SAFETY DATA SHEET
ALUPREM - aluminum monohydrate - powder

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier
Product name ALUPREM - aluminum monohydrate - powder
Synonyms, Trade Names TB and SR-100 products
REACH Registration number 01-2119555298-28-0014
REACH Registration notes mono-constituent substance

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses catalytic application
Flame retardant
surface modifier
Uses advised against Any use other than those identified.

1.3. Details of the supplier of the safety data sheet
Supplier TP&T BV
Burgemeester Moslaan 13
8051 CP Hattem
The Netherlands
Tel: +31-38-33 88 657
Fax: +31-38-444-62-07
info.tpt@torminerals.com

1.4. Emergency telephone number
TP & T BV (Tor Minerals International Inc.): +31-38-33 88 657 / 0031(0)611060679

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture
Classification (EC 1272/2008)
Physical and Chemical Hazards Not classified.
Human health Not classified.
Environment Not classified.
Classification (67/548/EEC) Not classified.
The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Human health
Dust may irritate the eyes and the respiratory system.

Environment
The product is not expected to be hazardous to the environment.

2.2. Label elements
Label In Accordance With (EC) No. 1272/2008
No pictogram required.

Precautionary Statements
P261 Avoid breathing dust.
ALUPREM - aluminum monohydrate - powder

P280 Wear eye protection.
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+313 If eye irritation persists: Get medical advice/attention.
P401 Store in accordance with local regulations.
P501 Dispose of contents/container in accordance with local regulations.

Supplementary Precautionary Statements
P264 Wash contaminated skin thoroughly after handling.

2.3. Other hazards
This product does not contain any PBT or vPvB substances.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

<table>
<thead>
<tr>
<th>Boehmite</th>
<th>&gt;98%</th>
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</thead>
<tbody>
<tr>
<td>CAS-No.: 1318-23-6</td>
<td>EC No.: 215-284-3</td>
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<tr>
<td>Registration Number: 01-2119555298-28-0014</td>
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</table>

Classification (67/548/EEC) Not classified.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

REACH Registration number 01-2119555298-28-0014
REACH Registration notes mono-constituent substance
Composition Comments
No classified ingredients, or those having occupational exposure limits, present above the levels of disclosure.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General information
Remove victim immediately from source of exposure. Provide rest, warmth and fresh air.

Inhalation
If unconscious place patient on their side in the recovery position and ensure they are breathing. Clean nose and mouth with water.
Artificial respiration may be administered by suitably qualified first-aiders.
Get medical attention if symptoms persist.

Ingestion
NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Drink 1-2 glasses of water to dilute swallowed material and seek immediate medical attention.

Skin contact
Remove contaminated clothing and shoes. Wash skin thoroughly with soap and running water. Take especial care to clean folds, crevices, creases and groin.
Get medical attention if irritation persists or develops.
Launder clothing and clean shoes thoroughly before reuse.

Eye contact
Check for contact lenses which must be removed from the eyes before rinsing.
Promptly rinse eyes with plenty of clean water while lifting the eyelids.
Continue to rinse for at least 15 minutes. Continue until the eyes are free of all traces of contamination.
Get medical attention if any discomfort or irritation persists.

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

General information
If adverse symptoms develop as described the casualty should be transferred to hospital as soon as possible.

Inhalation
Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

Ingestion
May cause discomfort if swallowed.
ALUPREM - aluminum monohydrate - powder

Skin contact
Prolonged skin contact may cause redness and irritation.
Eye contact
May cause temporary eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed
Treat Symptomatically. Give supportive therapy if indicated.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media
Extinguishing media
This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture
Hazardous combustion products
No hazardous decomposition products.
Unusual Fire & Explosion Hazards
None known.

5.3. Advice for firefighters
Protective equipment for fire-fighters
Wear self-contained breathing apparatus and full protective clothing. Keep all unnecessary people away. Fire water run-off must not be allowed to contaminate ground or enter drains, sewers or water courses. Provide bunding against fire water run-off.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Do not breathe dust. Keep unnecessary people at a safe distance.

