

The MSU Bioeconomy Institute in Holland, Michigan offers specialty chemical scale-up and manufacturing services utilizing over 30,000 liters of Glass-Lined, Hastelloy and Stainless Steel reaction and distillation vessels. The facility has a Class 1, Division 1, Group D Electrical Rating, is Process Safety Management compliant and has a flexible State of Michigan Air Permit, which enables us to accommodate most standard solvents and reactions. The site employs engineers, chemists and chemical operators with extensive experience in specialty chemical processing.



## EQUIPMENT OVERVIEW (>30,000 LITERS OF TOTAL CAPACITY)

### STILLS

#### OPERATING PARAMETERS

- Temperature: -10 to 140°C
- Pressure: Full Vacuum to 75psig
- Variable Agitation

#### VESSEL SIZES

- 2 X 4000L Glass Lined
- 2 X 2000L Glass-Lined
- 2 X 800L Stainless Steel
- 800L Hastelloy C276
- 400L Glass-Lined
- 200L Glass-Lined
- 80L Glass-Lined

### REACTORS

#### OPERATING PARAMETERS

- Temperature: -10 to 140°C
- Pressure: Full Vacuum to 75psig
- Variable Agitation

#### VESSEL SIZES

- 4000L Glass Lined
- 2 X 2000L Glass-Lined
- 800L Glass-Lined
- 400L Glass-Lined
- 200L Glass-Lined
- 120L Glass-Lined



## TANKS

### OPERATING PARAMETERS

- Pressure: Full Vacuum to 75psig

### VESSEL SIZES

- 4000L Glass Lined
- 2000L Glass-Lined
- 800L Glass-Lined
- 120L Glass-Lined

## CENTRIFUGES

- 2 x 40in Basket, Hastelloy C276

## DRYERS

- Temperature Range: 30 to 95°C
- Pressure Range: Atmospheric to Full Vacuum
- Vacuum Tray Dryers (~250 kg capacity/each)
- 500L Glass-Lined Rotary Vacuum Dryer (~150 kg capacity)
- 850L Geudu Pan Dryer, Hastelloy C22

## FILTERS

- Niagara Filters, 316 Stainless Steel
  - » 16 - Plate 18 in
  - » 4 - Plate 18 in
- Bag Filter
- Cartridge Filters

## SPECIALIZED EQUIPMENT

- 400 L Low Temp Temperature Hastelloy C276 Reactor
  - » Cooling capability with Liquid Nitrogen to -100°C at 5 psig; or
  - » Operating Temperature range: 25 - 80°C at 75 psig
- 400 L Hastelloy C276 Reactor
- Operating Temperature range 25 - 80°C at 75 psig
- 120 L GL High Temperature Still with 316 stainless steel Fractionation Column or 316 stainless steel Riser; Heating capability to 230°C
- 150 sq. ft. Cold Room



*Please contact us to discuss your project needs and requirements.*

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