

SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Name: Lithium tri-tert-butoxyaluminum Hydride Solution

Product Number: All applicable American Elements product codes, e.g. LI-OMX-01-SOL

CAS #: 17476-04-9

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
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Emergency telephone number:

+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

· Classification of the substance or mixture

GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.

GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.

GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

· Label elements

· GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).



· Hazard pictograms

GHS02d GHS07 GHS08

· Signal word Danger

· Hazard-determining components of labeling:

Tetrahydrofuran [109-99-9]

· Hazard statements

H225 Highly flammable liquid and vapor.

H319 Causes serious eye irritation.

H351 Suspected of causing cancer.

H335 May cause respiratory irritation.

· Precautionary statements

P231 Handle under inert gas.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/
shower.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present

and easy to do. Continue rinsing.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P422 Store contents under inert gas.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· Classification system:

· NFPA ratings (scale 0 - 4)

1

3

0

Health = 1

Fire = 3

Reactivity = 0

· HMIS-ratings (scale 0 - 4)

HEALTH

FIRE

REACTIVITY

*1

3

0

Health = *1

Fire = 3

Reactivity = 0

· Other hazards

· Results of PBT and vPvB assessment:

· PBT: N/A.

· vPvB: N/A.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

· Chemical characterization: Mixtures

· Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:

109-99-9 Tetrahydrofuran [109-99-9] 75.0%

17476-04-9 Lithium tri-t-butoxyaluminumhydride, 97% 25.0%

SECTION 4. FIRST AID MEASURES

· Description of first aid measures

· General information: Immediately remove any clothing soiled by the product.

- If inhaled: Supply fresh air; consult doctor in case of complaints.
- In case of skin contact: Immediately rinse with water.
- In case of eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

- If swallowed: If symptoms persist consult doctor.
 - Information for doctor:
 - Most important symptoms and effects, both acute and delayed No information available.
 - Indication of any immediate medical attention and special treatment needed
No information available.
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SECTION 5. FIREFIGHTING MEASURES

- Extinguishing media
 - Suitable extinguishing media:
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
 - For safety reasons unsuitable extinguishing media: Water with full jet
 - Special hazards arising from the substance or mixture No information available.
 - Advice for firefighters
 - Protective equipment: No special measures required.
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SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
 - Environmental precautions: Prevent seepage into sewage system, workpits and cellars.
 - Methods and material for containment and cleanup:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
 - Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
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SECTION 7. HANDLING AND STORAGE

- Handling: Handle under inert gas.
- Precautions for safe handling
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- Information about protection against explosions and fires:
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Keep respiratory protective device available.
- Conditions for safe storage, including any incompatibilities
- Storage: Store contents under inert gas.
- Requirements to be met by storerooms and receptacles: Store in a cool location.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions:

- Keep receptacle tightly sealed.
 - Store in cool, dry conditions in well sealed receptacles.
 - Specific end use(s) No information available.
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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
- Components with limit values that require monitoring at the workplace:
 - 109-99-9 Tetrahydrofuran [109-99-9]
 - PEL Long-term value: 590 mg/m³, 200 ppm
 - REL Short-term value: 735 mg/m³, 250 ppm
 - Long-term value: 590 mg/m³, 200 ppm
 - TLV Short-term value: 295 mg/m³, 100 ppm
 - Long-term value: 147 mg/m³, 50 ppm
- Skin
- Ingredients with biological limit values:
 - 109-99-9 Tetrahydrofuran [109-99-9]
 - BEI 2 mg/L
 - Medium: urine
 - Time: end of shift
 - Parameter: Tetrahydrofuran
- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment:
 - General protective and hygienic measures:
 - Keep away from foodstuffs, beverages and feed.
 - Immediately remove all soiled and contaminated clothing.
 - Wash hands before breaks and at the end of work.
 - Store protective clothing separately.
 - Avoid contact with the eyes.
 - Avoid contact with the eyes and skin.
 - Breathing equipment:
 - In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
 - Protection of hands:
 - Protective gloves
 - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
 - Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
 - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
 - Material of gloves
 - The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:
Tightly sealed goggles

