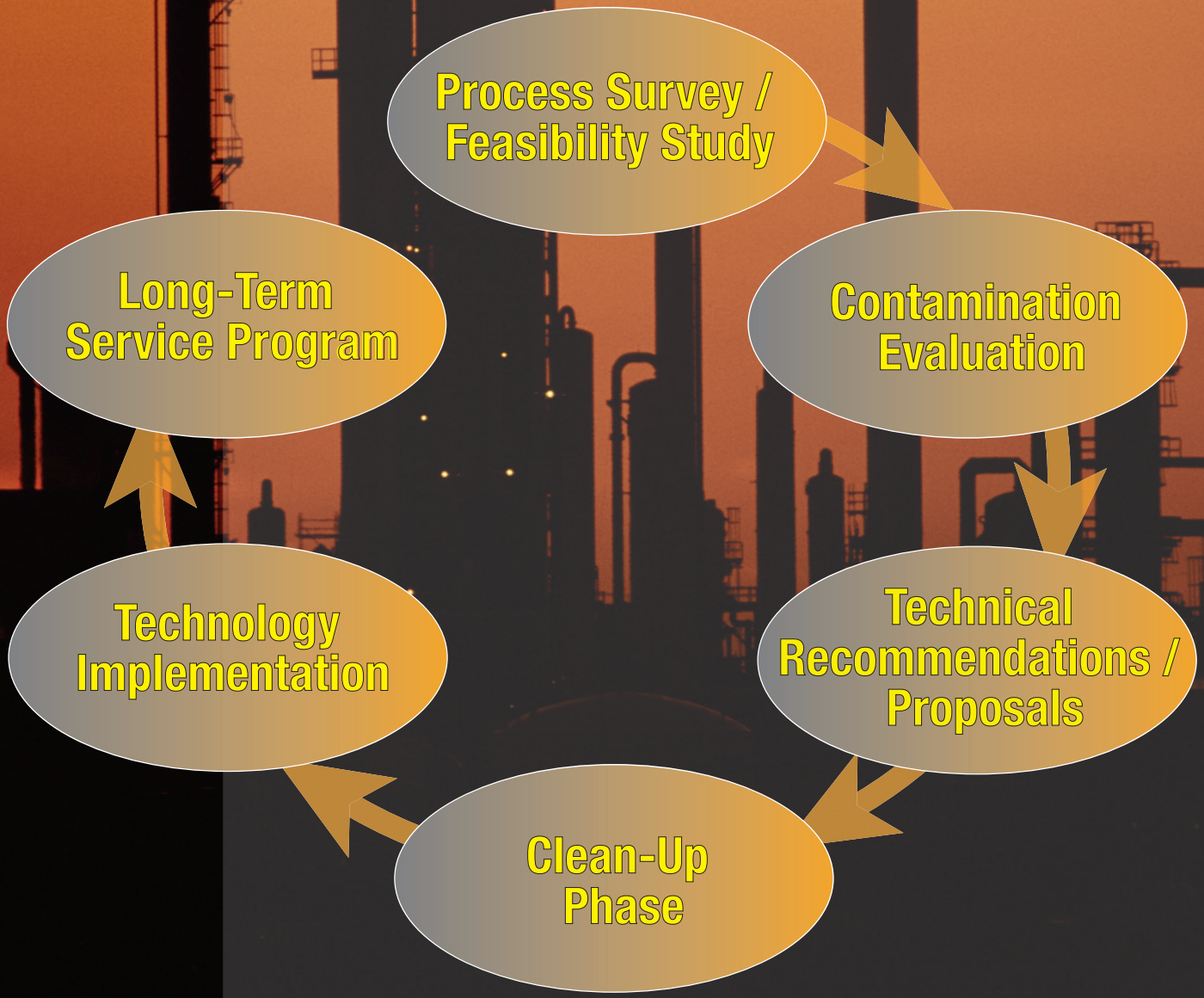
Pall Corporation

Amine Systems Reliability Program:

Comprehensive Fluid Management for Amine Systems



*Filtration. Separation. Solution.*SM

Where to Apply Separation Equipment

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.

