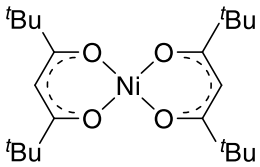
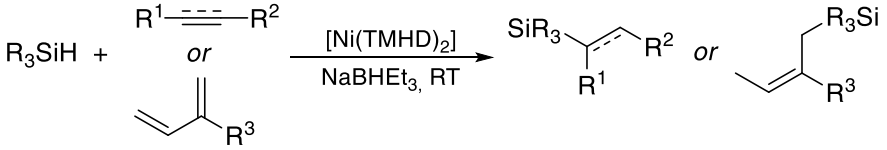
Catalog # 28-0088 Bis(2,2,6,6-tetramethyl-3,5-heptanedionato)nickel(II), min. 98% (99.9%-Ni) [Ni(TMHD)2]
Syn: Ni(DPM)2, Ni(THD)2



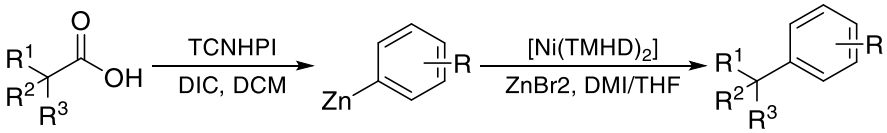
Catalysis Applications

Technical Notes:

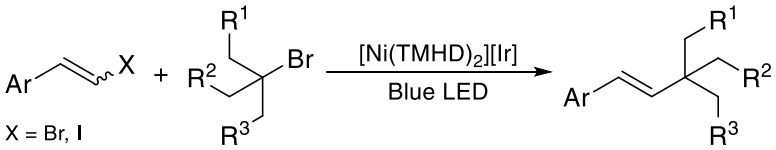
1. Catalyst for the hydrosilylation of 1,3-dienes, alkenes and alkynes
2. Used for Ni-catalyzed cross-coupling of tertiary carboxylic acids and (hetero)aryl zinc reagents
3. Used for Ir-co-catalyzed reductive cross-coupling of aryl vinyl halides and unactivated tertiary alkyl bromides
4. Used in dual Ni-/Pd-catalyzed reductive cross-coupling reactions between two phenol derivatives



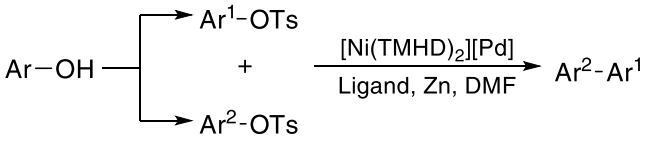
Tech Note (1)
Ref. (1)



Tech Note (2)
Ref. (2)



Tech Note (3)
Ref. (3)



Tech Note (4)
Ref. (4)

References:

1. *J. Organomet. Chem.* **2016**, *809*, 57
2. *Angew. Chem. Int. Ed.* **2019**, *58*, 2454
3. *Chem. Commun.*, **2019**, *55*, 5918
4. *Org. Lett.* **2020**, *22*, 6334

CVD/ALD Applications

Thermal Behavior:

- Sublimation: 120°C/0.02 Torr [1], 138°C/0.75 Torr [2], 125°C/0.01 Torr [3], 230/AP [4], ~190-200/AP [5]

- Melting point: 224-225°C [1]
- Decomposition: 362°C [2]
- TGA diagram and data is available in [5]
- Vapor pressure calculation is available in [6]

Technical Notes:

1. ALD/CVD precursor and dopant for nickel thin film deposition

Target Deposit	Deposition Technique	Delivery Temperature	Pressure	Co-reactants	Deposition Temperature	Ref.
NiO_x	ALD	165°C	5 Torr	H_2O	275°C	7
Ni_3N	CVD	160-170°C	5 Torr	NH_3	200-290°C	8
NiS	ALD	165°C	1 Torr	H_2S	170-350°C	9
$LaNiO_x$	CVD	280°C (solv)	-	$La(tmhd)_3$, O_2	750°C	10
$(Co_{1-x}Ni_x)_3O_4$	ALD	115°	0.75-2.25 Torr	$Co(tmhd)_2$, O_3	200°C	11

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2. *Thermochimica Acta* **2003**, *404*, 187
3. *J. Alloys Comp.* **2000**, *308*, 158
4. *Ultrasonics Sonochem.* **2003**, *10*, 95
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7. *Chem. Vap. Deposition* **2009**, *15*, 186
8. *ECS Trans.* **2009**, *25*, 365
9. *J. Vac. Sci. Technol. A*, **2016**, *34*, 01A142
10. *J. Electrochem. Soc.* **2008**, *155*, P28
11. *Dalton Trans.*, **2017**, *46*, 4796