

# New Phosphine Ligand for Ni catalyst

## Triisobutylenediphenylphosphine

### 1 Compound information

Chemical Name :

- 2,2,6,6-tetramethyl-4-methylene heptyldiphenylphosphine
- 2-(2,2-Dimethylpropyl)-4,4-dimethyl-1-pentylidiphenylphosphane

Abbreviation : **TIBDPP**

Boiling Point : No data

Molecular Weight : 354.49

Melting Point : -16°C

Purity/Content :  $\geq 95.0\%$

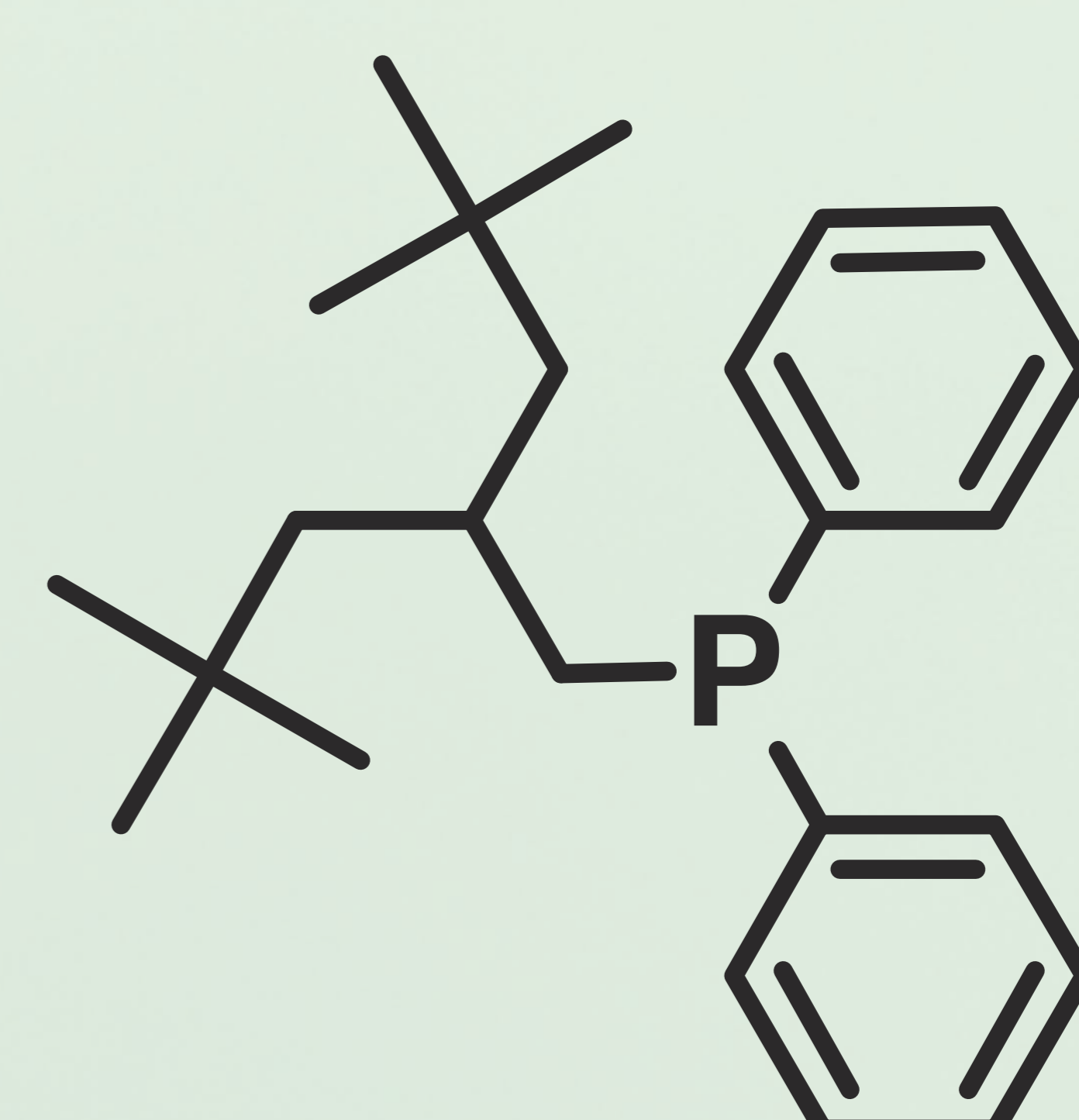
Flash point : 161°C

Physical Form : Colorless to Yellow liquid

Toxicity : (LD<sub>50</sub>) > 300mg/kg (mouse acute oral)

