

QUESTIONNAIRE INSTRUCTIONS

There are two methods that may be used to fill out this document. The details of each method are described below.

Method #1: Hard Copy

Print the document then fill in the requested information with a pen. The form can then be mailed or faxed to us.

Method #2: Electronic

This document is also an interactive PDF form. With the document open TAB to the required fields and type in the data. The form may then be emailed to us or it can be printed and the resulting hardcopy can then be mailed or faxed to us.

Process Solutions • Pilot Plant Questionnaire

3. Current Production Method	
Batch	Continuous
If Batch, specify size and time:	
Type of Equipment Used:	
Manufacturer/size/ model #:	
Operating Conditions	
Operating Pressure (mm Hg):	
Operating Temperature (F):	
Jacket Temperature (F):	
Production Feed Rate (lb/hr):	
Plant Cooling Water Temperature (F):	
Plant vacuum capability (mm hg):	

4. Process Mass Balance					
Comp.	Chemical	Mol. Wt.	Feed Comp (Wt.%)	Distillate Comp (Wt%)	Bottoms Comp (Wt%)
A.					
B.					
C.					
D.					
E.					
Totals:					

Please enter data in order of volatility. Start with the most volatile

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5. Physical Properties								
Property	Feed	Dist.	Bott	Component				
				A	B	C	D	E
1. Specific Heat (BTU/lb-F)								
2. Viscosity @ Ambient Temp. (cps)								
3. Viscosity @ Process Temp. (cps)								
4. Latent Heat of Vaporization (BTU/lb)								
5. Melting Point (F)								
6. Vapor Pressure (2 pts.)								
(mm Hg @ °F)								
(mm Hg @ °F)								
7. Specific Gravity								
8. Decomp. Temp. (F)								
9. Autoignition Temp. (F)								
10. Flash Pt. (F)								
11. Max. Proc. Temp. (F)								

6. Recommended Operating Conditions	
Operating Pressure (mm Hg):	
Operating Temperature (F):	
Jacket Temperature (F):	
Feed Temperature (F):	
Cooling Water Temperature (F):	
Residence Time (sec.)	
Other:	

7. Special Testing Considerations & Precautions			
	<i>Feed</i>	<i>Distillate</i>	<i>Bottoms</i>
<i>1. Are the materials sensitive to:</i>			
<i>a. Prolonged Heating</i>			
<i>b. Air/Oxygen</i>			
<i>c. Moisture</i>			
<i>2. Please describe any signs of degradation:</i>			
<i>3. What is the recommended method to minimize degradation:</i>			
<i>a. Cooling</i>			
<i>b. Nitrogen Blanket</i>			
<i>4. Are the materials abrasive:</i>			
<i>5. Will the materials sublime:</i>			
<i>6. Will the materials foam:</i>			
<i>7. Do any of the materials contain:</i>			
<i>a. Dissolved Solids</i>			
<i>If yes, will solids precipitate @ process conditions?</i>			
<i>b. Suspended Solids</i>			
<i>If yes, please provide particle size (microns):</i>			

<i>8. Analysis and Sampling</i>
<i>a. Sample size required for analysis:</i>
<i>b. Type of sample containers desired:</i>
<i>c. Special sampling procedure:</i>
<i>d. Please describe standard analytical procedure:</i>
<i>e. Can an analysis be made during trials (if so please describe method):</i>
<i>9. Equipment Cleaning</i>
<i>a. please list any solvents and methods recommended for cleaning:</i>

8. Materials Handling Precautions

Note: Please attach the appropriate MSDS with this questionnaire

a. Please describe personal protective equipment required:

b. Please describe any other handling precautions:

9. Materials Shipping Information

a. Please specify the type of container and material of construction used to ship test materials to Artisan (i.e. 55 gal OT/TH, steel/plastic)

b. Please list the proper DOT shipping name for all test materials:

c. Specify the shipping criteria for test samples generated daily through pilot testing: (AIR or GROUND)

If air, please specify IATA restrictions: