

thermo scientific

$\text{Pd}(\text{OAc})_2$ (5 mol%)
+ $\text{Bu}_2\text{PCH}_2\text{HBF}_4$
 K_2CO_3 , DMA, 120°C

Other chemical formulas visible in the background include: $\text{C}_4\text{H}_{11}\text{BO}$ (1M), $\text{Zn}(\text{CH}_3)_2$ (1.2M), $(\text{CH}_3)_3\text{COK}$ (20 wt.%), $\text{Bu}_2\text{PCH}_2\text{HBF}_4$, BCl_3 (1M), $\text{CH}_2=\text{CHMgCl}$ (25 wt.%), HCl (4N), NaBH_4 , $\text{Zn}(\text{CH}_3)_2$ (1.2M), $\text{C}_7\text{H}_{15}\text{AlO}_2$, and $\text{C}_6\text{H}_5\text{Li}$ (2.5M).

Chemicals

Organometallics

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Organometallics

Organometallics are among the most widely used compounds in modern organic chemistry. With diverse applications ranging from homogenous catalysts to stoichiometric reagents, they continue to play a vital role in today's chemical research and industry.

Grignard and organozinc reagents

One of the most significant applications of organometallic compounds is their use in the formation of new carbon–carbon bonds. Due to a difference in polarity within the metal–carbon bond, both Grignard reagents and organozincs (specifically organozinc halides) are an excellent source of nucleophilic carbon atoms. These nucleophilic carbon atoms can then react with electrophilic carbon to produce a new carbon–carbon bond. This is a very convenient means of preparing organic compounds from smaller precursor molecules.

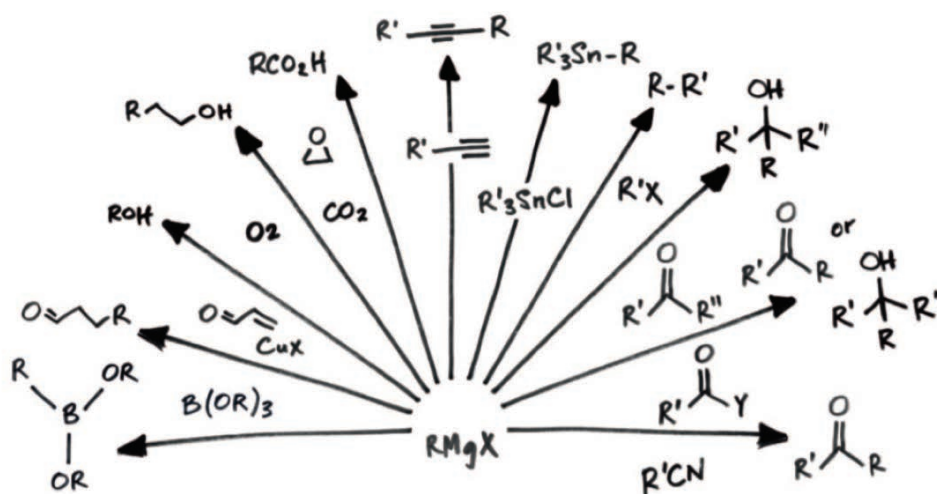


Diagram of Grignard reactions

In these carbon–carbon bond-forming reactions, organozincs are less reactive than Grignard reagents. This can be advantageous for certain sensitive reactions because it allows for higher functional group tolerance. However, this low reactivity means that organozincs often need to be aided by additives or catalysts.

Both Grignard and organozinc reagents are employed in chemical reactions that are highly sensitive to the conditions and chemicals used, so the need for quality organometallic reagents is crucial. If inferior reagents are used, reactions may fail or not go to completion, and product yields will suffer as a result. Furthermore, with complex stereochemical syntheses, it is vital that the appropriate reagents are used to minimize the potential for racemic mixtures.

Thermo Scientific brand includes Grignard and organozinc reagents of exceptional quality and variation to give consistent stereochemical and high-yield results, and to ultimately help researchers reach their goals.

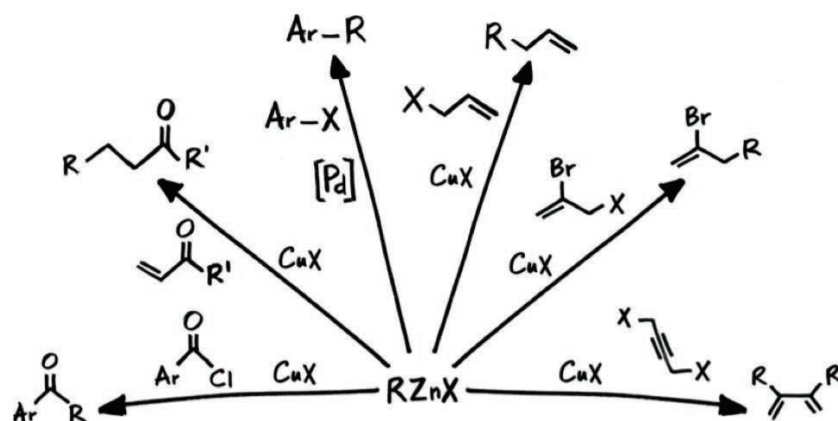


Diagram of Organozinc reactions

Other organometallic reagents

Due to the electropositive character of their metals, many organometallic compounds are highly reactive, and are vital in many chemical syntheses. Aside from Grignard reagents and organozinc compounds, other organometallics like organolithium, organoaluminum, and organotin reagents have demonstrated their practicality in a number of applications.

