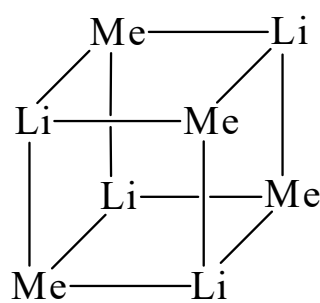




>>Entry Name: Methyllithium, 9Cl, 8Cl

Synonym(s): Lithium methyl. Lithiomethane



tetramer

CAS Registry Number: 917-54-4

Related CAS Registry Numbers(s): 15772-82-4 74309-23-2 113859-42-0 113859-43-1 124177-28-2

Molecular Formula: CH_3Li

Molecular Weight: 21.976

Accurate Mass: 22.039478

Percentage Composition: C 54.66%; H 13.76%; Li 31.58%

Source/Synthesis: Synth. by reaction of halomethanes with Li

Use/Importance: Commercially available reagent for org. and organomet. synth. Adds to ketones; reacts with carboxylic acids $\rightarrow$ ketones; reagent for equatorial methylation of cyclohexanones; adds to nitriles $\rightarrow$ methyl ketones on hydrol.; couples with vinyl halides in presence of catalytic Pd(0); converts *gem*-dihalocyclopropanes to carbenes; reagent for reductive methylation of aromatic carbonyl compds. with Li wire then NH_4Cl ; used to generate Li enolates from enol acetates, silyl enol ethers; adds to isocyanates $\rightarrow$ acetamides; used in synth. of alkynes

Hazard & Toxicity: Spontaneously flammable in air

Aldrich: 34770-1

Fluka: 67740

Sigma: M7764

>>Derivative: Dimer

CAS Registry Number: 74309-22-1

Molecular Formula: $\text{C}_2\text{H}_6\text{Li}_2$

Molecular Weight: 43.951

Accurate Mass: 44.078956

Percentage Composition: C 54.66%; H 13.76%; Li 31.58%

>>Derivative: Trimer

CAS Registry Number: 74316-42-0

Molecular Formula: $\text{C}_3\text{H}_9\text{Li}_3$

Molecular Weight: 65.927

Accurate Mass: 66.118434

Percentage Composition: C 54.66%; H 13.76%; Li 31.58%

>>Derivative: Tetramer

Synonym(s): Tetra- μ_3 -methyl-*tetrahedro*-tetralithium, 9Cl

CAS Registry Number: 20670-26-2

Molecular Formula: $\text{C}_4\text{H}_{12}\text{Li}_4$

Molecular Weight: 87.903

Accurate Mass: 88.157912

Percentage Composition: C 54.66%; H 13.76%; Li 31.58%

Physical Description: White microcryst.

Solubility: Insol. hydrocarbons; sol. ethers

Other Data: Forms complexes with lithium halides, ethers. Dec. $> ca.$ 200° giving Dilithiomethane [FRK94-S](#)

>>Derivative: THF complex (4:4)

CAS Registry Number: 148050-33-3

Molecular Formula: $\text{C}_{20}\text{H}_{44}\text{Li}_4\text{O}_4$

Molecular Weight: 376.329

Accurate Mass: 376.387972

Percentage Composition: C 63.83%; H 11.78%; Li 7.38%; O 17.01%

Physical Description: Monoclinic cryst. (cumene/THF at low temp.)