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Organolithium Reagents

Organometallic compounds are amongst the most often used reagents in organic synthesis and organolithium compounds are widely used as very strong bases, nucleophiles and reagents for metallations.

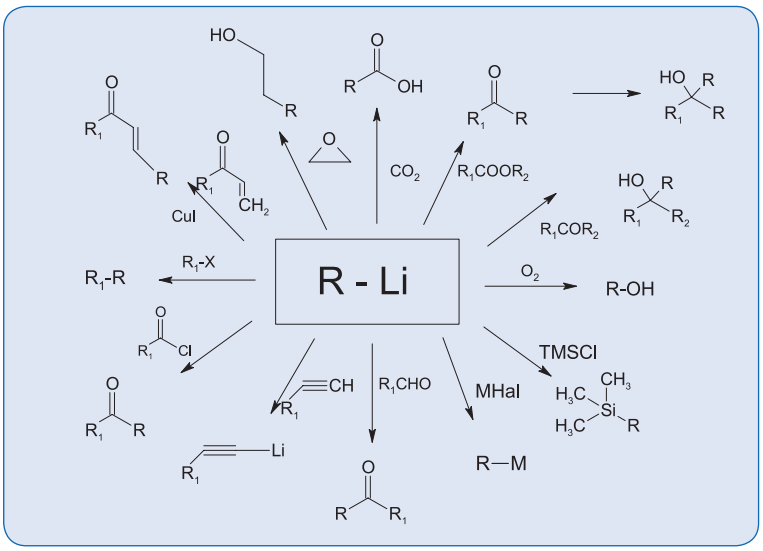
The most common members of the alkyllithium family are n-Butyllithium, Methyllithium and tert-Butyllithium and these are widely used in organic synthesis. Some of their applications are given below:

- Metallation
  Many hundreds of functionalised organolithium compounds have been prepared by the metallation reaction with n-Butyllithium or other alkyllithium compounds.

R-H + n-Butyl-Li → R-Li + Butane

- Ortho-metallation
  Metallation of an aromatic ring near a substituent, which acts as a "directed metalation group", is called ortho-metallation.

- Nucleophilic addition and substitution
  Stabilized organolithium compounds like enolates and sulfonyl carbanions can react as nucleophiles with alkyl-halogenides and carbonyl-compounds in a wide range of reactions:
  - Alkylation of Alkyl-halogenides
  - Addition to Carbonyl-compounds[1]
  - Alkylation of Allyl-halogenides
  - Epoxide-Ring Opening[2]
  - Conjugate Addition[3]
  - Addition to Carbon dioxide[4]



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- Halogen-Metal exchange
  The Halogen-metal exchange reaction was discovered in the late 1930s by Gilman[5] and Wittig[6]. The reaction is often used to prepare vinyl- and aryllithium compounds from the more reactive alkyllithium species[7].

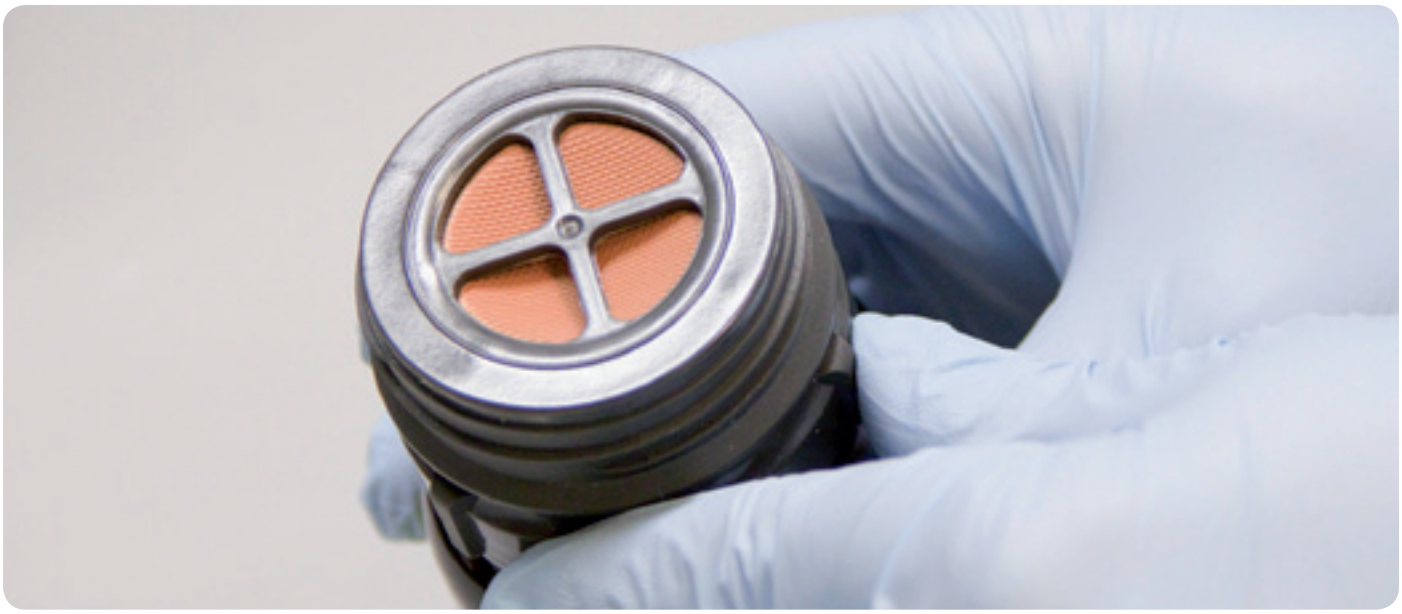
- Transmetallation
  The organolithium compounds are very often used to prepare other metallorganic compounds through the transmetallation reaction:

