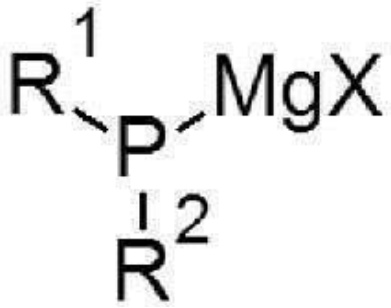
What is Claimed is:

1. An organic magnesium phosphide expressed by General Formula (1):

[Chem 1]



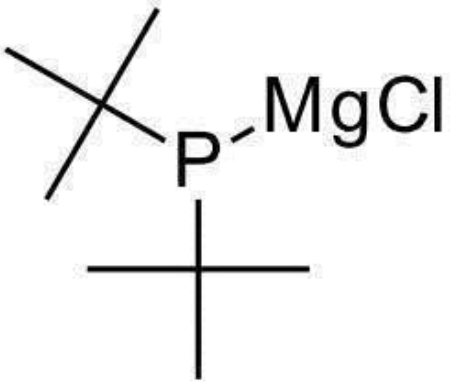
(1)

(in the formula, R^1 and R^2 are each independently an aliphatic group, heteroaliphatic group, alicyclic group, or heterocyclic group, and X is chlorine, bromine, or iodine)

2. The organic magnesium phosphide according to claim 1, wherein R^1 and R^2 are tertiary alkyl groups.

3. The organic magnesium phosphide according to claim 1 or 2, expressed by Formula (2) below:

[Chem 2]

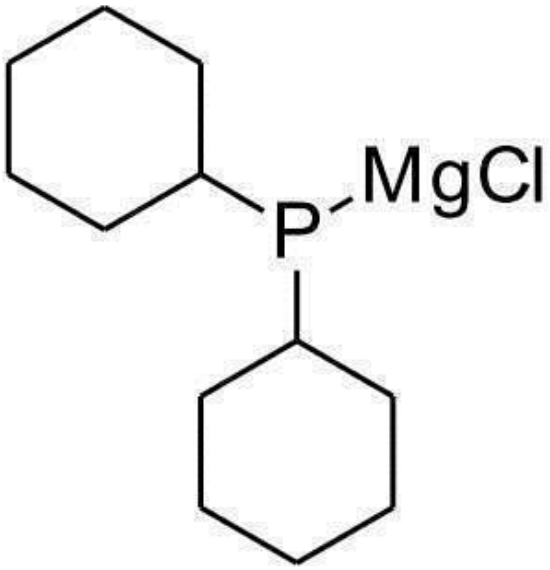


(2)

4. The organic magnesium phosphide according to claim 1, wherein R^1 and R^2 are alicyclic groups.

5. The organic magnesium phosphide according to claim 1 or 4, expressed by Formula (3) below:

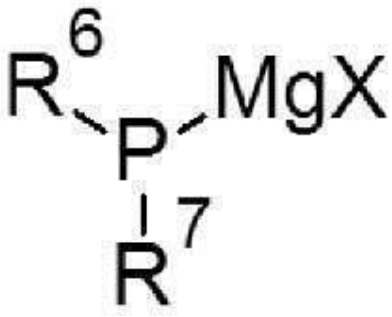
[Chem 3]



(3)

6. A manufacturing method of an organic magnesium phosphide expressed by General Formula (7):

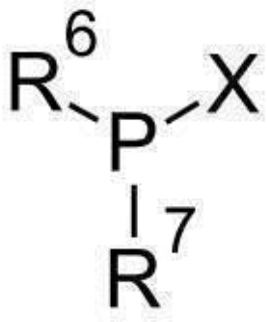
[Chem 7]



(7)

(in the formula, R^6 and R^7 are each independently an aliphatic group other than primary alkyl group or secondary alkyl group, heteroaliphatic group, alicyclic group, or heterocyclic group, and X is chlorine, bromine, or iodine); said manufacturing method of organic magnesium phosphide characterized in that the organic magnesium phosphide is prepared from: a phosphinous halide expressed by General Formula (8):

[Chem 8]

