

Filtration. Separation. Solution.SM

Amine Systems Reliability Program: Comprehensive Fluid Management for Amine Systems



Process Survey

*Contamination
Evaluation*

*Technical
Recommendations*

Clean-Up Phase

*Technology
Implementation*

Long-Term Service



Pall Corporation

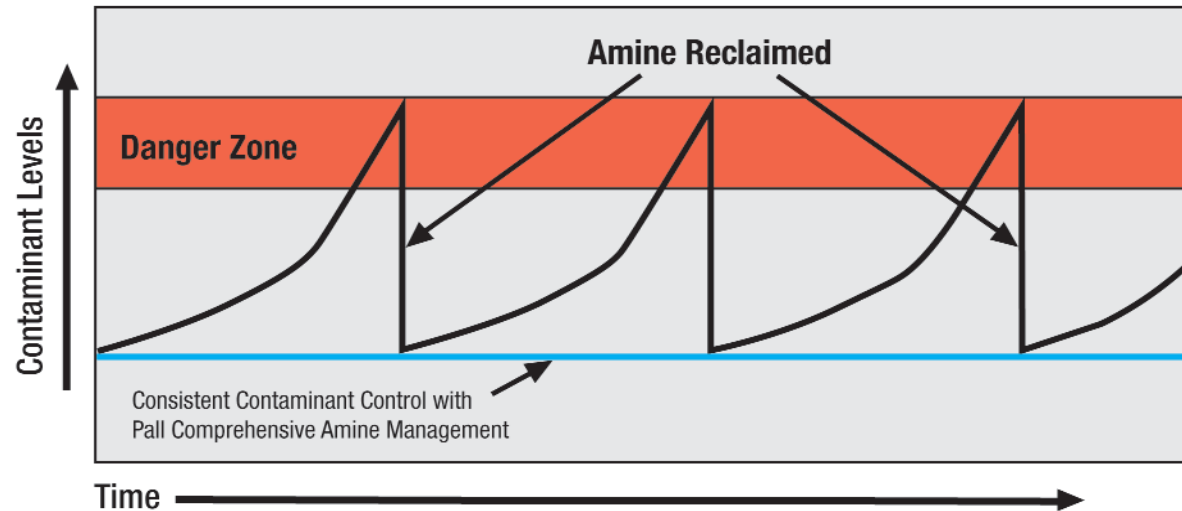


ECO-TEC

Amine Systems Reliability Program

Pall Corporation and Eco-Tec have created the **Amine System Reliability Program** designed to ensure consistent contaminant control and reliable amine system performance. The program consists of a comprehensive process and contamination evaluation, followed by technology recommendations, installation, and a long-term commitment to service.

Amine Systems Reliability Program Benefits



Staying Below the Danger Zone will:

- Reduce or eliminate Sulfur Plant Excursions
- Minimize Contactor Foaming Upsets
- Ensure Regenerator Reliability
- Consistently Meet Gas Specifications for H₂S

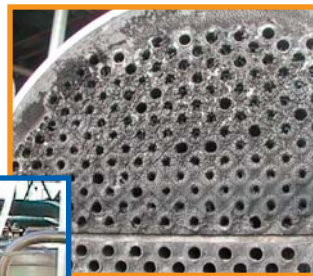
Recommended Technology

Pall Absolute-Rated Particulate Filters remove solids from liquid and are available in a broad range of removal ratings, flow capacity, and chemical compatibilities. Products include Ultipleat[®] High Flow filters, Marksman[™] filters, Profile[®] filters, Profile[®] Coreless filters, Nexis[®] filters, and Claris[®] filters.

Pall PhaseSep[™] Liquid/Liquid Coalescers separate two immiscible phases such as oil from amine and are able to separate difficult emulsions.

Pall SepraSol[™] Liquid/Gas Coalescers remove entrained liquid aerosols from a gas stream such as condensed hydrocarbons or pipeline chemicals.

AmiPur[®]-PLUS, using Recoflo[®] ion exchange technology, continuously removes Heat Stable Salts (HSS) from amine solutions. Removing and controlling the level of HSS not only increases system capacity and added value* but also reduces corrosion and related operating instability with up to:



- 35% Less NaOH Usage
- 35% Less Waste Volume
- 22% Less Water Usage
- 75% Less Resin Used