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.

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.

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.

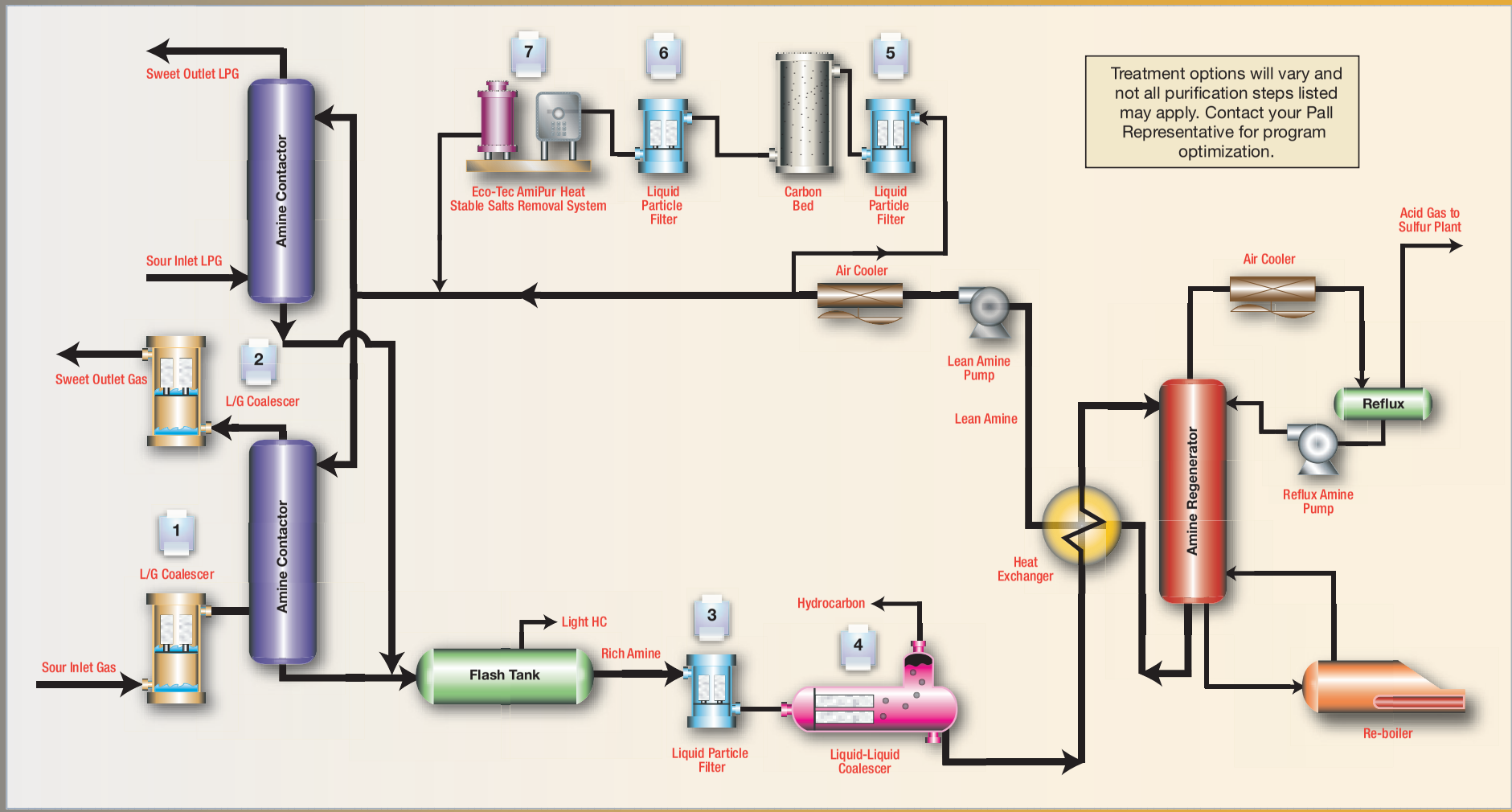
Lean Amine - Pall Absolute-Rated Liquid Particulate Filters will remove corrosion products and solids to protect the activated carbon bed.

