional information.</td>
</tr>
</tbody>
</table>

SECTION 10: Stability and reactivity

10.1 Reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
<td></td>
</tr>
</tbody>
</table>

10.2 Chemical stability

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>The product is stable.</td>
<td></td>
</tr>
</tbody>
</table>

10.3 Possibility of hazardous reactions

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 10: Stability and reactivity

10.4 Conditions to avoid
- None known.

10.5 Incompatible materials
- None known.

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: No known significant effects or critical hazards.
- N/A

Irritation/Corrosion
- Conclusion/Summary:
  - Skin: No significant irritation expected other than possible mechanical irritation.
  - Eyes: No significant irritation expected other than possible mechanical irritation.
  - Respiratory: No significant irritation expected other than possible mechanical irritation.

Sensitisation
- Conclusion/Summary:
  - Skin: Non-irritant to skin.
  - Respiratory: Non-irritating to the respiratory system.

Mutagenicity
- Conclusion/Summary: No mutagenic effect.

Carcinogenicity
- Conclusion/Summary: No carcinogenic effect.

Reproductive toxicity
- Conclusion/Summary: Not considered to be toxic to the reproductive system.

Teratogenicity
- Conclusion/Summary: No teratogenic effect.

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
- Not available.

Potential acute health effects
- Eye contact: Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
SECTION 11: Toxicological information

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

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 oxide</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>48 hours</td>
</tr>
<tr>
<td></td>
<td>EC50 &gt;100 mg/l</td>
<td>Fish - Salmo trutta</td>
<td>96 hours</td>
</tr>
</tbody>
</table>
SECTION 12: Ecological information


Calcined Alumina

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 oxide</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

**Soil/water partition coefficient (K_{oc})**: Not available.

**Mobility**: Not mobile under normal environmental conditions. May be leached from the ground at low pH (<5.5) or high pH (>8.5)

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>Calcined Alumina</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>14.1 UN number</th>
<th>ADR/RID</th>
<th>ADN</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>14.2 UN proper shipping name</th>
<th>ADR/RID</th>
<th>ADN</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.3 Transport hazard class(es)</th>
<th>ADR/RID</th>
<th>ADN</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.4 Packing group</th>
<th>ADR/RID</th>
<th>ADN</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.5 Environmental hazards</th>
<th>ADR/RID</th>
<th>ADN</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td></td>
<td>No.</td>
</tr>
</tbody>
</table>

**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.

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: All components are 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.

Date of issue/Date of revision: 23/07/2019  Date of previous issue: 27/08/2013  Version: 1.01 10/12
SECTION 15: Regulatory information

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
Not listed.

15.2 Chemical safety assessment
This product contains substances for which Chemical Safety Assessments are still required.

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]
Not classified.

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: 23/07/2019
Date of previous issue: 27/08/2013
Version: 1.01
SECTION 16: Other information

Date of issue/Date of revision : 23/07/2019
Date of previous issue : 27/08/2013
Version : 1.01

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.