$$R\text{-}Li + M\text{-}X \rightarrow R\text{-}M + Li\text{-}X$$
(M = Metal ion, X = Halide)

  This reaction has been used to prepare the important organo-copper[8, 9, 10] (A) and organo-titanium[11] (B) and many other metalorganic compounds[12] which have often higher selectivity than the organolithium compounds.

- Anionic Polymerisation
  A major industrial use of alkyllithium compounds, specifically n-Butyllithium, is the catalysis of the anionic polymerization of butadiene[13], isoprene and styrene.

In reactions involving organolithium reagents it is essential to exclude water and air, which rapidly destroy the reagent. Therefore, we provide these sensitive reagents in the industry-leading AcroSeal® packaging, preventing the degradation of the reagents.



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Organolithium Compounds

AC377491000	Acros Organics	n-Butyllithium, 2.2M solution in cyclohexane, AcroSeal®	100ML	109-72-8
AC377498000			800ML	
AC213351000	Acros Organics	n-Butyllithium, 2.5M solution in hexanes, AcroSeal®	100ML	109-72-8
AC213358000			800ML	
AC181271000	Acros Organics	n-Butyllithium, 1.6M solution in hexanes, AcroSeal®	100ML	109-72-8
AC181275000			500ML	
AC181278000			800ML	
AC378931000	Acros Organics	n-Butyllithium, 2.7M solution in toluene, AcroSeal®	100ML	109-72-8
AC378938000			800ML	
AC187541000	Acros Organics	sec-Butyllithium, 1.3M sol. in cyclohexane/hexane (92/8), AcroSeal®	100ML	598-30-1
AC187548000			800ML	
AC396541000	Acros Organics	tert-Butyllithium, 1.9M solution in pentane, AcroSeal®	100ML	594-19-4
AC396548000			800ML	
AC445921000	Acros Organics	tert-Butyllithium, 2M (18%) solution in heptane, AcroSeal®	100ML	594-19-4
AC301651000	Acros Organics	n-Hexyllithium, 33 wt.% solution in n-hexane, AcroSeal®	100ML	21369-64-2
AC301658000			800ML	
AC377591000	Acros Organics	Isobutyllithium, 1.6M solution in heptane, AcroSeal®	100ML	920-36-5
AC181250500	Acros Organics	Lithium acetylide ethylenediamine complex, 85%	50GR	6867-30-7
AC181251000			100GR	
AC268831000	Acros Organics	Lithium diisopropylamide, 2M sol. in THF/n-heptane/ethylbenzene, AcroSeal®	100ML	4111-54-0
AC268838000			800ML	
AC432871000	Acros Organics	Lithium diisopropylamide mono(tetrahydrofuran), 1.5M solution in cyclohexane, AcroSeal®	100ML	123333-84-6
AC432878000			800ML	
AC380651000	Acros Organics	Lithium (trimethylsilyl)acetylide, 0.5M solution in THF/hexanes, AcroSeal®	100ML	54655-07-1
AC380658000			800ML	

AC188751000	Acros Organics	Methyllithium, 1.6 M sol. in diethyl ether (± 5% w/v), AcroSeal®	100ML	917-54-4
AC188758000			800ML	
AC181291000	Acros Organics	Methyllithium lithium bromide complex, 2.2M sol. in diethylether, AcroSeal®	100ML	332360-06-2
AC181298000			800ML	
AC445841000	Acros Organics	Methyllithium, 3% solution in 2-MeTHF/cumene, AcroSeal®	100ML	917-54-4
AC445848000			800ML	
AC377451000	Acros Organics	(Trimethylsilyl)methyllithium, 0.7M (10 wt%) solution in hexanes, AcroSeal®	100ML	1822-00-0

If you would like to know more about our extensive range of organolithium reagents, download the full product brochure from www.acros.com

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