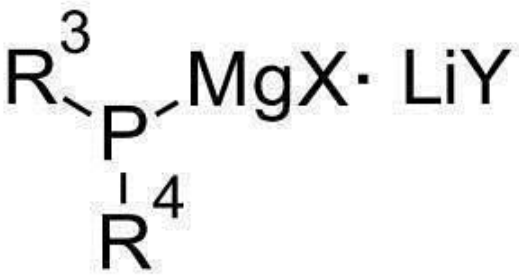


(8)

(in the formula, R^6 and R^7 are each independently an aliphatic group other than primary alkyl group or secondary alkyl group, heteroaliphatic group, alicyclic group, or heterocyclic group, and X is chlorine, bromine, or iodine); and metal magnesium.

7. An organic magnesium phosphide complex expressed by General Formula (9):

[Chem 9]



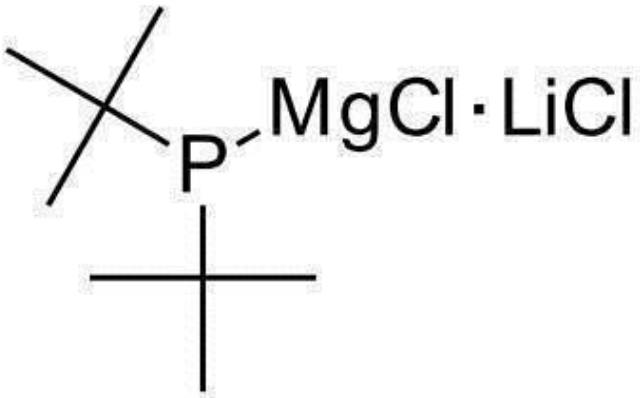
(9)

(in the formula, R^3 and R^4 are each independently an aliphatic group, heteroaliphatic group, aromatic group, alicyclic group, or heterocyclic group, and X and Y are each independently chlorine, bromine, or iodine).

8. The organic magnesium phosphide complex according to claim 7, wherein R^3 and R^4 are tertiary alkyl groups.

9. The organic magnesium phosphide complex according to claim 7 or 8, expressed by Formula (10) below:

[Chem 10]

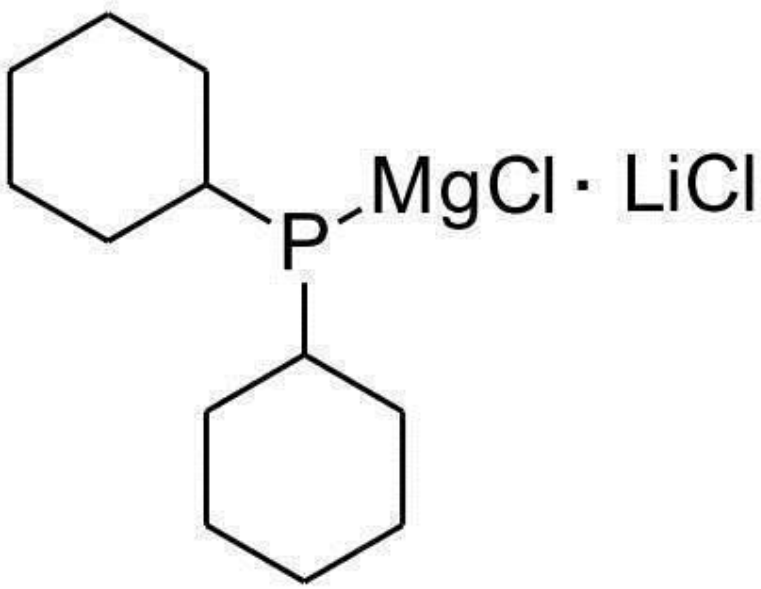


(10)

