# Material Safety Data Sheet

## Activated Alumina MSDS

## Section 1: Chemical Product and Company Identification

### 1.1. Chemical Product Identification

**Product Name:** Activated Aluminium Oxide  
**CAS#:** 1344-28-1  
**EC:** 215-691-6  
**REACH:** 01-2119529248-35  
**Synonym:** SPHERALITE  
**Chemical Formula:** Al₂O₃

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

Activated Alumina

### 1.3. Use descriptor system (REACH) :

- PROC 5  
- PROC 4  
- PROC 10  
- PROC 11  
- PROC 13  
- PROC 19  
- PROC 7  
- PROC 9  
- PROC 8a  
- PROC 8b  
- PROC 2  
- PROC 23  
- PROC 24  
- PROC 25  
- PROC 14  
- PROC 3  
- ERC 8e  
- ERC 7  
- ERC 3  
- ERC 2  
- ERC 11a  
- ERC 4  
- ERC 8a  
- ERC 8d  
- ERC 5  
- ERC 10a  
- ERC 1  
- PC 20  
- PC 29  
- PC 38  
- PC 32  
- PC 35  
- PC 31  
- PC 2  
- PC 16  
- PC 15  
- PC 14  
- PC 3  
- PC 1  
- PC 0  
- SU 10  
- SU 12  
- SU 13  
- SU 14  
- SU 17  
- SU 8  
- SU 9

### 1.4. Company Information

**Company Name:** Claire Technologies  
**Adresse:** 6220 Angus Drive, #102  
Raleigh, NC 27617  
**Tel:** (984) 242-0855  
**E-mail:** info@claire-tech.com  
**Website:** www.claire-tech.com
Section 2: Hazards Identification

2.1. Classification of the substance or mixture

In accordance with Regulation (EC) No 1272/2008 and its amendments. This substance does not present a physical hazard. Refer to the recommendations regarding the other products present on the site. This substance does not present a health hazard with the exception of possible occupational exposure thresholds (see paragraphs 3 and 8). This substance does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

Accordance with Directive 67/548 / EEC, 1999/45 / EC and their adaptations. This substance does not present a physical hazard. Refer to the recommendations regarding the other products present on the site. This substance does not present a health hazard with the exception of possible occupational exposure thresholds (see paragraphs 3 and 8). This substance does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

2.2. Labeling of components


No labeling is required for this substance.


2.3. Other hazards

The substance does not satisfy the PBT or vPvP criteria in accordance with annexe XIII of the REACH regulations EC 1907/2006. Avoid the formation or spread of dust in the atmosphere.

Section 3: Composition/Information on Ingredients

Substances

Composition:

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<tr>
<th>Identification</th>
<th>Note</th>
<th>% mass</th>
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<tr>
<td>ALUMINIUM OXIDE</td>
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<td>87-94%</td>
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<td>CAS: 1344-28-1</td>
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<td>TITANIUM DIOXIDE</td>
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<td>SILVER</td>
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[1] Substance for which maximum workplace exposure limits are
Section 4: First Aid Measurements

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person.

4.1. Description of first aid measures In the event of exposure by inhalation:
Move the affected person away from the contaminated area and into the fresh air.
In the event of splashes or contact with eyes:
Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open.
If there is any redness, pain or visual impairment, consult an ophthalmologist.
In the event of splashes or contact with skin:
Watch out for any remaining product between skin and clothing, watches, shoes, etc.
Rinse with plenty of water.
In the event of swallowing:
Seek medical attention, showing the label.
Rinse mouth out with water.

4.2. Most important symptoms and effects, both acute and delayed
The main symptoms and effects known are described in the label (§ 2) and / or in section 11.

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

Section 5: Firefighting Measures

Non-flammable.

5.1. Extinguishing media Suitable methods of extinction
All extinguishing agents can be used.
Unsuitable methods of extinction
None to our knowledge. If there is a fire close by, use suitable extinguishing agents.

5.2. Special hazards arising from the substance or mixture
A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health. Do not breathe in smoke.
In the event of a fire, the following may be formed:
- carbon dioxide (CO2)

5.3. Advice for firefighters
No data available.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Consult the safety measures listed under headings 7 and 8.
For fire-fighters
Fire-fighters will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions
Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up
Retrieve the product by mechanical means (sweeping/vacuuming).
If necessary, wash with water following recovery.

6.4. Reference to other sections
No data available.
Section 7: Handling and Storage

Requirements relating to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling
Always wash hands after handling.
Does not require any specific or particular measures. Avoid the formation or spread of dust in the atmosphere.
Ventilation.
Fire prevention:
Prevent access by unauthorised personnel.
Recommended equipment and procedures:
For personal protection, see section 8.
Observe precautions stated on label and also industrial safety regulations.
Prohibited equipment and procedures:
No smoking, eating or drinking in areas where the substance is used.

7.2. Conditions for safe storage, including any incompatibilities
No data available.
Storage
Keep away from incompatible materials.
Keep the container tightly closed in a cool, well ventilated place. To guarantee the quality and properties of the product keep:
- protected from humidity and bad weather conditions.
Packaging
Always keep in packaging made of an identical material to the original.