*per kg/hr of HSS removal

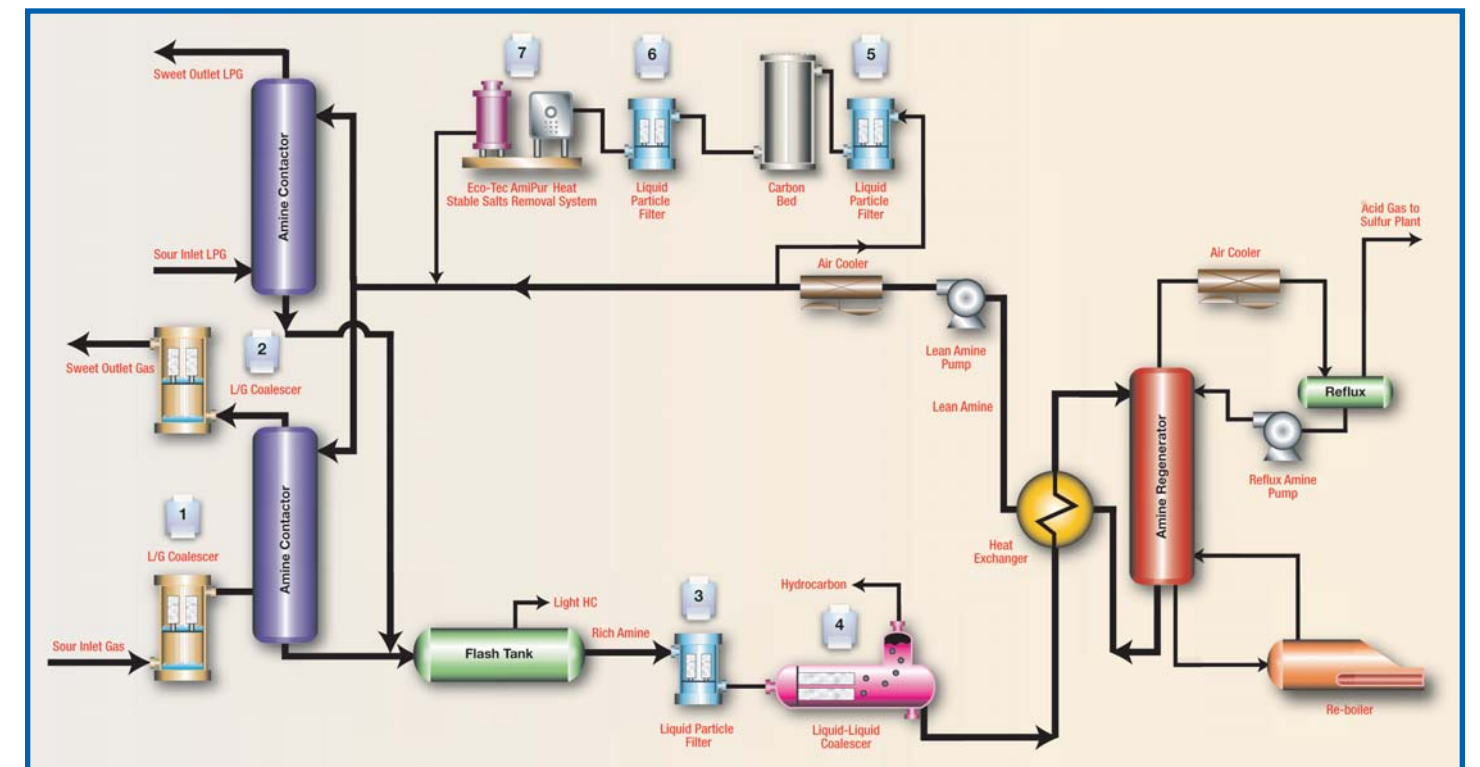


Amine Systems Reliability Program

Separation Technology Applications

- 1) Sour Inlet Gas** - Pall SepraSol[™] Liquid/Gas Coalescers will remove entrained liquid and solid aerosols in the sour inlet gas and reduce amine contamination. Removing contaminants at the source gas will effectively reduce contactor foaming, corrosion rates, and fouling in the amine system including contactor trays, heat exchangers, and the regenerator.
- 2) Sweet Outlet Gas** - Pall SepraSol[™] Liquid/Gas Coalescers will prevent amine carry-over from passing downstream where they may lead to contamination of additional purification processes such as glycol or molecular sieve driers, or recycle compressors, and can be used to debottleneck higher flow rates.
- 3) Rich Amine** - Pall Absolute-Rated Liquid Particulate Filters will remove corrosion products that may enter the amine system through the inlet sour gas or sour LPG, or are formed by corrosion of metallic components in the amine circuit.
- 4) Rich Amine** - Pall PhaseSep[™] Liquid/Liquid Coalescers will remove dispersed oil or hydrocarbons in the amine that can lead to heat exchanger and regenerator fouling.
- 5) Lean Amine** - Pall Absolute-Rated Liquid Particulate Filters will remove corrosion products and solids to protect the activated carbon bed.
- 6) Lean Amine** - Pall Absolute-Rated Liquid Particulate Filters will capture any carry-over carbon bed fines and prevent fouling of the amine contactor.
- 7) Lean Amine** - Eco-Tec AmiPur[®]-PLUS Heat Stable Salt (HSS) Removal System will remove dissolved impurities to maintain healthy amine circulating systems with <1% HSS content. A continuous purification process is used on a slipstream of lean amine to ensure reliable performance and consistently low HSS levels.

Comprehensive Fluid Management for Amine Systems



Treatment options will vary and not all purification steps listed may apply.

