

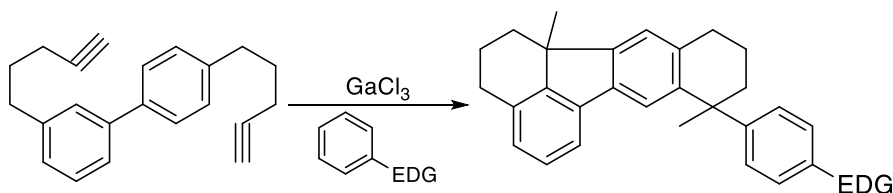
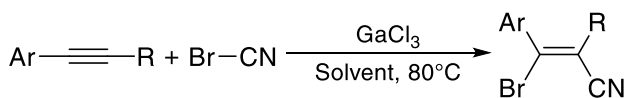
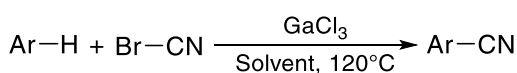
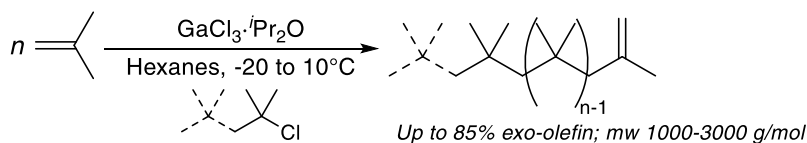
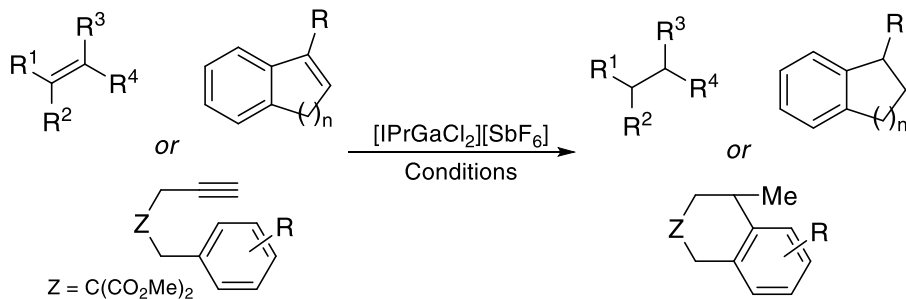
Catalog # 93-3140 Gallium(III) chloride, anhydrous, granular (99.999%-Ga) PURATREM

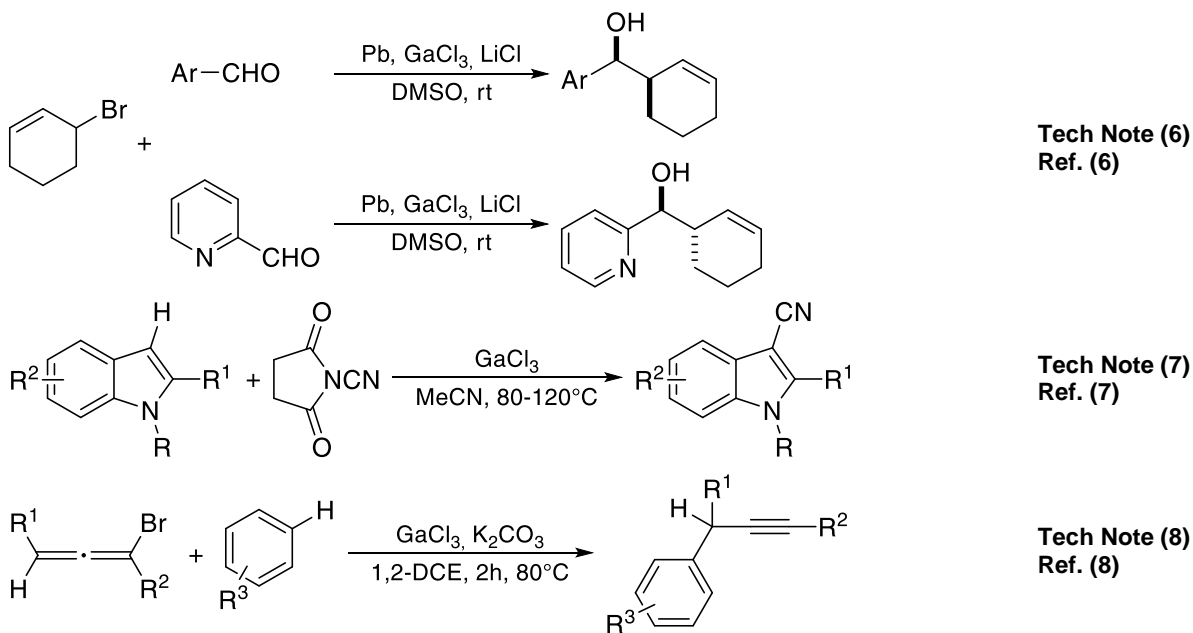
GaCl<sub>3</sub>

## Catalysis Applications

## Technical Notes:

1. Used in Ga-catalyzed cycloisomerization/Friedel-Crafts tandem elusive polyhydroarylation reactions.
2. Catalyst for regio- and stereoselective bromocyanation of alkynes to generate  $\beta$ -bromo- $\alpha,\beta$ -unsaturated nitriles.
3. Catalyst for electrophilic cyanation of aromatic C-H bonds to generate aromatic nitriles.
4. Catalyst for polymerization of isobutylene.
5. Used in Ga-catalyzed transfer hydrogenation of alkenes.
6. Catalyst used in lead-mediated highly diastereoselective allylation of aldehydes with cyclic allylic halides.
7. Catalyst for C-H cyanation of indoles with N-cyanosuccinimide.
8. Catalyst for potassium carbonate promoted C-H propargylation of arenes.

Tech Note (1)  
Ref. (1)Tech Note (2)  
Ref. (2)Tech Note (3)  
Ref. (3)Tech Note (4)  
Ref. (4)Tech Note (5)  
Ref. (5)



Tech Note (6)  
Ref. (6)

Tech Note (7)  
Ref. (7)

Tech Note (8)  
Ref. (8)

## References:

1. [J. Org. Chem. 2010, 75, 8435.](#)
2. [Chem. Commun. 2011, 47, 2375.](#)
3. [Chem. Commun. 2012, 48, 3127.](#)
4. [Macromolecules 2012, 45, 8598.](#)
5. [Chem. Eur. J. 2014, 20, 14488.](#)
6. [J. Org. Chem. 2019, 84, 5348.](#)
7. [J. Org. Chem. 2019, 84, 6199.](#)
8. [ACS Catal. 2022, 12, 305.](#)

## CVD/ALD Applications

## Thermal Behavior:

- Melting point: 77.9°C
- Boiling point: 201.3°C

## Technical Notes:

1. ALD precursor for thin gallium containing film deposition.

Target Deposit	Deposition Technique	Delivery Temperature	Pressure	Co-reactants	Deposition Temperature	Ref.
GaN	ALD	70°C	1 Torr	NH <sub>3</sub>	375-750°C	1
GaSb	ALD	20°C	7.5 Torr	(Et <sub>3</sub> Si) <sub>3</sub> Sb	95-250°C	2
GaAs	ALD			(Et <sub>3</sub> Si) <sub>3</sub> As		3

## References:

1. [J. Vac. Sci. Technol. A, 2009, 27, 923.](#)

2. [Chem. Mater. 2011, 23, 247.](#)
3. [J. Mater. Chem. C, 2016, 4, 449.](#)