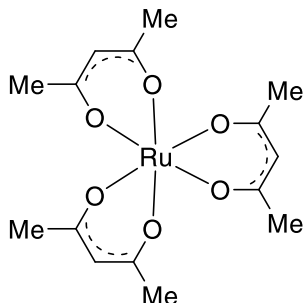


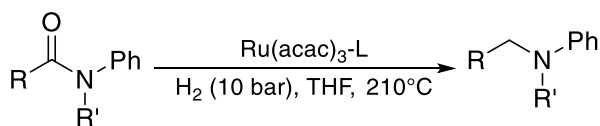
Catalog # 44-1800 Ruthenium(III) acetylacetonate, 99%



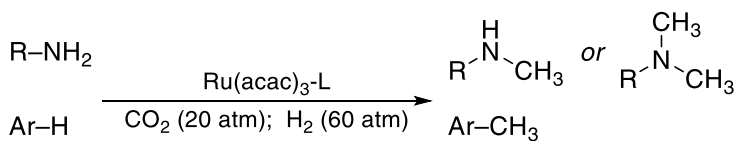
Catalysis Applications

Technical Notes:

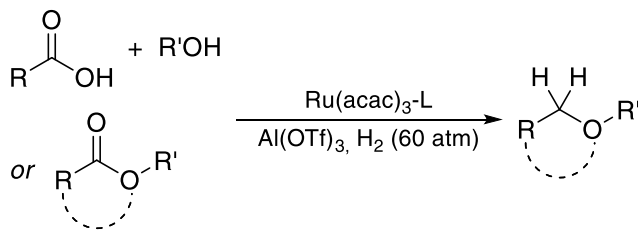
1. Used for hydrogenation of amides to amines
2. Catalyst for selective methylation of amines [2] and C–H bonds [3] with carbon dioxide and H₂
3. Catalyst for Lewis acid promoted etherifications by selective hydrogenation of carboxylic acids/esters
4. Catalyst for hydrogenation of carboxylic acids to alcohols
5. One of the major precursors for the preparation Ru nanocomposites (e.g., ref. 6-8):



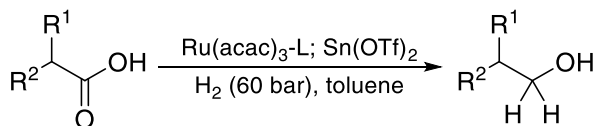
Tech Note (1)
Ref. (1)



Tech Note (2)
Ref. (2, 3)



Tech Note (3)
Ref. (3)



Tech Note (4)
Ref. (4)

References:

1. [Chem. Eur. J. 2013, 19, 11039.](#)
2. [Angew. Chem. Int. Ed. 2013, 52, 12156.](#)
3. [Angew. Chem. Int. Ed. 2014, 53, 10476.](#)
4. [Angew. Chem. Int. Ed. 2015, 54, 5196.](#)
5. [Angew. Chem. Int. Ed. 2015, 54, 10596.](#)

6. [ACS Catal. 2016, 6, 1487.](#)
7. [J. Am. Chem. Soc. 2018, 140, 1142.](#)
8. [Chem 2019, 5, 445.](#)

CVD/ALD Applications

Thermal Behavior:

- Melting point: 235°C
- Decomposition at 285°C [1]
- Sublimation: 190°C/10⁻² Torr
- Vapor pressure study is available in [1, 3]

Technical Notes:

1. ALD/CVD precursor for ruthenium containing thin film deposition.

Target Deposit	Deposition Technique	Delivery Temperature	Pressure	Co-reactants	Deposition Temperature	Ref.
Ru	CVD	250°C, diglyme	10 Torr	-	300-700°C	2
	ALD	-	-	H ₂	300-370°C	3
	CVD	180°C, EtOH	26 Torr	EtOH	250°C	4
RuO ₂	CVD	170°C	10 Torr	O ₂	300-700°C	2

References:

1. [J. Phys. IV France, 2001, 11, Pr3-609.](#)
2. [J. Phys. IV France, 2001, 11, Pr3-325.](#)
3. [Surf. Coat. Technol. 2007, 201, 9003.](#)
4. [Mater. Chem. Phys. 2011, 125, 757.](#)