10. The organic magnesium phosphide complex according to claim 7, wherein R^3 and R^4 are alicyclic groups.

11. The organic magnesium phosphide complex according to claim 7 or 10, expressed by Formula (11) below:

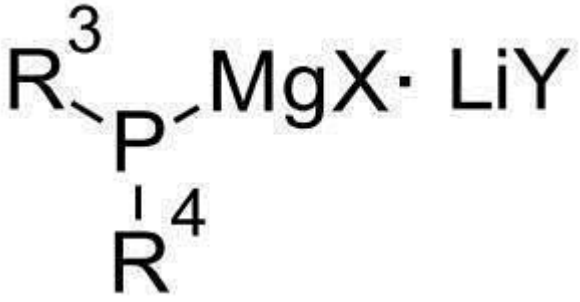
[Chem 11]



(11)

12. A manufacturing method of an organic magnesium phosphide complex expressed by General Formula (9):

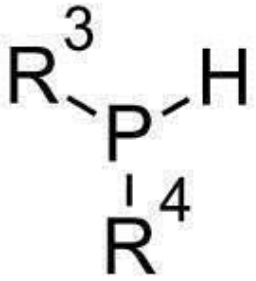
[Chem 12]



(9)

(in the formula, R^3 and R^4 are each independently an aliphatic group, heteroaliphatic group, aromatic group, alicyclic group, or heterocyclic group, and X and Y are each independently chlorine, bromine, or iodine); said manufacturing method of organic magnesium phosphide complex characterized in that the organic magnesium phosphide complex is prepared from: a phosphine expressed by General Formula (5):

[Chem 13]



(5)

(in the formula, R^3 and R^4 are each independently an aliphatic group, heteroaliphatic group, aromatic group, alicyclic group, or heterocyclic group); and an organic magnesium complex expressed by General Formula (12):

[Chem 14]

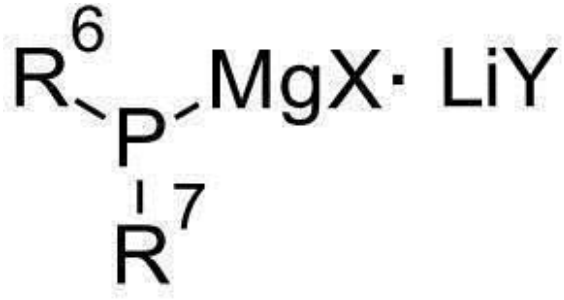


(12)

(in the formula, R^5 is an aliphatic group, heteroaliphatic group, aromatic group, alicyclic group, or heterocyclic group, and X and Y are each independently chlorine, bromine, or iodine).

13. A manufacturing method of an organic magnesium phosphide complex expressed by General Formula (13):

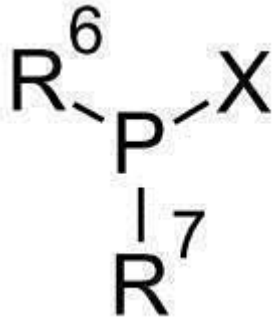
[Chem 15]



(13)

(in the formula, R^6 and R^7 are each independently an aliphatic group other than primary alkyl group or secondary alkyl group, heteroaliphatic group, alicyclic group, or heterocyclic group, and X and Y are each independently chlorine, bromine, or iodine); said manufacturing method of organic magnesium phosphide complex characterized in that the organic magnesium phosphide complex is prepared from: a phosphinous halide expressed by General Formula (8):

[Chem 16]

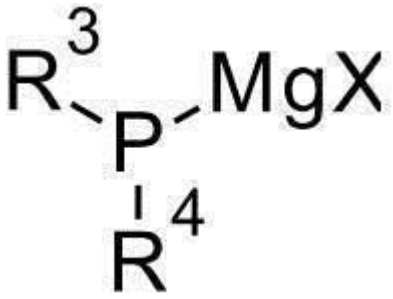


(8)

(in the formula, R^6 and R^7 are each independently an aliphatic group other than primary alkyl group or secondary alkyl group, heteroaliphatic group, alicyclic group, or heterocyclic group, and X is chlorine, bromine, or iodine); and metal magnesium, along with a lithium halide.

