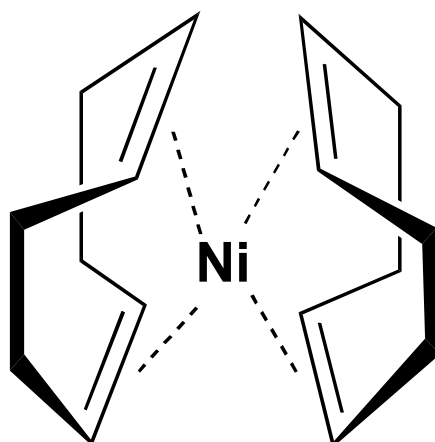


Trial product

Bis(1,5-cyclooctadiene)nickel(0)
Bis(1,5-cyclooctadiene)nickel(0)



Technical data

NICHIA CORPORATION

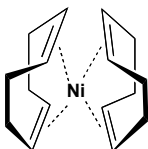
1. Product Guide

① Physical and Chemical Properties

Chemical name: Bis(1,5-cyclooctadiene)nickel(0)

CAS#. 1295-35-8

Structural Formula:



Molecular Formula: $C_{16}H_{24}Ni$

Molecular Weight: 275.06

Appearance: yellow crystalline powder

Purity: 98+% (as Ni)

Solubility: Moderately soluble in aromatic hydrocarbons.
Insoluble in aliphatic hydrocarbons and ethers.

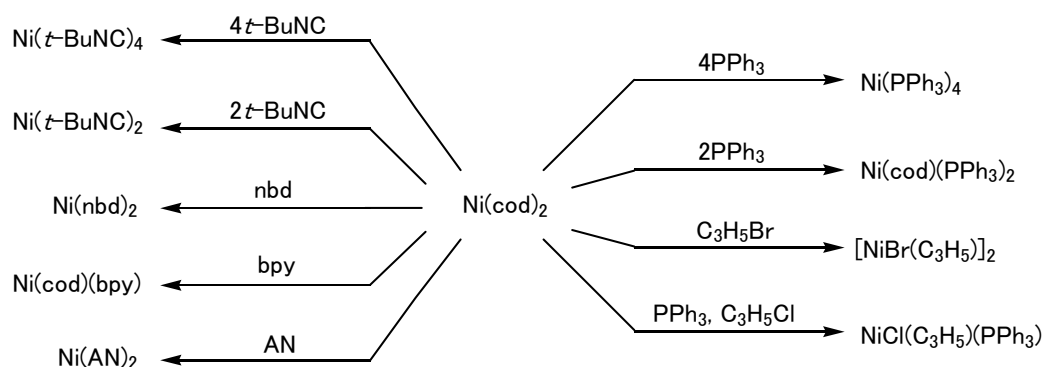
Stability: Air and moisture-sensitive.
Decompose in halogenated hydrocarbons.
Immediately decompose in solution state.

We have strong customer-service engineering team in our V-plant listed on the last page. Please feel free to contact us at the nearest Nichia sales office if you are interested in $Ni(cod)_2$.

2. Application in Organic Synthesis

- Various low-valent nickel complexes are available under relatively mild conditions or in heterogeneous reaction. (hexane slurry etc.)

~Example of low-valent nickel complexes~



nbd: bicyclo[2.2.1]hepta-2,5-diene, bpy: 2,2'-bipyridyl, AN: acrylonitrile

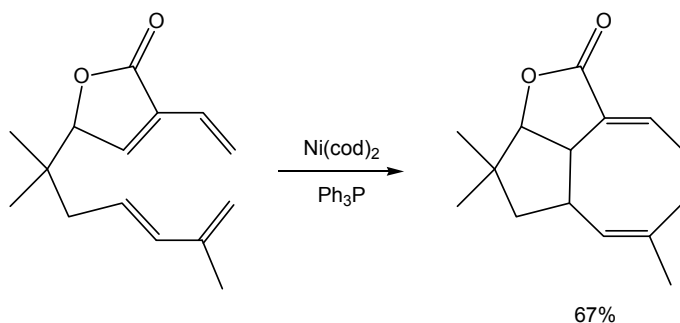
JIKKENKAGAKUKOZA Ver.4 18, 371

3. Reaction example

A. Catalytic cyclization reaction

① [4+4]cyclization reaction

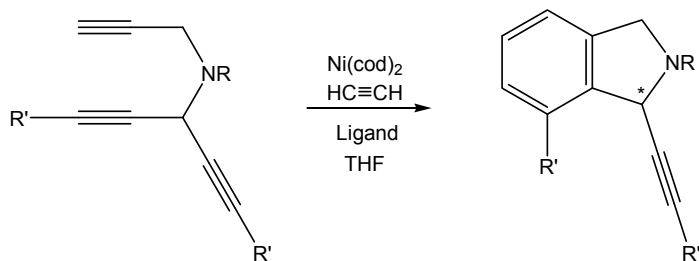
(Formation of eight-membered ring)



