Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY / UNDERTAKING

1.1 Product identifiers
   - Product Name: Lithium Aluminum Deuteride
   - CAS No.: 14128-54-2

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

1.3 Details of the supplier of the safety data sheet
   - Brand: BOC Sciences
   - Company: BOCSCI Inc.
   - Telephone: (631)-504-6093
   - Fax: (631) 614-7828

1.4 Emergency telephone number
   - E-mail address: info2@bocsci.com
   - Revision date: 01/01/2016

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
   - GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
   - Substances and mixtures, which in contact with water, emit flammable gases
     (Category 1), H260
   - Skin corrosion (Category 1B), H314
   - Serious eye damage (Category 1), H318

   For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

   Pictogram
   - Signal word: Danger
   - Hazard statement(s)
     - H260 In contact with water releases flammable gases which may ignite spontaneously.
     - H314 Causes severe skin burns and eye damage.
   - Precautionary statement(s)
     - P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire.
     - P231 + P232 Handle under inert gas. Protect from moisture.
     - P260 Do not breathe dust or mist.
     - P264 Wash skin thoroughly after handling.
P270  Do not eat, drink or smoke when using this product.
P280  Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310  IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P301 + P330 + P331  IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353  IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340  IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310  Immediately call a POISON CENTER or doctor/ physician.
P321  Specific treatment (see supplemental first aid instructions on this label).
P335 + P334  Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.
P363  Wash contaminated clothing before reuse.
P370 + P378  In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P402 + P404  Store in a dry place. Store in a closed container.
P405  Store locked up.
P501  Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : LAD
Formula : AlD₄Li
Molecular Weight : 41.98
CAS-No. : 14128-54-2
EC-No. : 237-980-6

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
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<tbody>
<tr>
<td>Lithium Aluminum Deuteride</td>
<td>Water-react. 1; Acute Tox. 3; Skin Corr. 1B; Eye Dam. 1; H260, H314</td>
<td>-</td>
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</table>

4. FIRST AID MEASURES
4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media
Dry powder. Do not use water.

5.2 Special hazards arising from the substance or mixture
Lithium oxides, Aluminum oxide

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid breathing vapours, mist or gas. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Do not flush with water. Keep in suitable, closed containers for disposal. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE
7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition – No smoking.
For precautions see section 2.2.
7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Never allow product to get in contact with water during storage.
Handle and store under inert gas. Reacts violently with water. Keep in a dry place.
7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
8.1 Control parameters
Components with workplace control parameters
Contains no substances with occupational exposure limit values.
8.2 Exposure controls
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment
Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Impervious clothing, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CE (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES
9.1 Information on basic physical and chemical properties
a) Appearance
   Form           Powder
   Color          no data available
b) Odour         no data available
c) pH            no data available
d) Melting point 125 °C (lit.)
e) Boiling point  no data available
f) Flash point   no data available
g) Ignition temperature  no data available
h) Lower explosion limit  no data available
i) Upper explosion limit  no data available
j) Water solubility  no data available
9.2 Other safety information
  no data available

10. STABILITY AND REACTIVITY
10.1 Reactivity
  no data available
10.2 Chemical stability
  Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions
  Reacts violently with water.
10.4 Conditions to avoid
  Heat, flames and sparks.
10.5 Incompatible materials
  Strong acids, Strong oxidizing agents, Strong reducing agents, Acid chlorides, Acid anhydrides, Phosphorus halides
10.6 Hazardous decomposition products
  Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION
11.1 Information on toxicological effects
  Acute toxicity
  no data available
  Inhalation: no data available
  Dermal: no data available
  Skin corrosion/irritation
  no data available
  Serious eye damage/eye irritation
  no data available
  Respiratory or skin sensitisation
  no data available
  Germ cell mutagenicity
  no data available
  Carcinogenicity
  IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
  ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
  NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
  OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity
no data available
Specific target organ toxicity - single exposure
no data available
Specific target organ toxicity - repeated exposure
no data available
Aspiration hazard
no data available
Additional Information
RTECS: EL2276000
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION
12.1 Toxicity
no data available
12.2 Persistence and degradability
no data available
12.3 Bioaccumulative potential
no data available
12.4 Mobility in soil
no data available
12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
12.6 Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS
13.1 Waste treatment methods
Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION
DOT (US)
UN number: 1410  Class: 4.3  Packing group: I
Proper shipping name: Lithium aluminum hydride.
Marine pollutant: No Poison
Inhalation Hazard: No
IMDG
UN number: 1410  Class: 4.3  Packing group: I
EMG-No: F-G, S-M
Proper shipping name: LITHIUM ALUMINIUM HYDRIDE
Marine pollutant: No
IATA
UN number: 1410  Class: 4.3  Packing group: I
Proper shipping name: Lithium aluminum hydride
IATA Passenger: Not permitted for transport
IATA Cargo Aircraft only: 15 kg

15. REGULATORY INFORMATION
SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards
Fire Hazard
Massachusetts Right To Know Components No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION
Full text of H-Statements referred to under sections 2 and 3.
Acute Tox.  Acute toxicity
Eye Dam.  Serious eye damage
H260  In contact with water releases flammable gases which may ignite spontaneously.
H314  Causes severe skin burns and eye damage.
H318  Causes serious eye damage.
Skin Corr.  Skin corrosion
Water-react.  Substances and mixtures, which in contact with water, emit flammable gases

HMIS Rating Health
Health hazard: 3
Chronic Health Hazard:
Flammability: 4
Physical Hazard: 2
NFPA Rating
Health hazard: 3
Fire Hazard: 4
Reactivity Hazard: 2

Further information

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