

Product Names Lithium hexamethyldisilazide, Lithium bis-trimethylsilylamide, LHS

Formula $[(\text{CH}_3)_3\text{Si}]_2\text{N-Li}$

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 as a THF solution, and is therefore simple to transfer from the shipping container to a reactor or storage vessel. LHS is a more stable base than lithium diisopropylamide (LDA).

Product Specification

	<u>Guaranteed*</u>
Lithium hexamethyldisilazide, wt%	18.0 – 24.5
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	0.88 g/mL (7.34 lb/gal)
Contained LHS	211.2 g/L (1.76 lb/gal) for 24 wt% soln
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 under a dry inert atmosphere. At 40°C, solutions could slowly become hazy with little detectable decomposition. Incidental exposure of LHS solution to oxygen may cause darkening of color.

Toxicity/Safety Data Highly flammable liquid and vapour. Causes severe skin burns and eye damage. Harmful if swallowed, in contact with skin or if inhaled. May be fatal if swallowed and enters airways. May cause respiratory irritation. May cause drowsiness or dizziness. Suspected of causing cancer. Suspected of causing genetic defects. Harmful to aquatic life with long lasting effects.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

Handling/Storage/Disposal KEEP AWAY FROM WATER, AIR AND OXIDIZING MATERIALS. Wear full face protection and gloves. Use in a closed system under argon or nitrogen. Keep away from heat, sparks and flame. Protect storage container from leaks and physical damage.

Shipping Containers	Bulk containers	2000 – 20000 L
	Cylinders	#20, #100, #420
	Drums	55 gallon
	Glass bottles	125 mL, 500 mL, and 1 L

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