



Altamira Instruments

REACTOR SYSTEM PRE-QUOTE QUESTIONNAIRE

Customer contact information

Name: _____ Company: _____
 Title: _____ Department: _____
 Tel: _____ Fax: _____
 E-Mail: _____
 Address: _____

I. Overall System Specifications

Temperature:

Maximum Allowable _____ Normal Operating _____ °C °F

Pressure:

Maximum Allowable _____ Normal Operating _____ psig barg

II. Gas Feeds

	Flow Range (Sccm)	Typical Flow (Sccm) ¹	Gas to be Used
Gas 1			
Gas 2			
Gas 3			
Gas 4			
Gas 5			
More	Gases (Indicate total	number of gas feeds)	

Pressure reducing regulators required on each gas supply line Yes No
 Automated positive shut off valves required after each gas flow controller Yes No
 Pressure relief valve on each gas supply line Yes No

III. Liquid Feeds

Feed tank: Volume _____ Liters
Tank / feed line heating No Yes: Temp _____ C
blanketing with inert gas No Yes

	Flow Range (mL/min)	Typical Flow (mL/min)	Liquid to be Used
Liquid 1			
Liquid 2			

Pump Preference²:

Liquid 1: Piston-type pump Syringe pump Diaphragm pump
Liquid 2: Piston-type pump Syringe pump Diaphragm pump

IV. Reactor Module

Reactor Type: Fixed-bed (PFR) CSTR Internal recycle
 CSTR Volume _____
If PFR, desired Flow Path: Downflow Upflow Both

Gas Preheater: Yes No Liquid Vaporizer: Yes No

Maximum Catalyst Volume: _____ mL Typical catalyst volume: _____ mL

Number of Furnace Zones: 1 2 3 _____

Bed Temperature Readings:

None required Single point, fixed Single point, moveable
 Three points, fixed Other _____

V. Pressure Control

Pressure Reading:

Pressure Gauge Reactor inlet Reactor outlet Other _____
Computer display Reactor inlet Reactor outlet Other _____

Pressure Control: Manual Automatic

VI. Product Handling

Liquid condenser : Yes: cooling medium _____ Temp _____ °C No
Heat tracing downstream of reactor: Yes No

If yes please specify the sections to be heated and up to what temperature _____

Gas Liquid Separator: Yes No

If yes please specify: Manual intermittent drain Automatic level control

Liquid product collection vessel: Yes No

If yes, Blanketing: Yes No Heating: No Yes: Temp _____
°C

VII. Analysis and Material Balance

Streams to Be Analyzed:

Feed: Gas Liquid Combined

Product: Gas Liquid Combined

Method of Analysis:

On-line GC Off-line GC Other _____

_____ Instrument preference, please specify _____

Mass Balance Components:

Feed weigh scales Product weigh scales Wet test meter Dry test meter

VIII. Optional Safety Features

YES NO

Inert flush on power loss or shut down

Explosion proof electrical wiring

IX. Control System

Direct control from PC Control through PLCs

Preferred Soft-ware: LabVIEW FIX MMI Wonderware Other _____

X. Reactor Material of Construction

316 Stainless Steel Other _____

Space Available (L x W x H) : _____ x _____ x _____

Describe any special size constraints or consideration _____

XII. Desired Delivery Date: _____

Preferred Vendors for Major Components

- No Yes: Please provide details on a separate sheet

Nature of Request

- Firm quotation for purchase Budgetary indication Validity _____ days

Date planned for order placement _____

Please list any other special features, which are required:

Other issues to be addressed:

NOTES:

¹ This information is required for sizing the mass flow controllers. Please note that mass flow controllers will typically only deliver accurately in the 5 - 95% range of the full scale and that their reproducibility and accuracy is limited to 0.5 - 1% of **full scale**.

² Syringe pumps can precisely deliver very low flows over a wide range with high accuracy, but are significantly more expensive than piston pumps.

Please return the completed questionnaire to:

ALTAMIRA INSTRUMENTS
E-mail: info@altamirainstruments.com
Attention: Sale Department
149 Delta Drive, Suite 200
Pittsburgh, PA 15238
Tel: (412) 963-6385 Fax: (412) 963-6485