6.2. Environmental precautions
Do not discharge onto the ground or into water courses. Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body. Ensure that waste and contaminated materials are collected and removed from the work area as soon as possible in a suitably labelled container.

6.3. Methods and material for containment and cleaning up
Avoid generation and spreading of dust. Sweep up and place into clearly labelled containers for recovery or disposal (see section 13). Cover and move the containers. Flush the area with water. Flushings must not be allowed to contaminate ground or enter drains, sewers or water courses. Provide bunding against water run-off. Clean up personnel should wash contaminated skin thoroughly after dealing with spillage.

6.4. Reference to other sections

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling
Eye wash facilities and emergency shower must be available when handling this product. Use only with adequate ventilation. Do not breathe dust. Avoid spilling, skin and eye contact.
Avoid handling which leads to dust formation. Dust may form explosive mixtures with air. Keep away from heat, sparks or flame. Containers and equipment must be bonded to avoid static discharge. Use only electrical equipment suitable for explosive atmospheres. Avoid spilling, skin and eye contact. Wash thoroughly after handling. Keep away from heat, sparks and open flame.

7.2. Conditions for safe storage, including any incompatibilities
Store in tightly closed original container in a dry and cool place.

7.3. Specific end use(s)
For industrial use only.
ALUPREM - aluminum monohydrate - powder

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Ingredient Comments
No exposure limits noted for ingredient(s).

<table>
<thead>
<tr>
<th>DNEL</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Industry</td>
<td>Inhalation</td>
<td>Long Term</td>
<td>3.59 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumer</td>
<td>Oral</td>
<td>Long Term</td>
<td>Systemic Effects</td>
</tr>
</tbody>
</table>

Boehmite (CAS: 1318-23-6)

8.2. Exposure controls

Process conditions
Provide eyewash station.

Engineering measures
Provide adequate general and local exhaust ventilation.

Respiratory equipment
If ventilation is insufficient, suitable respiratory protection must be provided.

Hand protection
Wear suitable protective gloves conforming to EN 374. Seek recommendations from manufacturer or supplier. After using gloves the hands should be washed and thoroughly dried and a suitable moisturiser applied.

Eye protection
Wear approved safety goggles.

Other Protection
Provide eyewash station and safety shower.

Hygiene measures
Wash promptly if skin becomes contaminated. When using do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Powder</td>
</tr>
<tr>
<td>Colour</td>
<td>White</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water</td>
</tr>
<tr>
<td>Initial boiling point and boiling range (°C)</td>
<td>2920 - 3040°C</td>
</tr>
<tr>
<td>Melting point (°C)</td>
<td>2040°C with decomposition</td>
</tr>
<tr>
<td>Relative density</td>
<td>3.0 @ 20°C</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>400 - 450 kg/m³</td>
</tr>
<tr>
<td>pH-Value, Diluted Solution</td>
<td>7 - 9 @ 10% As an aqueous slurry</td>
</tr>
</tbody>
</table>

Partition Coefficient
(N-Octanol/Water)
Not relevant

9.2. Other information

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal conditions of storage and use. See section 7.

Known dangerous reactions
Avoid unintended contact with strong acids.
ALUPREM - aluminum monohydrate - powder

10.3. Possibility of hazardous reactions
Not determined.
Hazardous Polymerisation
Not relevant

10.4. Conditions to avoid
None known.

10.5. Incompatible materials
Materials To Avoid
None known.

10.6. Hazardous decomposition products
Not known.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity:
Acute Toxicity (Oral LD50)
> 2000 mg/kg Rat
REACH dossier information
Acute Toxicity (Dermal LD50)
Scientifically unjustified.
REACH dossier information

Acute Toxicity (Inhalation LC50)
> 2.3 mg/l (dust/mist) Rat 4 hours
REACH dossier information

Respiratory or skin sensitisation:
Respiratory sensitisation
Mouse
Not sensitising.
Skin sensitisation
Guinea pig maximization test (GPMT):
REACH dossier information
Not Sensitising.