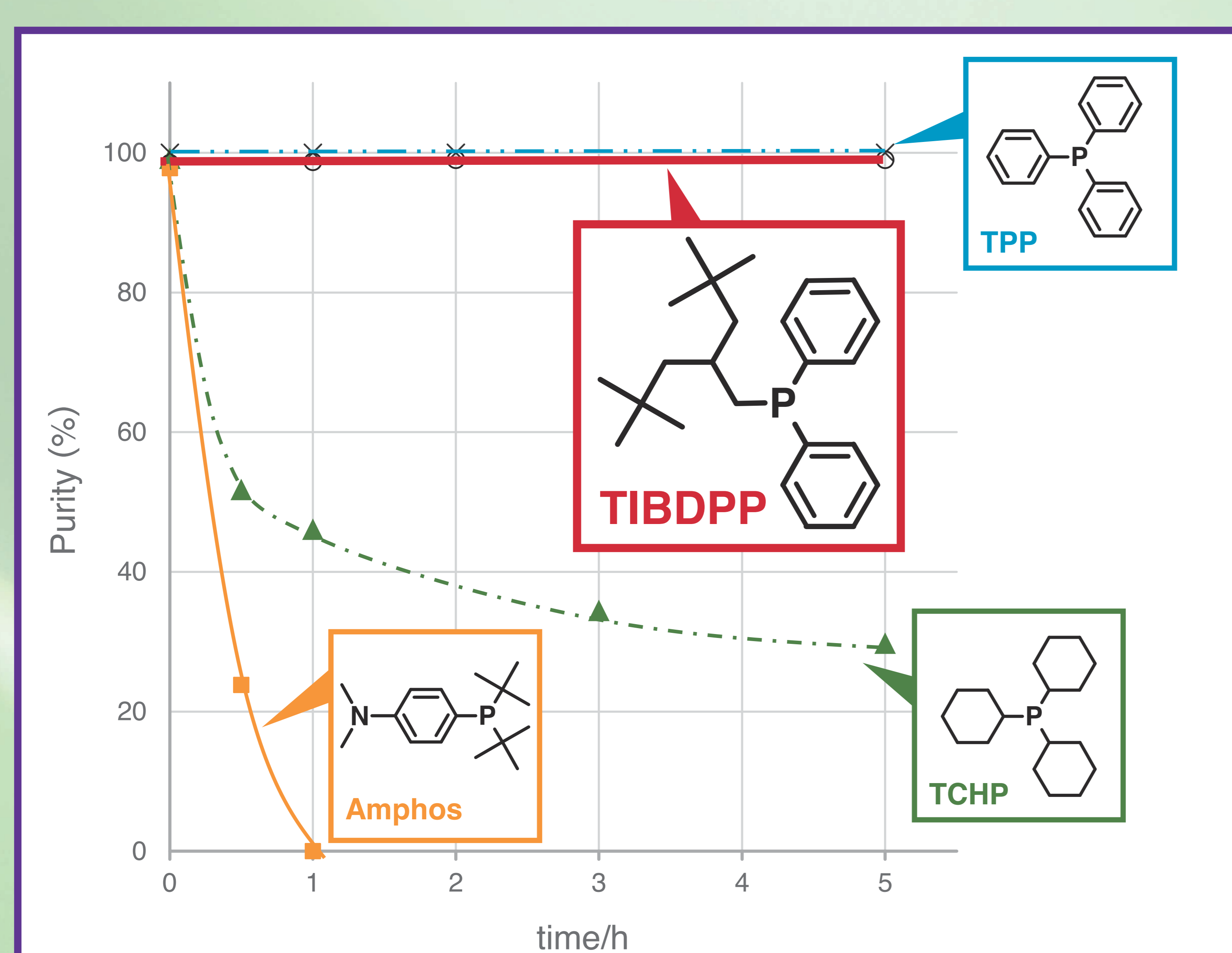
Density(25°C) : 0.948

Mutagenicity : Negative (Ames test)



Structural Formula

### 2 Good stability in air makes it easy to handling



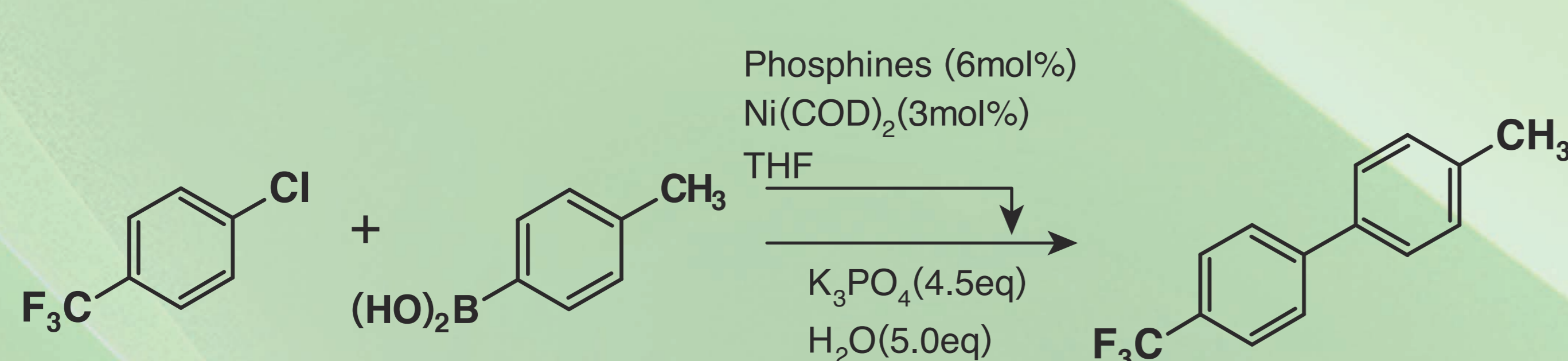
- **TIBDPP** is a liquid phosphine, but it is less susceptible to oxidation than other phosphines.
- Its oxidizing properties are similar to those of TPP, and it is easy to handle.

Here, the names of the compounds are abbreviated as follows:

