



LITHIUM ALUMINUM HYDRIDE (LAH) 2.4M IN THF

CAS No. 16853-85-3

OS-PDS-006 Revision: 01

Product Names Lithium Aluminum Hydride, LAH

Formula LiAlH₄

Appearance Grey, slightly turbid solution

Application Lithium aluminum hydride is a versatile reducing agent, with excellent solubility in ethereal solvents. It is widely employed for reductions of aldehydes, ketones, esters, amides and nitriles. For leading references, consult M. Fieser, *Reagents for Organic Synthesis, Vol. 14, 1989* John Wiley & Sons, p. 190.

Product Specification

| | |
|--------------------------|---|
| Lithium Aluminum Hydride | <u>Guaranteed*</u> 2.4 +/- 0.2 M (10 wt.%) |
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**This product can be made to agreed upon customer specifications.*

Solvent Tetrahydrofuran (THF)

Physical Properties

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|------------------------------------|--------------------------|
| Molecular weight | 37.95 |
| Density @20°C | 0.905 g/mL (7.55 lb/gal) |
| Contained lithium aluminum hydride | 90 g/L (0.76 lb/gal) |
| Boiling point | 66 – 67°C (THF) |
| Pyrophoricity | Non-pyrophoric |

Solubility Reacts with water or protic solvents to liberate hydrogen gas.

Thermal Stability LAH solutions in THF, with exclusion of air and moisture, decompose at a rate of ~0.06% per month at 20°C.



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Toxicity/Safety Data Flammable liquid. Water reactive. In case of fire do not use water or carbon dioxide. Corrosive to the eyes (may cause blindness), skin, mucous membranes and upper respiratory tract. Inhalation of vapors may cause dizziness, nausea, anesthesia, numbness, motor weakness in fingers and toes, incoordination, and headache.

COMPLETE INFORMATION ON TOXICITY AND SAFETY IS CONTAINED IN THE FMC MATERIAL SAFETY DATA SHEET (MSDS) AVAILABLE FOR THIS PRODUCT.

Handling/Storage/Disposal Use in a closed system under argon or nitrogen. Do not get in eyes, on skin or clothing. Do not breathe vapors or mist. Store in a cool place. Keep container closed. Keep away from sources of ignition, water, air, acids and oxidizing agents.

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| Shipping Containers | Bulk containers | 2500 – 20000 L |
| | Cylinders | #5 – 420 L |
| | Glass bottles | 125 mL, 500 mL and 1 L |

Shipping Limitations Shipments of LAH solutions are described as "LITHIUM ALUMINUM HYDRIDE, ETHEREAL, 4.3 (3), UN1411, PG I." Shipments require "Dangerous When Wet" and "Flammable" labels.

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|-------------------|------------------------------|
| Post, Parcel, Air | Not acceptable |
| Sea | Class 4.3 (3) (IMDG) |
| Road, Rail | Class 4.3 (3) (DOT, RID/ADR) |

For shipments within Europe, labeling for supply requirements are:

| | |
|-------------|--------------------------------|
| F | Highly Flammable |
| C | Corrosive |
| R&S Phrases | See Material Safety Data Sheet |

Responsible Care® initiative dictates that all shipments of lithium chemicals must be transported in a DOT-approved vehicle in a responsible manner (i.e., no flat bed trucks).

Additional Resources Refer to the Organometallics and Reactive Specialty Organics Safe Handling Guide.