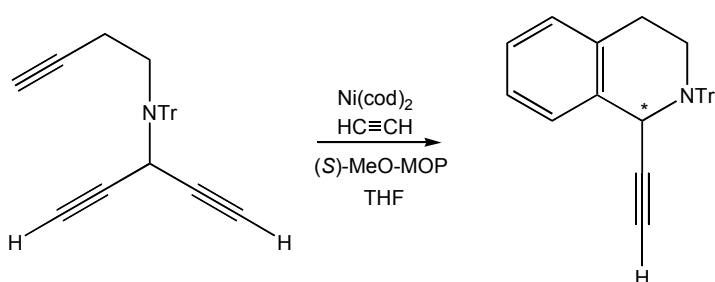
J. Am. Chem. Soc., 110, 5906 (1988)

② [2+2+2]cyclization reaction (Reppe Reaction)

(Synthesis of isoindoline and isoquinoline derivatives.)



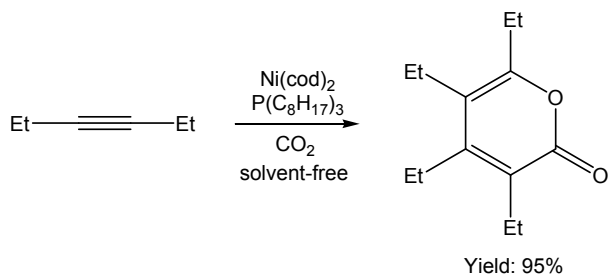
R=Tr, R'=H	Ligand:	Yield(%):	ee(%):
	(S)-BINAPO	66	12
	(S,S)-BPPM	82	45
R=Tr, R'=TMS	Ligand:	Yield(%):	ee(%):
	(R)-BINAP	57	22
	(S,S)-BPPM	92	60



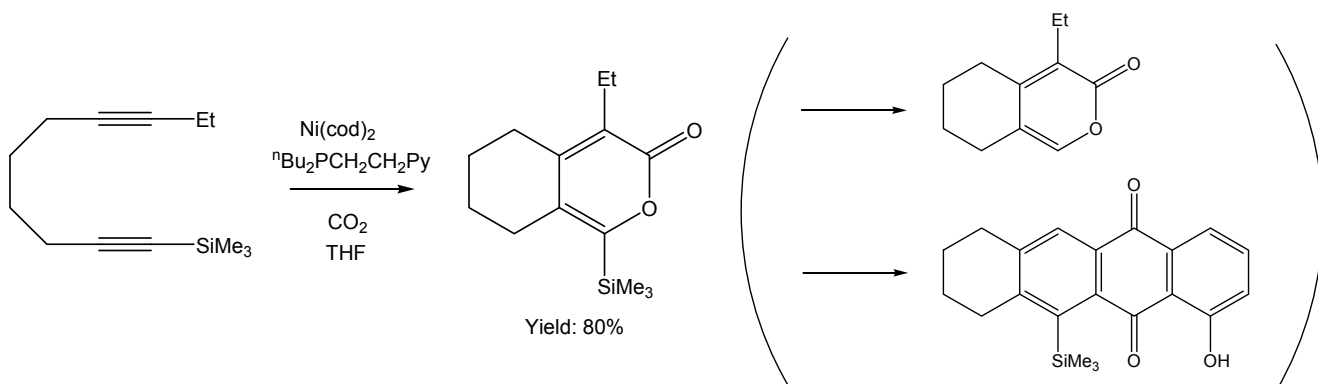
Yield: 62% ee: 54%

YAKUGAKU ZASSHI, 121 (12), 961 (2001)

