

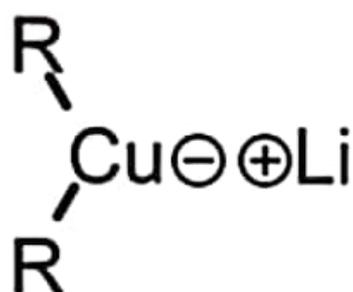
**Dimethylcadmium** is one of numerous organo-metallic compounds sold by American Elements under the trade name [AE Organo-Metallics™](#) for uses requiring non-aqueous solubility such as recent [solar energy](#) and [water treatment](#) applications. Similar results can sometimes also be achieved with [Nanoparticles](#) and by [thin film](#) deposition. Note American Elements additionally supplies many materials as [solutions](#).

Dimethylcadmium is generally immediately available in most volumes. High purity, submicron and nanopowder forms may be considered.

Additional technical, research and safety information is available.

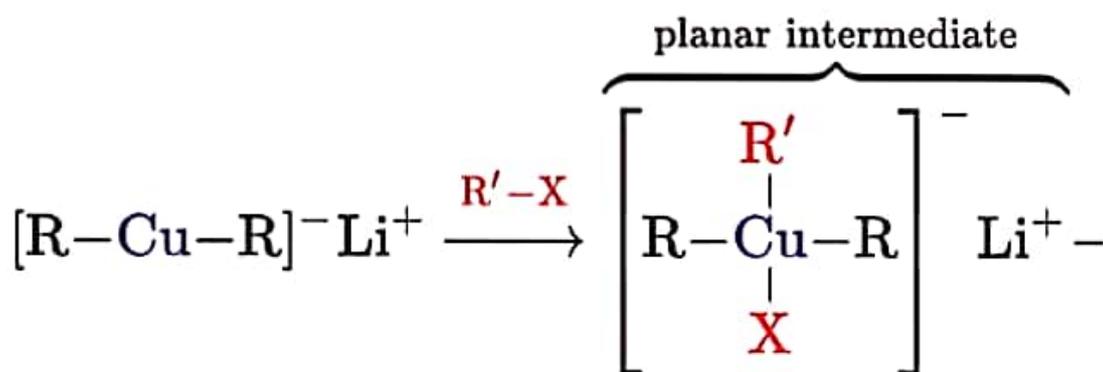
**Dimethylzinc**, also known as **Zinc** methyl, DMZ, or DMZn is a colorless volatile liquid  $\text{Zn}(\text{CH}_3)_2$ , formed by the action of methyl iodide on **zinc** at elevated temperature or on **zinc** sodium alloy.  $2\text{Zn} + 2\text{CH}_3\text{I} \rightarrow \text{Zn}(\text{CH}_3)_2 + \text{ZnI}_2$ . The sodium assists the reaction of the **zinc** with the methyl iodide.

# Gilman reagent



General structure of  
a Gilman reagent

A **Gilman reagent** is a lithium and copper (diorganocopper) reagent compound,  $\text{R}_2\text{CuLi}$ , where R is an alkyl or aryl. These reagents are useful because, unlike related Grignard reagents and organolithium reagents, they react with organic halides to replace the halide group with an R group (the Corey–House reaction). Such displacement reactions allow for the synthesis of complex products from simple building blocks.<sup>[1]</sup>



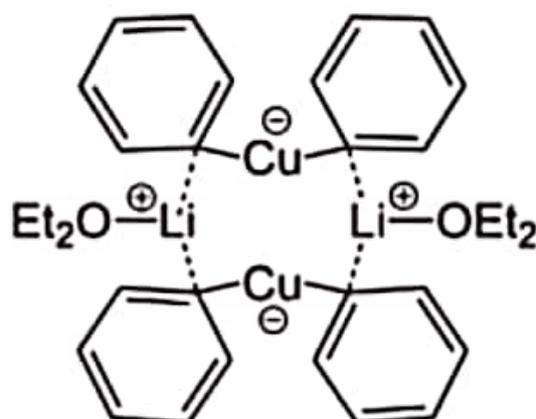
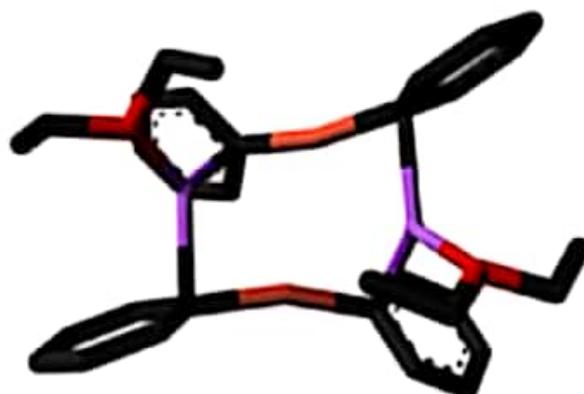
Generalized chemical reaction showing Gilman reagent reacting with organic halide to form products and showing Cu(III) reaction intermediate

# ^ Structure



Lithium dimethylcuprate exists as a **dimer** in **diethyl ether** forming an 8-membered ring.

Similarly, lithium diphenylcuprate crystallizes as a dimeric etherate,  $[\{\text{Li}(\text{OEt}_2)\}(\text{CuPh}_2)]_2$ .<sup>[4]</sup>



If the  $\text{Li}^+$  ions is complexed with the **crown ether** **12-crown-4**, the resulting diorganylcuprate anions adopt a linear **coordination geometry** at copper.<sup>[5]</sup>

