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Foaming in Absorber Column for Gas Dehydration Unit.



ARIJIT SEN

Proposal Engineer at Process Group International

Hello All,

I have a query regarding Foaming in Gas Dehydration Unit.

1) How much common is the problem of foaming with TEG ?

2) Is Differential pressure Gauge is required across Structured Packing as the pressure drop across packing is too low.

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6 comments



Wilfredo

Wilfredo Garcia

Process Specialist at Ecopetrol

Dear Arijit,

I'll try to respond to your questions:

1.- Foaming is a troubleshoot you need to resolve in the amine and glycol systems, the foaming is due to heavy hydrocarbon presence in the gas stream. In order to avoid (or minimise) it a filter or scrubber is located upstream the contactor and activated carbon filtration is included in the amine/glycol recirculation system. For more information, please have a look to the GPSA handbook

2.- Regardless of the pressure drop across a structured packing, a DP indication (alarm is optional) is required to let the operator know or alert for a potential clogging or a bad operation in the structured package

I hope this helps.

Cheers

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Mohommed Ilyas

Mohommed Ilyas Mullani

Process Engineer at Almeer Technical Services

Top Contributor

Dear Arijit,

I had worked with Internal manufacturers, so will brief you w.r.t structured packing.

2. Structured packing working principle is based on wetting rate & it performs efficiently when there is a good vapor-liquid distribution across the column. Many times structured packing gets choked due to impurities present in the stream, column performance deteriorates as packing is choked & gives a greater pressure drop across the bed.

Usually column diameter is designed considering the foaming factor at the initial stage itself. In severe foaming services a lower Fs value is expected so just check the Fs of your column & pH of the glycol circulated.

I am not an expert in TEG services, but have some experience in column internals & dia. sizing. I am not the exact person to advise but thought to share with you my ideas and hope it may help

you. :)

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ARIJIT SEN

Proposal Engineer at Process Group International

ARIJIT

@ wilfredo you are absolutely right that a filter or scrubber is located upstream the contactor and activated carbon filtration is included in regeneration system. But I want to know is it okk to avoid a DP if client don't ask for a DP across packing.

How common is the problem in field with TEG Dehydration Package.

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VIMALESH AGNIHOTRI

Senior Process Engineer at Engineers India Limited

VIMALESH

Dear Arijit, I will prefer to have a DP across structured packing in the contactor column to monitor the pressure drop in the column i.e. performance of the column, as this is the most important section of dehydration. Since bad performance of this will result the poor quality of dehydrated gas and you need to flare it, further your downstream need to be shutdown.

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👍 **ARIJIT SEN** likes this



Vagif

Vagif Gafarov

Sr. Process Engineer at KBR

The foaming is quite common problem in TEG reg's and can sometimes be solved by change out the structured packing which is adsorbing a lot of debris from TEG and degenerated H/C's. Sometimes this can also be reduced by playing T/P in the reboiler.

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👍 **ARIJIT SEN** likes this



Assylbek

Assylbek Zhaksylyk

Offshore CRO at Agip KCO

99% you should have DP gauge or transmitter across the structured packing and demister mesh in gas dehydration column to evaluate the efficiency of the dehydration process.

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