Due to the huge variation in organometallics and their many applications, the Thermo Scientific portfolio strives to meet customers' demand for the widest choice of reagents. Whether you're looking for enhanced organometallic reactivity, ease of work-up, or reduced environmental impact solutions, we offer the expertise and extensive range to assist you with all your organometallic reagent needs.

Find exactly what you need quickly and easily. Our extensive range of high quality Thermo Scientific synthetic reagents come in a variety of grades, specifications and pack sizes. And they're there when you need them.

Grignard reagents

Fisher Scientific Cat. No.	Description	Size	CAS No.
AAH51170	Allylmagnesium chloride, 1M in MeTHF	100 mL, 500 mL	2622-05-1
AAH54820	2-Chlorobenzylmagnesium chloride, 0.50M in 2-MeTHF	100 mL	29874-00-8
AAH54237	3-Chlorobenzylmagnesium chloride, 0.50M in 2-MeTHF	100 mL	29874-01-9
AAH54625	4-Chlorobenzylmagnesium chloride, 0.50M in 2-Me-THF	100 mL	874-72-6
AAH51161	3-Chlorophenylmagnesium bromide, 1M in MeTHF	50 mL, 100 mL	36229-42-2
AAH26273	Cyclopropylmagnesium bromide, 0.5M-0.7M in THF	25 mL, 100 mL	23719-80-4
AAH54197	3,4-Difluorophenylmagnesium bromide, 0.50 M in 2-MeTHF	100 mL	90897-92-0
AAH54881	2-Fluorobenzylmagnesium chloride, 0.50M in 2-MeTHF	100 mL	120608-58-4
AAH54840	Isopropylmagnesium bromide, 3M in 2-MeTHF	100 mL	920-39-8
AAH51155	Isopropylmagnesium chloride, 1M in MeTHF	100 mL, 500 mL	1068-55-9
AAH51156	Isopropylmagnesium chloride - LiCl complex, 1M in MeTHF	100 mL, 500 mL	807329-97-1
AA87324	Methylmagnesium bromide, 3M in ether	500 mL	75-16-1
AA41252	Methylmagnesium bromide, 3M in ether, packaged under Argon in resealable ChemSeal™ bottles.	100 mL, 500 mL	75-16-1
AA42859	Phenylmagnesium bromide, 3M in ether, packaged under Argon in resealable ChemSeal™ bottles	100 mL, 500 mL	100-58-3
AAH54282	2,4,6-Trimethylphenylmagnesium bromide, 1M in 2-MeTHF	100 mL	2633-66-1

Fisher Scientific Cat. No.	Description	Size	CAS No.
AAH58408	1-Adamantylzinc bromide, 0.5M in THF, packaged under Argon in resealable ChemSeal™ bottles	50 mL	312624-15-0
AAH58012	Allylzinc bromide, 0.5M in THF, packaged under Argon in resealable ChemSeal™ bottles	50 mL	18925-10-5
AAH58014	Benzylzinc bromide, 0.5M in THF, packaged under Argon in resealable ChemSeal™ bottles	50 mL	62673-31-8
AAH58266	4-Chlorobutylzinc bromide, 0.5M in THF, packaged under Argon in resealable ChemSeal™ bottles	50 mL	155589-48-3
AAH58897	4-Cyanobutylzinc bromide, 0.5M in THF, packaged under Argon in resealable ChemSeal™ bottles	50 mL	226570-68-9
AAH58247	Cyclobutylzinc bromide, 0.5M in THF, packaged under Argon in resealable ChemSeal™ bottles	50 mL	1019205-65-2
AAH58852	Cyclohexylzinc bromide, 0.5M in THF, packaged under Argon in resealable ChemSeal™ bottles	50 mL	7565-57-3
AAH58764	Cyclopentylzinc bromide, 0.5M in THF, packaged under Argon in resealable ChemSeal™ bottles	50 mL	171860-68-7
AAH58008	Cyclopropylzinc bromide, 0.5M in THF, packaged under Argon in resealable ChemSeal™ bottles	50 mL	26403-68-7
AAH26739	2-(Ethoxycarbonyl)ethylzinc bromide, 0.5M in THF	50 mL	193065-68-8
AAH58023	3-(Ethoxycarbonyl)propylzinc bromide, 0.5M in THF, packaged under Argon in resealable ChemSeal™ bottles	50 mL	131379-39-0

Additional organometallics

Fisher Scientific Cat. No.	Description	Size	CAS No.
AA14007	Aluminum isopropoxide, 98+%	100 g, 1 kg, 5 kg	555-31-7
AAB23615	Copper(II) acetate, anhydrous, 98%	25 g, 100 g, 500 g	142-71-2
AA71130	Di-n-butyltin dilaurate, 95%	25 g, 100 g, 500 g	77-58-7
AA42593	Diisobutylaluminum hydride, 1M solution in hexane, packaged under Argon in resealable ChemSeal™ bottles	50 mL, 200 mL, 800 mL	1191-15-7
AAA17638	Hexamethylditin, 97%	1 g, 5 g, 25 g	661-69-8
AA14643	Tantalum(V) ethoxide, 99.999% (metals basis), Nb <100ppm	1 g, 10 g, 50 g	6074-84-6
AA77115	Titanium(IV) isopropoxide, 97+%	10 g, 100 g, 500 g, 4 × 500 g	546-68-9
AA77124	Titanium(IV) n-butoxide, 99+%	10 g, 100 g, 500 g	5593-70-4
AAH55870	2-(Tri-n-butylstannyl)oxazole, 95%	1 g, 5 g	145214-05-7
AA89798	Vanadium(V) triisopropoxide oxide, 96%	1 g, 5 g, 25 g, 100 g, 500 g	5588-84-1

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