Germ cell mutagenicity:
Genotoxicity - In Vitro
Chromosome aberration:
Ambiguous
Genotoxicity - In Vivo
Scientifically unjustified.
Ignored due to low Klimisch scoring of the test methodology.

Carcinogenicity:
Carcinogenicity
LOAEL 100 mg/m3 Inhalation. Hamster

Reproductive Toxicity:
Reproductive Toxicity - Fertility
Scientifically unjustified.
Does not contain any substances known to be toxic to reproduction.

Specific target organ toxicity - repeated exposure:
STOT - Repeated exposure
NOAEL 3225 mg/kg Oral Rat
ALUPREM - aluminum monohydrate - powder

Target Organs
Central nervous system
Not classified as a specific target organ toxicant after repeated exposure.

Inhalation
High concentrations of dust may irritate throat and respiratory system and cause coughing. Pre-existing respiratory conditions may be aggravated by exposure to dust.

Ingestion
May cause discomfort if swallowed.

Skin contact
Skin irritation is not anticipated when used normally. Not a skin sensitiser.

Eye contact
Can cause mechanical irritation to eyes.

Route of entry
Inhalation.
Target Organs
Respiratory system, lungs

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity
The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.1. Toxicity
Acute Fish Toxicity
Not toxic at limit of water solubility.
Acute Toxicity - Fish
NOEC 60 days 169 µg/l Salvelinus fontinalis ((American) brook trout)
Acute Toxicity - Aquatic Invertebrates
EC50 48 hours > 100 mg/l Daphnia magna
Acute Toxicity - Aquatic Plants
EC50 72 hours > 100 mg/l Scenedesmus subspicatus

12.2. Persistence and degradability
Not relevant for metallic salts.

12.3. Bioaccumulative potential
Bioaccumulative potential
Bioaccumulation is unlikely to be significant because of the low water solubility of this product.
Partition coefficient
Not relevant

12.4. Mobility in soil
Mobility:
The product is insoluble in water and will sediment in water systems.

12.5. Results of PBT and vPvB assessment
This product does not contain any PBT or vPvB substances.

12.6. Other adverse effects
Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS
ALUPREM - aluminum monohydrate - powder

General information
Product is hazardous waste. Do not allow into drains, sewers or water courses.
Disposal must be by means of a licensed waste contractor.

13.1. Waste treatment methods
Dispose of waste and residues in accordance with local authority requirements.

SECTION 14: TRANSPORT INFORMATION

General  The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number
Not applicable.

14.2. UN proper shipping name
Not applicable.

14.3. Transport hazard class(es)
Not applicable.
Transport Labels
No transport warning sign required.

14.4. Packing group
Not applicable.

14.5. Environmental hazards
Environmentally Hazardous Substance/Marine Pollutant No.

14.6. Special precautions for user
Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Statutory Instruments
Control of Substances Hazardous to Health Regulations (as amended). (COSHH)
Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2007. (CDG 2009)
Management of Health & Safety at Work Regulations 1999.
Approved Code Of Practice
The Control of Substances Hazardous to Health Regulations 2002 (as amended). Approved code of practice and guidance.
Guidance Notes
Introduction to Local Exhaust Ventilation HS(G)37.
Dust: General principles of protection (revised) EH44 1997.
EU Legislation
ALUPREM - aluminum monohydrate - powder

ADR (L’Accord européen relative au transport international des marchandises dangereuses par route.)
National Regulations

15.2. Chemical Safety Assessment

A chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

Information Sources
REACH Registration Dossier.

Revision Comments
Comprehensive revision.
And translated into the language of this document as of the date below.

Revision Date 03-OCT-13
Revision 04
Supersedes date 02-MAY-13
Risk Phrases In Full
NC Not classified.

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