③ Synthesis of 2-pyrone derivatives by carbon dioxide

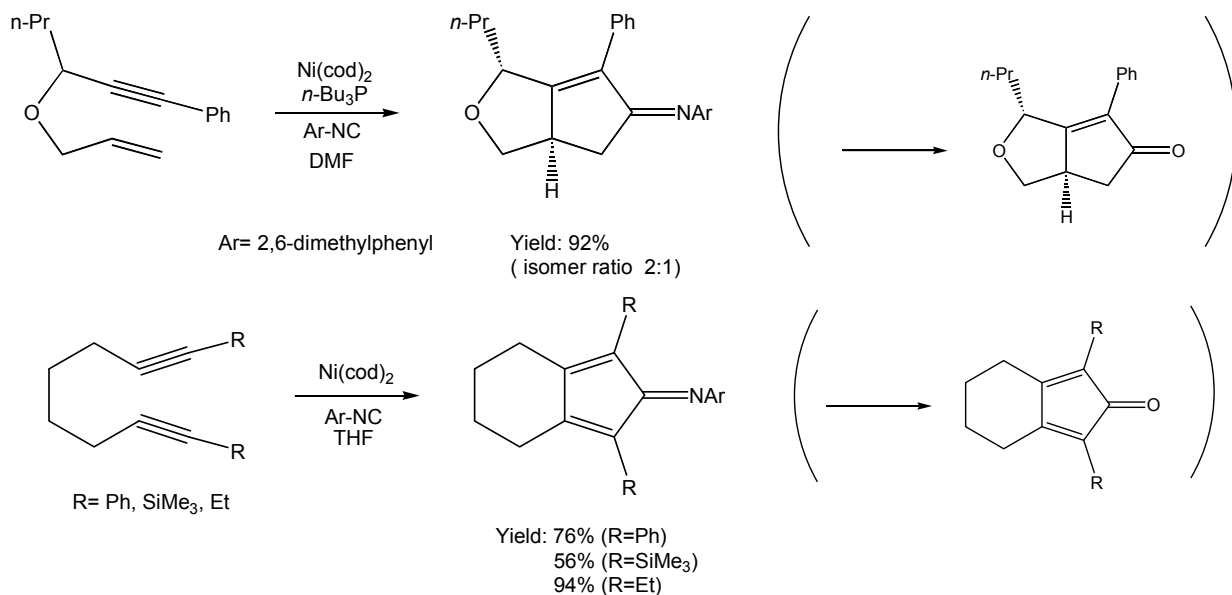


JP 2006-213687



Yukigoseikagaku Kyokaiishi, 48, 362 (1990)

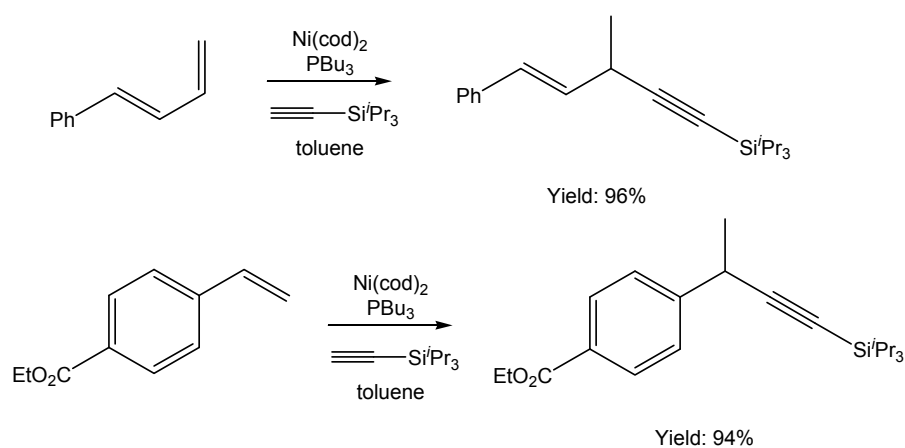
B. Stoichiometric cyclization by isonitrile



Catalytic addition reaction

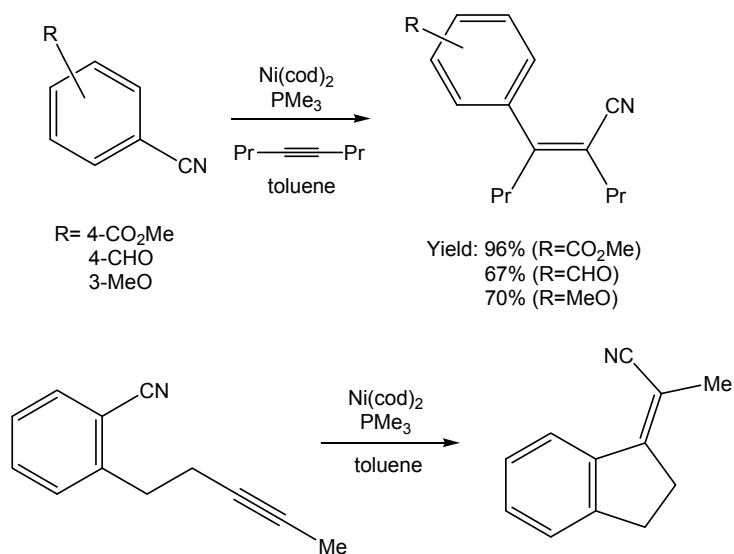
Yukigoseikagaku Kyokaishi, **48**, 381 (1990)

① Addition of terminal alkyne



J. Am. Chem. Soc., **130**, 5410 (2008)

② Addition of nitrile



JP 2006-206548

■ The contents of this brochure are updated as of March, 2010.

■ Reference

(The manufacturer & engineering department)

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