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Information on basic physical and chemical properties
 - General Information
 - Appearance:
Form: Liquid
Color: Colorless
 - Odor: Ether-like
 - Odor threshold: No data available.
 - pH: No data available.
 - Melting point/range: Undetermined.
 - Boiling point/range: 66 °C (151 °F) (solvent)
 - Flash point: -17 °C (1 °F) (solvent)
 - Flammability (solid, gas): N/A.
 - Ignition temperature: 230 °C (446 °F)
 - Decomposition temperature: No data available.
 - Auto igniting: Product is not selfigniting.
 - Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
 - Explosion limits:
Lower: 1.5 Vol %
Upper: 12.0 Vol %
 - Vapor pressure at 20 °C (68 °F): 200 hPa (150 mm Hg)
 - Density: No data available.
 - Relative density No data available.
 - Vapor density No data available.
 - Evaporation rate No data available.
 - Solubility in / Miscibility with
Water: Not miscible or difficult to mix.
 - Partition coefficient (n-octanol/water): No data available.
 - Viscosity:
Dynamic: No data available.
Kinematic: No data available.
 - Solvent content:
Organic solvents: 75.0 %
VOC content: 75.0 %
750.0 g/l / 6.26 lb/gl
 - Other information No information available.
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SECTION 10. STABILITY AND REACTIVITY

- Reactivity No information available.
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

- Possibility of hazardous reactions No dangerous reactions known.
 - Conditions to avoid air and moisture
 - Incompatible materials: No information available.
 - Hazardous decomposition products: No dangerous decomposition products known.
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SECTION 11. TOXICOLOGICAL INFORMATION

- Information on toxicological effects
 - Acute toxicity:
 - LD/LC50 values that are relevant for classification:
109-99-9 Tetrahydrofuran [109-99-9]
Oral LD50 2500 mg/kg (rat)
 - Primary irritant effect:
 - on the skin: No irritant effect.
 - on the eye: Irritating effect.
 - Sensitization: No sensitizing effects known.
 - Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant
 - Carcinogenic categories
 - IARC (International Agency for Research on Cancer)
None of the ingredients is listed.
 - NTP (National Toxicology Program)
None of the ingredients is listed.
 - OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.
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SECTION 12. ECOLOGICAL INFORMATION

- Toxicity
 - Aquatic toxicity: No information available.
 - Persistence and degradability: No information available.
 - Behavior in environmental systems:
 - Bioaccumulative potential: No information available.
 - Mobility in soil: No information available.
 - Additional ecological information:
 - General notes: Not known to be hazardous to water.
 - Results of PBT and vPvB assessment:
 - PBT: N/A.
 - vPvB: N/A.
 - Other adverse effects No information available.
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SECTION 13. DISPOSAL CONSIDERATIONS

- Waste treatment methods
- Recommendation:
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packagings:

- Recommendation: Disposal must be made according to official regulations.
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SECTION 14. TRANSPORT INFORMATION

- UN-Number
 - DOT, IMDG, IATA UN2924
 - UN proper shipping name
 - DOT, IATA Flammable liquids, corrosive, n.o.s.
 - IMDG FLAMMABLE LIQUID, CORROSIVE, N.O.S.
 - Transport hazard class(es)
 - DOT
 - Class 3 Flammable liquids
 - Label 3, 8
 - IMDG
 - Class 3 Flammable liquids
 - Label 3/8
 - IATA
 - Class 3 Flammable liquids
 - Label 3 (8)
 - Packing group
 - DOT, IMDG, IATA II
 - Environmental hazards:
 - Marine pollutant: No
 - Special precautions for user Warning: Flammable liquids
 - EMS Number: F-E,S-C
 - Stowage Category B
 - Stowage Code SW2 Clear of living quarters.
 - Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code N/A.
 - Transport/Additional information:
 - DOT
 - Quantity limitations On passenger aircraft/rail: 1 L
On cargo aircraft only: 5 L
 - UN "Model Regulation": UN 2924 FLAMMABLE LIQUIDS, CORROSIVE, N.O.S., 3 (8), II
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SECTION 15. REGULATORY INFORMATION

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara
- Section 355 (extremely hazardous substances):
None of the ingredients is listed.
- Section 313 (Specific toxic chemical listings):
None of the ingredients is listed.
- TSCA (Toxic Substances Control Act):
All ingredients are listed.
- Proposition 65
- Chemicals known to cause cancer:
None of the ingredients is listed.
- Chemicals known to cause reproductive toxicity for females:
None of the ingredients is listed.
- Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

109-99-9 Tetrahydrofuran [109-99-9] SC

· TLV (Threshold Limit Value established by ACGIH)

109-99-9 Tetrahydrofuran [109-99-9] A3

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms

GHS02 GHS07 GHS08

· Signal word Danger

· Hazard-determining components of labeling:

Tetrahydrofuran [109-99-9]

· Hazard statements

H225 Highly flammable liquid and vapor.

H319 Causes serious eye irritation.

H351 Suspected of causing cancer.

H335 May cause respiratory irritation.

· Precautionary statements

P231 Handle under inert gas.

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shower.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present

and easy to do. Continue rinsing.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P422 Store contents under inert gas.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.