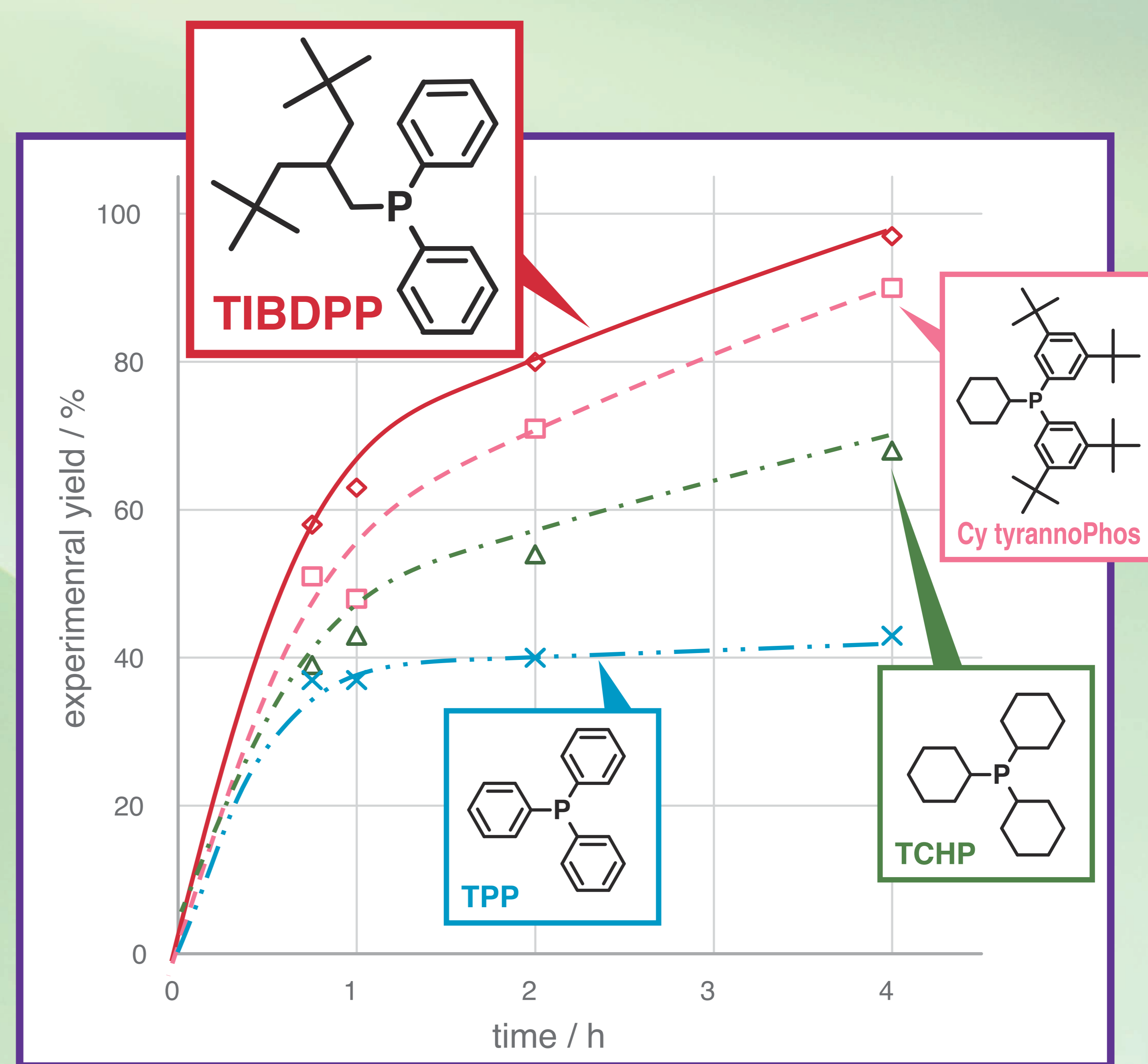
- TPP** = Triphenylphosphine
- TCHP** = Tricyclohexylphosphine
- Amphos** = (4-Dimethylaminophenyl) di-tert-butylphosphine

\*These results were obtained when each compound was dissolved in THF and stored at room temperature under air.

