



>>Entry Name: Lithium diisopropylamide

Synonym(s): *N*-(1-Methylethyl)-2-propanamine lithium salt, 9Cl. Bis(1-methylethyl)aminolithium. Diisopropylamine lithium salt. *N*-Lithiodiisopropylamine. LDA

CAS Registry Number: 4111-54-0

$\text{LiN}(\text{CHMe}_2)_2$

Molecular Formula: $\text{C}_6\text{H}_{14}\text{LiN}$

Molecular Weight: 107.124

Accurate Mass: 107.128627

Percentage Composition: C 67.27%; H 13.17%; Li 6.48%; N 13.08%

Source/Synthesis: Synth. from Pr_2NH and BuLi, or Li in presence of electron carrier

Use/Importance: V. useful, relatively non-nucleophilic strong base used for generation of carbanions. Can function as single electron donor or as hydride donor.

Commercially available as solid, suspended in hexanes (10 wt%), and as stabilised solns. in THF-hydrocarbon mixt.

Physical Description: Almost colourless cryst.

Solubility: Sol. ethers; insol. or spar. sol. hydrocarbons

Other Data: Cleaves ethers rapidly at 0° or above, but solns. in eg. THF-cyclohexane, 1:1 are much more stable

Hazard & Toxicity: Pyrophoric; corrosive

Aldrich: 47143-7

Fluka: 62491

>>Derivative: TMED complex (2:1)

Physical Description: Monoclinic cryst (TMED/hexane)

Other Data: Cryst. as polymer of dimers, with bridging TMED

>>Derivative: LiCl, TMED complex (2:1:2)

Molecular Formula: $\text{C}_{24}\text{H}_{60}\text{ClLi}_3\text{N}_6$

Molecular Weight: 489.054

Percentage Composition: C 58.94%; H 12.37%; Cl 7.25%; Li 4.26%; N 17.18%

Physical Description: Pale yellow monoclinic cryst. (toluene or hexane)

Melting Point: Mp 69.5-70°

>>Derivative: THF complex (2:2)

CAS Registry Number: 123333-84-6

Molecular Formula: $\text{C}_{20}\text{H}_{44}\text{Li}_2\text{N}_2\text{O}_2$

Molecular Weight: 358.462

Percentage Composition: C 67.01%; H 12.37%; Li 3.87%; N 7.81%; O 8.93%

Physical Description: Monoclinic cryst. (pentane or hexane + small excess THF)

>>Derivative: Dimer, complex with lithium enolate of 3,3-dimethyl-5-(dimethyl-*tert*-butylsilyloxy)pentan-2-one

Synonym(s): Bis[μ_3 -[5-[(1,1-dimethylethyl)dimethylsilyl]oxy]-3,3-dimethyl-1-penten-2-olato- $O^1:O^1:O^1,O^5$]]bis[μ -[*N*-(1-methylethyl)-2-propanaminato]]tetralithium

CAS Registry Number: 110015-47-9

Molecular Formula: $\text{C}_{38}\text{H}_{82}\text{Li}_4\text{N}_2\text{O}_4\text{Si}_2$

Molecular Weight: 715.012

Accurate Mass: 714.645324

Percentage Composition: C 63.83%; H 11.56%; Li 3.88%; N 3.92%; O 8.95%; Si 7.86%

Physical Description: Large transparent cryst. (heptane)

>>Derivative: Lithium bis(dimethylaminomethyl)methoxide complex (2:2)

Synonym(s): Bis[μ_3 -[1,3-bis(dimethylamino)-2-propanolato-*N,O:N',O:O*]]bis[μ -[*N*-(1-methylethyl)-2-propanaminato]]tetralithium, 13Cl

CAS Registry Number: 167166-50-9

Molecular Formula: $\text{C}_{26}\text{H}_{62}\text{Li}_4\text{N}_6\text{O}_2$

Molecular Weight: 518.579

Accurate Mass: 518.557436

Percentage Composition: C 60.22%; H 12.05%; Li 5.35%; N 16.21%; O 6.17%

Physical Description: Colourless monoclinic cryst. (pentane)

References: