

Questionnaire for CRITERION Pressure Drop Analysis

Customer Company Name

Date

Unit

Customer Contact

Contact Name

Contact Number: Phone Fax

Please complete the following questionnaire as completely as possible to assist us in trouble-shooting your pressure drop problem. Please include copy of your current reactor loading. This is not an all inclusive list, however follow-up discussions will be enhanced by this information. Fax or mail to any CRITERION sales office for immediate attention.

All data will be treated confidentially.

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FEEDSTOCK CHARACTERISTICS

Origin of Crude Oil _____

Type of Feedstock	Type of Feedstock	Type of Feedstock	Type of Feedstock
% Straight run	% CCU	% Coker	% Other

Gravity of Feed (AP) _____ Molecular Weight _____

Sulphur (%wt) _____ Total Nitrogen ppmw _____

Metals ppmw

Nickel	Vanadium	Fe	Na	Other
_____	_____	_____	_____	_____

Bromine Number g/100g _____ Olefins Cetane Number _____

Type (TBP/GLC/D86, etc) _____ %C or %F (circle one) _____

IBP	10%	30%	50%	70%	90%	FBP
_____	_____	_____	_____	_____	_____	_____

Aromatics % wt (specify method) _____ Known Particulates in Feed? _____

Process Conditions – Method of Measure

Feedrate	m ³ /hr	B/D
Makeup H ₂ Rate	m ³ /hr	SCFD
Recycle H ₂ Rate	m ³ /hr	SCFD
Purge Rate	m ³ /hr	SCFD
Reactor Outlet Rate	kg/cm ²	PSIG
Reactor Pressure Drop at SOR	g/cm ²	PSI
Reactor Pressure Drop MAX at EOR	kg/cm ²	PSI
Recycle Gas H ₂ Purity	% mol	% vol
Makeup H ₂ Purity	% mol	% vol
Reactor Inlet Temperature Range	° C	° F
Reactor Outlet Temperature Range	° C	° F
Reactor Delta T Range	° C	° F
H ₂ Consumption	Nm ³ /m ³	SCF/B

Process Flow and Reactor Characteristics

What is service of unit? (NHT, CFH, DHT, etc.)

Intermediate Tankage? Y or N N₂ or Fuel Gas Blanketed Tanks? Y or N

Does the Unit run in blocked out Operation? Y or N

Fouling in Feed/Effluent Exchange? Feed Effluent

Cause?

Fouling in Reactor? In top of Bed Throughout Reactor

Cause?

Analysis of Fouling Product? _____ Composition?

Reactor Information

Number of Reactors	
Reactor ID	m. Ft.
Reactor Length Tan to Tan	m. Ft.
Number of Beds per Reactor	
Type of Catalyst and Size in Reactor	
What is used in top bed? Hollow cylinders, Trilobes, Spheres, etc.	

Trash Baskets in Reactor? Y or N Does a Distribution Tray exist in Reactor? Y or N

Manufacturer of Distribution Tray _____ Year
 Installed _____

Additional Comments:

Pressure Drop History

1. Is problem new or historical?

2. What is the typical run length before becoming pressure drop limited?

3. Does pressure drop build all at once or over period of run?

4. Specify major refinery changes in the last 5 years (crudes, revamps of unit or upstream).

5. When was the last time exchangers and heater upstream of the reactor were cleaned?

Additional Comments: