



LITHIUM HEXAMETHYLDISILAZIDE (LHS) 25% IN THF

CAS No. 4039-32-1

QS-PDS-010 Revision: 02

Product Names Lithium hexamethyldisilazide, Lithium bis-trimethylsilylamide, LHS

Formula $[(CH_3)_3Si]_2 N-Li$

Appearance Yellow to brown solution

Application LHS is a *non-pyrophoric* strong base, widely employed in organic synthesis as a metalation agent. The principle advantages of this reagent are the improved selectivity obtained in deprotonation reactions and the enhanced thermal stability. It is employed as a base in generating enolates for the preparation of lactone precursors. (1) *J.Org. Chem.* **1993**, 58, 7304. (2) *Synlett* **1993**, 507. (3) *Tetrahedron* **1994**, 50, 9061. LHS is offered in THF solution and therefore, is very easy to transfer from shipping container to storage or a reactor. LHS is a more stable base than LDA or lithium diisopropylamide, which is also available from FMC.

Product Specification

	<u>Guaranteed*</u>
Lithium hexamethyldisilazide, wt%	22.8 – 26.6
2-methyl-2-butene, wt%	7 max

**This product can be made to agreed upon customer specifications.*

Solvent

	<u>Typical</u>
THF, wt%	66

Physical Properties

Molecular weight	167.33
Density @20°C	0.88g/mL (7.34 lb/gal)
Contained LHS	211.2g/L (1.76 lb/gal)
Pyrophoricity	Non-pyrophoric

Solubility

The 1.3 M LHS solution in THF is soluble in liquid aliphatic and aromatic hydrocarbons, ethers, and tertiary amines. An LHS-THF complex will slowly precipitate at low temperatures (< -20°C) after several days; however, the complex will readily redissolve at room temperature.

Thermal Stability

LHS in THF is very stable at room temperature, < 0.0001 wt. % loss per day. At 40°C, solutions could slowly become hazy with little detectable decomposition. The accidental introduction of oxygen into LHS may cause darkening of color, but does not appear to affect performance.



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Toxicity/Safety Data Flammable liquid. Water reactive. In case of fire do not use water or carbon dioxide. Corrosive to eyes, skin, mucous membranes, upper respiratory tract. Possible carcinogen: Contains isoprene. Inhalation of vapors may cause dizziness, nausea, anesthesia, numbness, motor weakness in fingers and toes, incoordination, and headache. If ingested, may produce a lung aspiration hazard.

COMPLETE INFORMATION ON TOXICITY AND SAFETY IS CONTAINED IN THE OPTIMA 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.

Shipping Containers	Bulk containers	2000 – 20000 L
	Cylinders	#20
	Drums	55 gallon
	Glass bottles	125 mL, 500 mL, and 1 L

Shipping Limitations Shipments of LHS are described as "Flammable Liquid, Corrosive, N.O.S., (LITHIUM HEXAMETHYLDISILAZIDE IN TETRAHYDROFURAN), 3 (8), UN2924, PGII." Shipments require "Flammable Liquid" and "Corrosive" labels.

Post, Parcel	Not acceptable
Sea	Class 3 (8) (IMDG)
Road, Rail (USA)	Class 3 (8) (DOT)
Road, Rail (EU)	Class 3 (8) (RID/ADR)
Air	Class 3 (8) (IATA)
	2.5 L maximum per inner glass container.
	5.0 L maximum per single/outer container.
	Cargo aircraft only.

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 available on-line at www.fmclithium.com.