7.3. Specific end use(s)
No data available.

Section 8: Exposure Controls/Personal Protection

8.1. Control parameters

Occupational exposure limits:

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<th>TWA :</th>
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<th>Ceiling :</th>
<th>Definition :</th>
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**Derived no effect level (DNEL) or derived minimum effect level (DMEL):**

ALUMINA/BOEHMITE : DNEL : 3000 µg/m³ (in Al2O3)

**Predicted no effect concentration (PNEC):**

Environmental compartment: Fresh water.
PNEC : 0.0749 mg/l

Environmental compartment: Waste water treatment plant.
PNEC : 20 mg/l

**8.2. Exposure controls**

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE):

Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.
Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General information:

| Physical state: | Solid in granules. |

Important health, safety and environmental information:

| pH: | Not relevant. |
| Boiling point/boiling range: | Not relevant. |
| Flash point interval: | Not relevant. |
| Vapour pressure (50°C): | Not relevant. |
| Density: | <1 |
| Water solubility: | Insoluble. |
| Melting point/melting range: | 2000 °C. |
| Self-ignition temperature: | Not relevant. |
| Decomposition point/decomposition range: | Not relevant. |

9.2. Other information

- **Eye / face protection**
  Avoid contact with eyes.
  Before handling powders or dust emission, wear mask goggles in accordance with standard EN166. Safety spectacles with side shields.

- **Hand protection**
  Wear suitable protective gloves in the event of prolonged or repeated skin contact.
  Recommended properties:
  - Impervious gloves in accordance with standard EN374

- **Body protection**
  Work clothing worn by personnel shall be laundered regularly.
  After contact with the product, all parts of the body that have been soiled must be washed. Protective clothing with elasticated cuffs and closed neck.

- **Respiratory protection**
  Avoid breathing dust.
  Type of FFP mask:
  Wear a disposable half-mask dust filter in accordance with standard EN149. Category:
  - FFP1
  Particle filter according to standard EN143:
  - P1 (White)
Section 10: Stability and reactivity

10.1. Reactivity
No data available.

10.2. Chemical stability
This substance is stable under the recommended handling and storage conditions in section 7. Refractory product, stable at high temperatures.

10.3. Possibility of hazardous reactions
No data available.

10.4. Conditions to avoid
Avoid:
- formation of dusts

10.5. Incompatible materials
Keep away from:
- strong acids
- strong bases
- strong oxidising agents

10.6. Hazardous decomposition products
The thermal decomposition may release/form:
- carbon monoxide (CO)
- carbon dioxide (CO2)

Section 11: Toxicological information

11.1. Information on toxicological effects
Chronic effects: May cause dryness of mucous membranes and skin.

11.1.1. Substances
This substance does not present a health hazard.

Acute toxicity:
ALUMINIUM OXIDE (CAS: 1344-28-1)

Oral route:
LD50 > 2000 mg/kg
Species: Rat
OCDE Ligne directrice 401 (Toxicité aiguë par voie orale)

Inhalation route:
LC50 > 2.3 mg/l
Species: Rat
OCDE Ligne directrice 403 (Toxicité aiguë par inhalation)

Skin corrosion/skin irritation:
negative

Serious damage to eyes/eye irritation:
May cause slight temporary irritation.

Respiratory or skin sensitisation:
negative

Germ cell mutagenicity:
negative
Carcinogenicity:
- negative

Reproductive toxicant:
- negative

Specific target organ systemic toxicity - single exposure:
- negative

Specific target organ systemic toxicity - repeated exposure:
- negative

Symptoms related to the physical, chemical and toxicological characteristics
- no data

Section 13: Disposal Considerations

Proper waste management of the substance and/or its container must be determined in accordance with Directive 2008/98/EC. Unused material may be incinerated or landfilled in facilities meeting local regulations.

13.1. Waste treatment methods
Do not pour into drains or waterways.

Waste:
Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals. Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company. Do not contaminate the ground or water with waste, do not dispose of waste into the environment. The exhausted catalysts may have different risks and properties compared to the original product. This safety data sheet is not applicable to exhausted catalysts.

Soiled packaging:
Empty container completely. Keep label(s) on container. Empty containers should be taken to local recyclers for disposal. Refer to local regulations.

06 03 16 metallic oxides other than those mentioned in 06 03 15

Section 14: Transport Informations


Section 15: Regulatory Informations

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
- Classification and labelling information included in section 2:
The following regulations have been used:
- Directive 1999/45/EC and its adaptations
- Regulation EC 1272/2008 modified by regulation EC 618/2012
- EU Regulation No. 1272/2008 amended by EU Regulation No. 758/2013.
- **Container information:**
  No data available.

- **Particular provisions:**
  No data available.

15.2. **Chemical safety assessment**
No data available.

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**Section 15: Regulatory Informations**

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations. It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the substance and not as a guarantee of the properties thereof.

**Abbreviations:**
- PNEC: Predicted No-Effect Concentration
- ADR: European agreement concerning the international carriage of dangerous goods by Road.
- IATA: International Air Transport Association. ICAO: International Civil Aviation Organisation
- RID: Regulations concerning the International carriage of Dangerous goods by rail.
- WGK: Wassergefahrdungsklasse (Water Hazard Class).
- PROC: Process Category
- ERC: Environmental Release Category
- PC: Market sector by type of Chemical Product
- SU: Sector of end Use