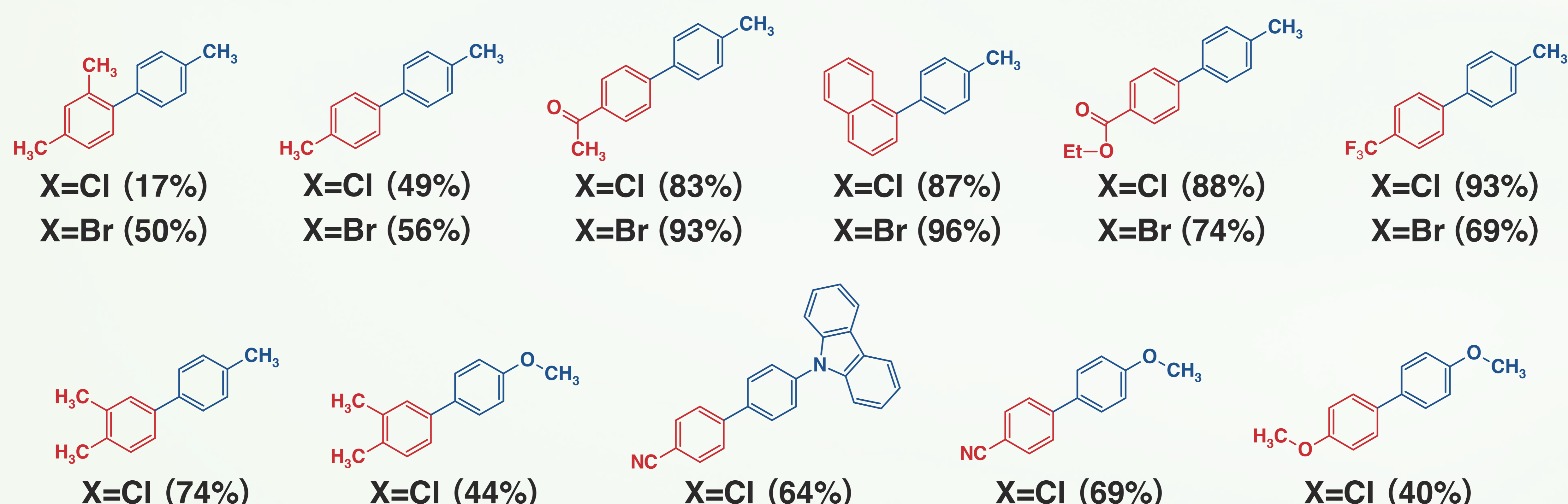
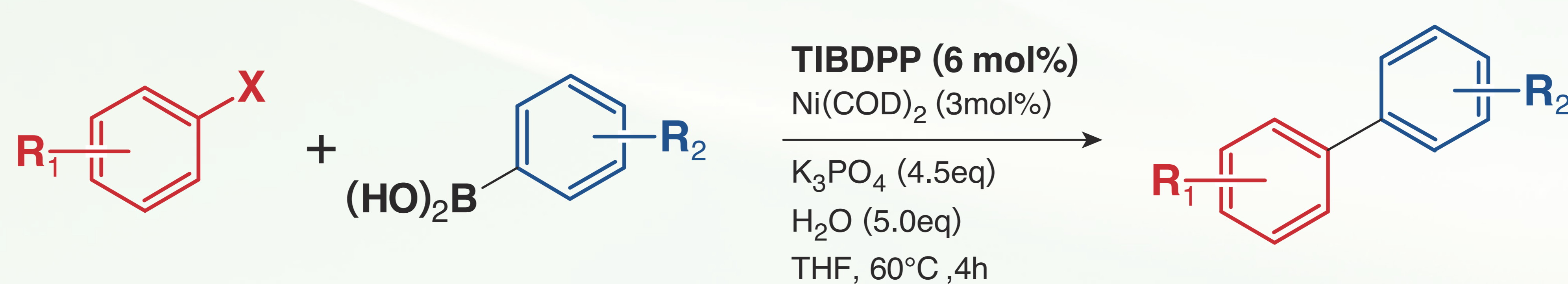
### 3 Application of TIBDPP to Suzuki-Miyaura coupling



Phosphines	GC yields after xh/%			
	0.75h	1.0h	2.0h	4.0h
<b>TIBDPP</b>	58	63	80	97
<b>Cy tyrannoPhos</b>	51	48	71	90
<b>TCHP</b>	39	43	54	68
<b>TPP</b>	37	37	40	43



### 4 Ni-Catalyzed Suzuki-Miyaura coupling of Various Substrates Using TIBDPP



HOKKO CHEMICAL INDUSTRY CO., LTD.