SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Name: Lithium Aluminum Hydride Solution

Product Number: All applicable American Elements product codes, e.g. LI-ALH-02-SOL , LI-ALH-03-SOL , LI-ALH-04-SOL , LI-ALH-05-SOL

CAS #: 16853-85-3

Relevant identified uses of the substance: Scientific research and development

Supplier details:
American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351

Emergency telephone number:
+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids(Category 2), H225
Acute toxicity, Oral(Category 4), H302
Eye irritation(Category 2A), H319
Carcinogenicity(Category 2), H351
Specific target organ toxicity -single exposure(Category 3), Respiratory system, H335
GHS Label elements, including precautionary statements
Pictogram

Signal word
Danger
Hazard statement(s)
H225
Highly flammable liquid and vapour.
H302
Harmful if swallowed.

H319
Causes serious eye irritation.
H335
May cause respiratory irritation.
H351
Suspected of causing cancer.
Precautionary statement(s)
P201
Obtain special instructions before use.
P202
Do not handle until all safety precautions have been read and understood.
P210
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233
Keep container tightly closed.
P240
Ground/bond container and receiving equipment.
P241
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242
Use only non-sparking tools.
P243
Take precautionary measures against static discharge.
P261
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264
Wash skin thoroughly after handling.
P270
Do not eat, drink or smoke when using this product.
P271
Use only outdoors or in a well-ventilated area.
P280
Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
Rinse mouth.
P303 + P361 + P353
IF ON SKIN (or hair): Take off immediately all contaminated clothing.
Rinse skin with water/shower.
P304 + P340 + P312
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313
IF exposed or concerned: Get medical advice/ attention.
P337 + P313
If eye irritation persists: Get medical advice/ attention.
P370 + P378
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233
Store in a well-ventilated place. Keep container tightly closed.
P403 + P235

Store in a well-ventilated place. Keep cool.
P405
Store locked up.
P501
Dispose of contents/ container to an approved waste disposal plant.
Hazards not otherwise classified (HNOC) or not covered by GHS
May form explosive peroxides.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
Formula: C4H8O
Molecular weight: 72.11 g/mol
CAS-No.: 109-99-9
EC-No.: 203-726-8

Synonyms: LAH
Formula: H4AlLi
Molecular weight: 37.95 g/mol
CAS-No.: 16853-85-3
EC-No.: 240-877-9

SECTION 4. FIRST AID MEASURES

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.
Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11
Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing media

Dry powder Dry sand
Unsuitable extinguishing media
Do NOT use water jet.
Special hazards arising from the substance or mixture
No data available
Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.
Further information
Use water spray to cool unopened containers.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.
Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
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).Sweep up and shovel. Contain spillage,
and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal.
Reference to other sections
For disposal see section 13.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment.
Keep away from sources of ignition -No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.
Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Dry residue is explosive.
Store under inert gas.
Test for peroxide formation periodically and before distillation.
Specific end use(s)
Apart from the
uses mentioned in section 1 no other specific uses are stipulated

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Components with workplace control parameters
Contains no substances with occupational exposure limit values.
Exposure controls
Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.
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.
Body Protection
Complete suit protecting against chemicals, Flame retardant 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 particle respirator type N100 (US) or type P3 (EN 143) 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 CEN (EU).
Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Appearance
Form: Liquid
Odor
No data available
Odor Threshold
No data available
pH
No data available
Melting point/freezing point
Melting point/range: No data available
Initial boiling point and boiling range
No data available
Flash point
No data available
Evaporation rate
No data available
Upper/lower flammability or explosive limits
No data available
Vapor pressure

No data available
Vapor density
No data available
Relative density
0.920 g/cm3
Water solubility
No data available
Partition coefficient: n-octanol/water
No data available
Auto-ignition temperature
No data available
Decomposition temperature
No data available
Viscosity
No data available
Explosive properties
No data available
Oxidizing properties
No data available
Other safety information
No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity
No data available
Chemical stability
Stable under recommended storage conditions.
Possibility of hazardous reactions
Vapours may form explosive mixture with air.
Conditions to avoid
Heat, flames and sparks.
Incompatible materials
Strong oxidizing agents, Acids
Hazardous decomposition products
Hazardous decomposition products formed under fire conditions.-Carbon oxides
Other decomposition products-No data available
In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity
LD50
Oral-Mouse-85 mg/kg
Remarks: Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Other changes.
Gastrointestinal:Ulceration or bleeding from stomach.
LC50
Inhalation-Mammal-70 mg/m3
Dermal: No data available

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
Carcinogenicity
IARC:
No component of this product present at levels greaterthan 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
Lithium and its compounds are possible teratogens by analogy to lithium carbonate which has equivocal human teratogenic data and positive animal teratogenic data.
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: Not available
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.,
Large doses of lithium ion have caused dizziness and prostration, and can cause kidney damage if sodium intake is limited. Dehydration, weight loss, dermatological effects, and thyroid disturbances have been reported. Central nervous system effects that include slurred speech, blurred vision, sensory loss, ataxia, and convulsions may occur. Diarrhea, vomiting, and neuromuscular effects such as tremor, clonus, and hyperactive reflexes may occur as a result of repeated exposure to lithium ion.
Liver-Irregularities-Based on Human Evidence
Liver-Irregularities-Based on Human Evidence

SECTION 12. ECOLOGICAL INFORMATION

Toxicity
No data available
Persistence and degradability
No data available
Bioaccumulative potential
No data available
Mobility in soil
No data available

Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

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.

SECTION 14. TRANSPORT INFORMATION

DOT (US)
UN number: 2056
Class: 3
Packing group: II
Proper shipping name: Tetrahydrofuran
Reportable Quantity(RQ): 1000 lbs
Poison Inhalation Hazard: No
IMDG
UN number: 2056
Class: 3
Packing group: II
EMS-No: F-E, S-D
Proper shipping name: TETRAHYDROFURAN
IATA
UN number: 2056
Class: 3
Packing group: II
Proper shipping name: Tetrahydrofuran

SECTION 15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components
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, Acute Health Hazard, Chronic Health Hazard
Massachusetts Right To Know Components
Tetrahydrofuran

CAS-No.
109-99-9
Revision Date
1993-04-24
Pennsylvania Right To Know Components
Tetrahydrofuran
CAS-No.
109-99-9
Revision Date
1993-04-24
Tetrahydrofuran
CAS-No.
109-99-9
Revision Date
1993-04-24
New Jersey Right To Know Components
Tetrahydrofuran
CAS-No.
109-99-9
Revision Date
1993-04-24
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.

SECTION 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.