Lean Amine - Pall Absolute-Rated Liquid Particulate Filters will capture any carry-over carbon bed fines and prevent fouling of the amine contactor.

Lean Amine - Eco-Tec AmiPur[1] 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.

[1] AmiPur is a trademark of Eco-Tec Incorporated.

Comprehensive Fluid Management for Amine Systems



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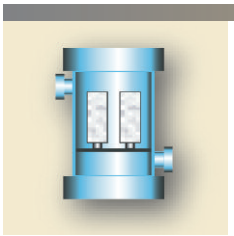
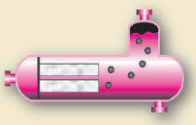
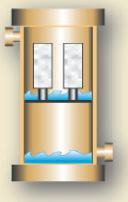
What Separation Equipment to Use



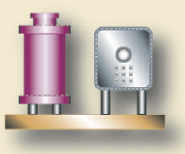
Pall absolute-rated particulate filters remove solids from liquid and are available in a broad range of removal ratings, flow capacity, and chemical compatibilities. Products include Ultipleat® High Flow filters, Marksman™ filters, Profile® filters, Profile Coreless filters, Nexis® filters, and Claris® filters.



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

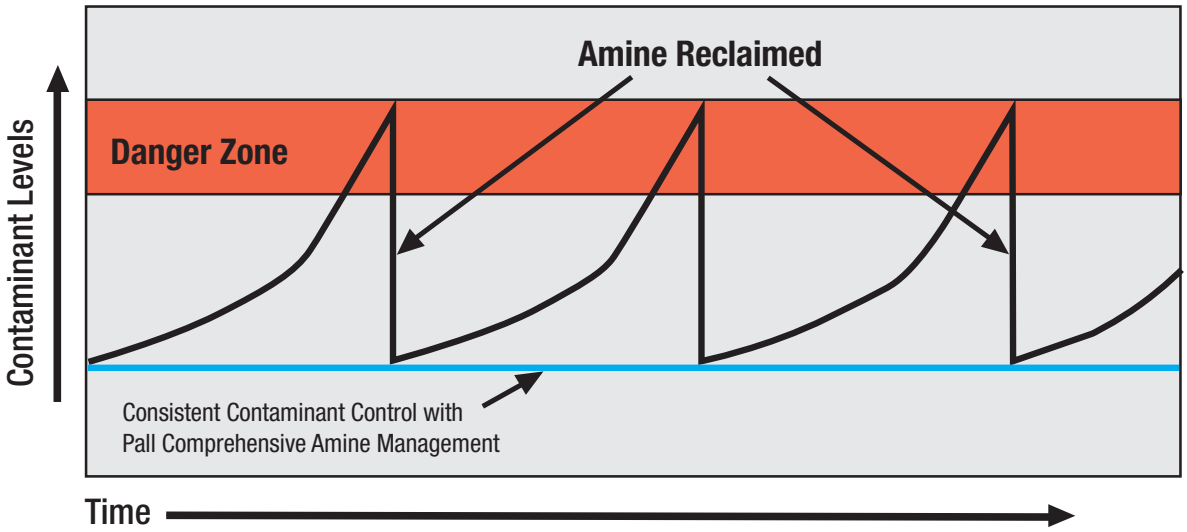


Pall SepraSol Liquid/Gas Coalescers remove entrained liquid aerosols from a gas stream such as condensed hydrocarbons or pipeline chemicals.



Eco-Tec AmiPur purification systems continuously remove Heat Stable Salts (HSS) and bicine from amines, maintaining them at low values in a skid mounted, fully automated unit that is proven and reliable with low operating cost.

Pall Comprehensive Amine Management



Staying Below the Danger Zone Will:

- Reduce or eliminate Sulfur Plant Excursions
- Ensure Regenerator Reliability
- Minimize Contactor Foaming Upsets
- Consistently Meet Gas Specifications for H_2S

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Pall Corporation has offices and plants throughout the world.

*Filtration. Separation. Solution.*SM