



>>Entry Name: Lithium bis(trimethylsilyl)amide

Synonym(s): Bis(trimethylsilyl)amine lithium salt. LTSA. 1,1,1-Trimethyl-*N*-(trimethylsilyl)silanamine lithium salt, 9CI. Lithium hexamethyldisilazide

CAS Registry Number: 4039-32-1

Extra CAS Registry Numbers(s): 24323-78-2

$\text{LiN}(\text{SiMe}_3)_2$

Molecular Formula: $\text{C}_6\text{H}_{18}\text{LiNSi}_2$

Molecular Weight: 167.327

Accurate Mass: 167.113781

Percentage Composition: C 43.07%; H 10.84%; Li 4.15%; N 8.37%; Si 33.57%

Potassium bis(trimethylsilyl)amide [KBX75-V](#)

Source/Synthesis: Synth. from $(\text{Me}_3\text{Si})_2\text{NH} + \text{BuLi}$

Use/Importance: Commercially available as solid or as soln. (1*M*) in hexane or THF. Rel. non-nucleophilic strong base, esp. for enolate formn.; used in stereoselective Claisen rearrangement of ester enolates; converts aldehydes into silylimines which react with lithium ester enolates $\rightarrow$ β -lactams; used in synth. of glycidic esters; used for selective cleavage of aryl alkyl ethers

Physical Description: Solid (by subl.)

Melting Point: Mp 71-72°

Boiling Point: $\text{Bp}_{0.01}$ 80-84°

Solubility: Sol. THF, hexane

Hazard & Toxicity: Flammable

Aldrich: 22577-0

Fluka: 62447

>>Derivative: Dimer

CAS Registry Number: 97587-69-4

Molecular Formula: $\text{C}_{12}\text{H}_{36}\text{Li}_2\text{N}_2\text{Si}_4$

Molecular Weight: 334.654

Accurate Mass: 334.227562

Percentage Composition: C 43.07%; H 10.84%; Li 4.15%; N 8.37%; Si 33.57%

>>Derivative: Dimer, bis-Et₂O complex

Synonym(s): Bis[μ -bis(trimethylsilyl)amido(diethyl ether)lithium]

CAS Registry Number: 84040-90-4

Molecular Formula: $\text{C}_{20}\text{H}_{56}\text{Li}_2\text{N}_2\text{O}_2\text{Si}_4$

Molecular Weight: 482.899

Accurate Mass: 482.373892

Percentage Composition: C 49.75%; H 11.69%; Li 2.87%; N 5.80%; O 6.63%; Si 23.26%

Physical Description: Tetragonal cryst. (Et₂O)

Melting Point: Mp 105-107°

>>Derivative: Dimer, bis-THF complex

CAS Registry Number: 105690-70-8

Molecular Formula: $\text{C}_{20}\text{H}_{52}\text{Li}_2\text{N}_2\text{O}_2\text{Si}_4$

Molecular Weight: 478.867

Accurate Mass: 478.342592

Percentage Composition: C 50.16%; H 10.94%; Li 2.90%; N 5.85%; O 6.68%; Si 23.46%

Physical Description: White tetragonal cryst.

Melting Point: Mp 136-138°

>>Derivative: TMED complex (1:1)

CAS Registry Number: 161067-23-8

Molecular Formula: $\text{C}_{12}\text{H}_{13}\text{LiN}_3\text{Si}_2$

Molecular Weight: 262.367

Accurate Mass: 262.080804

Percentage Composition: C 54.94%; H 4.99%; Li 2.65%; N 16.02%; Si 21.41%

Source/Synthesis: Synth. from a hexane soln. of the parent and TMED

Physical Description: Cryst. (hexane)

>>Derivative: 12-Crown-4 complex (1:1)