

SAFETY DATA SHEET

Date Printed: 05/12/2024

Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Identifier: (5N) 99.999% Lithium Aluminum Deuteride

Product Code: LIAL-HD-05

CAS Number: 14128-54-2

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

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Substances/mixtures which, in contact with water, emit flammable gases

Category 1

Skin Corrosion/irritation Category 1 A

Serious Eye Damage/Eye Irritation Category 1



Label Elements

Signal Word

Danger

Hazard Statements

In contact with water releases flammable gases which may ignite spontaneously

Causes severe skin burns and eye damage

Precautionary Statements

Prevention

Do not breathe dust/fume/gas/mist/vapors/spray

Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Keep away from any possible contact with water, because of violent reaction and possible flash fire
Handle under inert gas. Protect from moisture
Response
Immediately call a POISON CENTER or doctor/physician
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
Brush off loose particles from skin. Immerse in cool water/wrap with wet bandages
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Ingestion
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
Fire
In case of fire: Use CO₂, dry chemical, or foam for extinction
Storage
Store locked up
Store in a dry place. Store in a closed container
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
None identified

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component CAS-No Weight %
Lithium tetradeuteridoaluminate 14128-54-2 >95

SECTION 4. FIRST AID MEASURES

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention.
Inhalation Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Obtain medical attention.
Ingestion Clean mouth with water. Get medical attention.
Most important symptoms/effects Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation
Notes to Physician Treat symptomatically

SECTION 5. FIREFIGHTING MEASURES

Suitable Extinguishing Media Do not use a solid water stream as it may scatter and spread fire.

Unsuitable Extinguishing Media No data available

Flash Point No data available

Method - No data available

Autoignition Temperature No data available

Explosion Limits

Upper No data available

Lower No data available

Sensitivity to Mechanical Impact No data available

Sensitivity to Static Discharge No data available

Specific Hazards Arising from the Chemical

Flammable. Contact with water liberates toxic gas. Water reactive. Combustible material. Produce flammable gases on contact with water.

Hazardous Combustion Products

Burning produces obnoxious and toxic fumes

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health

3

Flammability

3

Instability

Physical hazards

W

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Ensure adequate ventilation. Use personal protective equipment.

Environmental Precautions See Section 12 for additional ecological information.

Methods for Containment and Clean

Up

Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

Sweep up or vacuum up spillage and collect in suitable container for disposal. Do not expose spill to water. Do not let this chemical enter the environment.

SECTION 7. HANDLING AND STORAGE

Handling Avoid contact with skin and eyes. Avoid contact with clothing. Avoid breathing vapors or mists. Do not ingest. Handle under inert gas, protect from moisture. Use explosion-proof equipment. Use only non-sparking tools. Do not allow contact with water because of violent reaction.

Storage Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition. Protect from moisture. Never allow product to get in contact with water during storage. Flammables area. Store under an inert atmosphere.

Keep away from water.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits

established by the region specific regulatory bodies.

Engineering Measures Use explosion-proof electrical/ventilating/lighting/equipment.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by

OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard

EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Powder

Appearance White

Odor Odorless

Odor Threshold No data available

pH No data available

Melting Point/Range 175 °C / 347 °F

Boiling Point/Range No data available

Flash Point No data available

Evaporation Rate No data available

Flammability (solid,gas) No data available

Flammability or explosive limits

Upper No data available

Lower No data available

Vapor Pressure No data available

Vapor Density No data available

Relative Density No data available

Solubility No data available

Partition coefficient; n-octanol/water No data available

Autoignition Temperature No data available

Decomposition Temperature No data available

Viscosity No data available

Molecular Formula Al D4 Li

Molecular Weight 41.98

SECTION 10. STABILITY AND REACTIVITY

Reactive Hazard Yes

Stability Hygroscopic.

Conditions to Avoid Keep away from open flames, hot surfaces and sources of ignition. Incompatible products.

Incompatible Materials Acids, Water, Strong oxidizing agents, Alcohols

Hazardous Decomposition Products Burning produces obnoxious and toxic fumes

Hazardous Polymerization No data available.

Hazardous Reactions Contact with water liberates extremely flammable gases.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

Toxicologically Synergistic

Products

No data available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No data available

Sensitization No data available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component CAS-No IARC NTP ACGIH OSHA Mexico

Lithium

tetradeteridoaluminat

e

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
14128-54-2	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No data available

Reproductive Effects No data available.

Developmental Effects No data available.

Teratogenicity No data available.

STOT - single exposure None known

STOT - repeated exposure None known

Aspiration hazard No data available

Symptoms / effects, both acute and delayed

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated.

Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Endocrine Disruptor Information No data available

Other Adverse Effects See actual entry in RTECS for complete information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Do not empty into drains.

Persistence and Degradability No data available

Bioaccumulation/ Accumulation No data available.

Mobility No data available.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14. TRANSPORT INFORMATION

DOT
UN-No UN1410
Hazard Class 4.3
Packing Group I
TDG
UN-No UN1410
Hazard Class 4.3
Packing Group I
IATA
UN-No 1410
Proper Shipping Name LITHIUM ALUMINIUM HYDRIDE
Hazard Class 4.3
Packing Group I
IMDG/IMO
UN-No 1410
Proper Shipping Name LITHIUM ALUMINIUM HYDRIDE
Hazard Class 4.3
Packing Group I

SECTION 15. REGULATORY INFORMATION

International Inventories
Component TSCA DSL NDSL EINECS ELINCS NLP PICCS ENCS AICS IECSC KECL
Lithium
tetra-deuteridoaluminate
- - - 237-980-6 - - - X - -
Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base
Production and Site Reports (40 CFR 710(B)).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants

that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) N/A

SARA 313 N/A

SARA 311/312 Hazardous Categorization

Acute Health Hazard Yes

Chronic Health Hazard No

Fire Hazard No

Sudden Release of Pressure Hazard No

Reactive Hazard Yes

Clean Water Act N/A

Clean Air Act N/A

OSHA Occupational Safety and Health Administration

N/A

CERCLA

N/A

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know N/A

U.S. Department of Transportation

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No data available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and

the MSDS contains all the information required by the CPR

WHMIS Hazard Class B6 Reactive flammable material

E Corrosive material

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.