Alkyl lithium reagent

To make organolithium reagents, we start with alkyl halides, and add powdered lithium metal (Li or sometimes written as Li 0 to distinguish it from the ion Li (+)).

For alkyl lithium formation pentane or hexane are usually used. Diethyl ether can also be used but the subsequent alkyl lithium reagent must be used immediately after preparation due to an interaction ...

Alkyllithium reagents represent one of the most commonly used organometallic compounds. The wide range of applications results mostly from their ability to react as Brønsted ...

Organolithium compounds are typically prepared by the direct reaction of alkyl or aryl halides with metallic lithium, often carried out in anhydrous and inert solvents such as ether or tetrahydrofuran.

OverviewReactivity and applicationsHistory and developmentStructureOrganolithium reagents in asymmetric synthesisPreparationHandlingFurther readingThe C-Li bond in organolithium reagents is highly polarized. As a result, the carbon attracts most of the electron density in the bond and resembles a carbanion. Thus, organolithium reagents are strongly basic and nucleophilic. Some of the most common applications of organolithium reagents in synthesis include their use as nucleophiles, strong bases for deprotonation, initiator for polymerization, and starting material for t...

The major drawback of a technique utilizing reactions between organic substrates and lithium vapor lies in the separation of a mixture of lithium-substituted hydrocarbons.

Formation of Alkyl Lithium and Grignard Reagents. The alkali metals (Li, Na, K etc.) and the alkaline earth metals (Mg and Ca, together with Zn) are good reducing agents, the former being stronger than ...

This page by Professor Hans Reich (UW-Madison) describes some organolithium reagents commonly used in Organic Chemistry. It also provides the starting compounds as well as typical ...

Alkyl lithium reagent

Addition of lithium metal (2 equivalents) to an alkyl or alkenyl halide results in the formation of the organolithium reagents. Organolithium reagents have a formula RLi where R can be alkyl, aryl, allyl, ...

Oxathiolanes and 1,3-dioxolanes containing a 2- phenyl substituent react with alkyl-lithium reagents to produce aryl alkyl ketones and alkenes (65JOC226). The mechanism of this reaction is discussed in ...

Metalation with organolithium reagents, also known as lithiation or lithium-hydrogen exchange, is achieved when an organolithium reagent, most commonly an alkyllithium, abstracts a proton and ...

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