



# INNOVASSYNTH TECHNOLOGIES(I) LTD

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1565 Barclay Blvd., Buffalo Grove, IL 60089

## JV and CMO Potential

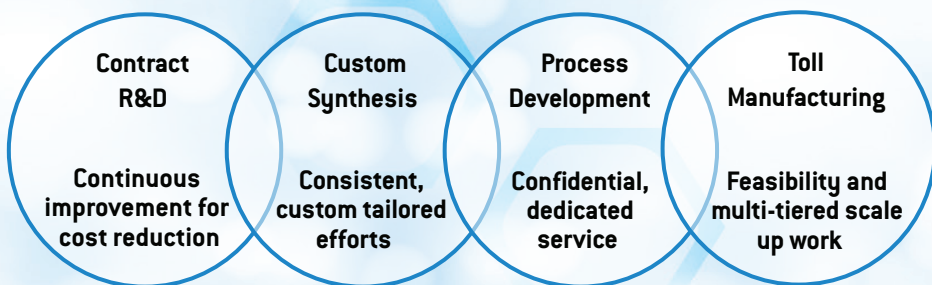
- Joint development efforts
- Project specific capacity of ~ 200 KL
- Available expansion for dedicated facilities
- Civil construction and reactor bay accommodation
- Shared costs
- Commitment to customer satisfaction
- Manufacturer of value added and technology intensive products

**India**  
[ Alternate to China ]

## Quality & Reliability

- Alternative overseas production
- Global partnerships
- Privately held
- Committed laboratory spaces
- ISO 9001 certified
- FDA and EDQM inspections

## Development and Manufacturing Solutions



Located outside Mumbai

## Metalloenes and e-Donors

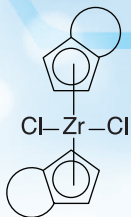
- Custom packing tailored to user batch size
- Inert shipping and packing
- Dedicated labs
- Made to order on customer requirements

- 65 Acre (260,000 m<sup>2</sup>) campus
- 5 R&D labs, 3 Kilo labs
- 17 analytical chemists
- 67 synthetic chemists

## Specialty Products and Technologies

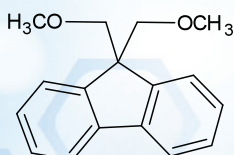
- Air & Moisture sensitive operations
- Pyrophoric material handling

### Metalloenes



Kilo to ton historical production

### 9,9'-bis (methoxymethyl) fluorene



100 Kg batches

<b>Grignard</b> Grignard reaction safety system of ~100s of Kg of Mg	<b>Friedel Crafts</b> Acidic effluent treatment	<b>Grignard</b> Cost competitive development
<b>Cyanation</b> Complete, safe facility	<b>Hydrogenation</b> Catalytic; 30 bar, 150°C	<b>Organometallics</b> 400 Kg nBuLi capacity
<b>Carbohydrate Chemistry</b> Developed 4 sugar monomers; 50 Kg production	<b>Halogenation</b> Br <sub>2</sub> (l) and Cl <sub>2</sub> (g) handling ~1 MT	



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**AUSTIN**  
Austin Chemical Company, Inc.

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## Nucleosides

- In house development
- Synthesis & Scaleup
- Specialty development from respective sugar
- In house analysis, exclusive of NMR
- Supplemental purity on request

	Adenosine	Thymidine & Uridine	Guanosine	Cytidine
<b>Deoxy</b> MFG Capacity: 3 M.T per year				
<b>Ribo</b> MFG Capacity: 2 M.T per year				
<b>Locked Nucleic Acid (LNA) &amp; cEt</b> MFG Capacity: 2 M.T per year				
<b>UNA</b>				
<b>Morpholino</b> MFG Capacity: 0.5 M. T per annum.				

- Protection and deprotection
- Transformation of U to C via triazolation
- 5'-O-Acylation
- Selective 2'-O alkylations
- Fluorination and phosphorylation
- Azidation and catalytic reduction to amino derivative

## General Plant

- Reactors - Glass Lined and Stainless Steel up to 7.0 KL
- Centrifuge 60"
- Nutch Filter, milling machine (50 Kg/Hr), rotocone dryer
- Autoclave/hydrogenation reactor (1.5 KL)
- Scrubber Units
- Liquid N2 Tank (30 KL) for operations at -40°C
- Fractional Distillation via Packed Column
- Effluent treatment plant with excess capacity

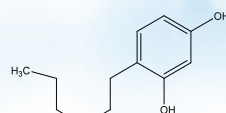
## Analytical Capabilities

- Analytical method development, validation, and transfer
- Impurity Profile
- Microbiological Testing
- Stability Testing
- HPLC
- GC
- FT-IR
- LC-MS
- UPHPLC

## Pharma Intermediates

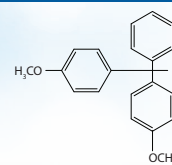
- Rigorous QC
- Extensive Documentation
- Process Optimization & Scaleup
- Exclusive manufacturing

### 4-Hexyl Resorcinol



Antiseptic, local anesthetic.  
Applications in electronics and fisheries industry.

### Dimethoxytrityl Chloride

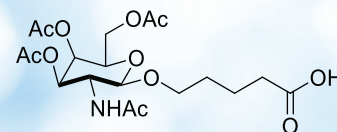


6 MT annually. Protecting group in nucleosides.

## GalNAc Succinate

- Dedicated setup for manufacturing
- Design or customize
- Linear and branched
- Chain of GalNAc linker conjugates
- mg to kg
- MFG Capacity: 0.5 M. T per year

Subject to license award



## Reaction Expertise

- Approval by Indian government

Fries  
Rearrangement

Aromatic  
Fluorination  
& Sulphonation

Oxidation

Wittig-Horner

Phosphorous  
Halides

Side Chain  
Photochlorination

Reductions

## Sustainability

- Full Water Management System
- Zero liquid discharge
- Treated water recycled for cooling towers
- STP water for land irrigation of own property