14. A manufacturing method of organic phosphorus compound, characterized in that:
an organic magnesium phosphide expressed by General Formula (4):

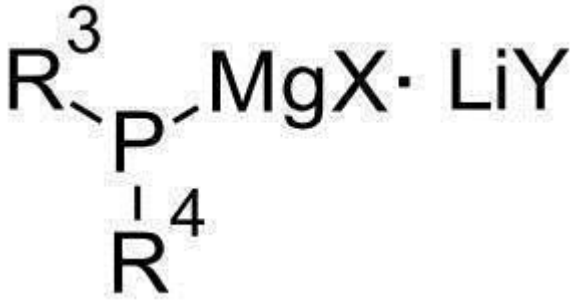
[Chem 17]



(4)

(in the formula, R^1 and R^2 are each independently an aliphatic group, heteroaliphatic group, aromatic group, alicyclic group, or heterocyclic group, and X is chlorine, bromine, or iodine), or an organic magnesium phosphide complex expressed by General Formula (9):

[Chem 18]

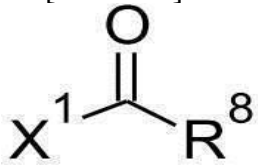


(9)

(in the formula, R^3 and R^4 are each independently an aliphatic group, heteroaliphatic group, aromatic group, alicyclic group, or heterocyclic group, and X and Y are each independently chlorine, bromine, or iodine), is reacted with an electrophile.

15. The manufacturing method of organic phosphorus compound according to claim 14, characterized in that the electrophile is a compound expressed by General Formula (14), (15) or (16) below:

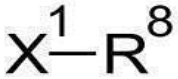
[Chem 19]



(14)



(15)

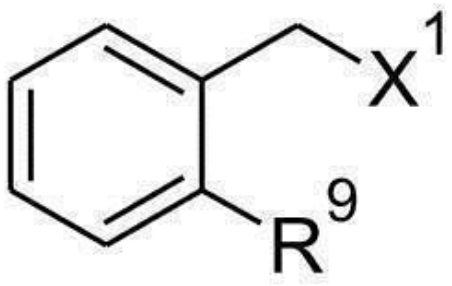


(16)

(in the formula, R^8 is an aliphatic group, heteroaliphatic group, aromatic group, alicyclic group, or heterocyclic group, Ar^1 is an aromatic group, and X^1 is fluorine, chlorine, bromine, iodine, or sulfonate group).

16. The manufacturing method of organic phosphorus compound according to claim 14 or 15, characterized in that the electrophile is a compound expressed by General Formula (17):

[Chem 20]



(17)

(in the formula, R^9 is an aliphatic group that may have been halogenated or sulfonated, or aromatic group that may have been substituted by a halogenated or sulfonated aliphatic group, and X^1 is fluorine, chlorine, bromine, iodine, or sulfonate group).

17. The manufacturing method of organic phosphorus compound according to any one of claims 14 through 16, characterized in that:

the magnesium phosphide is an organic magnesium phosphide expressed by Formula (18) below:

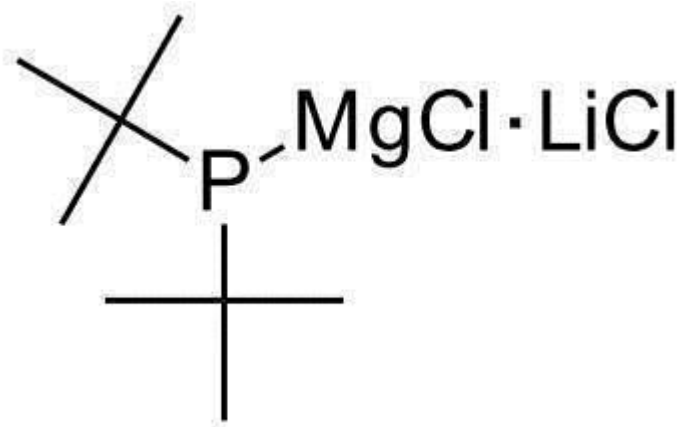
Ph_2PMgCl (18); and

the organic magnesium phosphide complex is an organic magnesium phosphide complex expressed by Formula (19) below:

Ph_2PMgCl•LiCl (19), or

Formula (10) below:

[Chem 21]



(10)