

CLEANING OF GAS TREATING SOLVENTS **DAHLMAN, A RELIABLE PARTNER**

The first application of alkanol amines as solvents for acid gas treatment, was patented more than seventy years ago. Since then, there have been many advances and nowadays a wide range of gas treating solvents is being used at gas treating plants all over the world. However in gas treating solvents such as:

- Alkanol Amines (MEA, DEA, MDEA, DIPA, DGA etc)
- Glycols (MEG, TEG etc)
- Sulfolane / NMP / MEK / MIBK etc.

contaminants can build up, seriously disturbing the operation and the treating capabilities of the unit. These contaminants must be avoided or be removed.

The following contaminants might be present and should be removed:

- Suspended Solids / Corrosion Products
- Hydrocarbons / Degradation Products
- Heat Stable Salts (HSS) / cationic & anionic components

Dahlman provides mechanical and process engineering, project management, production, commissioning and start-up services for nearly every type of gas treating filter application.

FILTRATION

Suspended solids such as FeS particles can plug up equipment and stabilize foam in contactor and stripper columns. These particles have a negative influence on the performance of the gas treating system. It is therefore very important to remove particles in an efficient and effective manner, by means of filtration.

Filters used in gas treating applications can be automatic filters (both on the lean and rich side of the system) or disposable filters.

Disposable filters

Important features of the Dahlman disposable filters are:

- Depth filtration combined with a large filter surface area;
- Small filter element consumption;
- Easy filter change-out (ergonomic design).

Automatic Backflush Filters

Advantages of the automatic Dahlman filters are:

- No use of pre-coat or filter-aid (no risk of break-through and no filter consumption costs);
- No or only very small amine losses;
- Fully automatic operation. Also during upset conditions;
- Short backflushing time;
- Good cleanability by gas assisted backflushing instead of liquid backwashing.



HEAT STABLE SALTS REMOVAL SYSTEMS

Anionic impurities in amine scrubbing solutions cause formation of amine Heat Stable Salts (HSS). Increased concentrations of HSS disrupt amine unit operation, cause excessive foaming and corrosion, increase amine losses and filter replacement frequency. Use of ion exchange to continuously remove by-products from amine solutions allows plants to achieve consistent operation and to substantially minimize the corrosion-related maintenance cost of amine gas treatment units.

Benefits

- Low HSS Level at All Times. Continuous removal of HSS allows for consistent performance of amine units under optimal conditions with minimal attention. Low HSS content has shown to dramatically reduce corrosion, thus extending the life of process equipment and reducing maintenance and filter replacement requirements.
- Versatility. Ion exchange units can be easily relocated to treat upsets at other amine units (for example, tail gas amine units).
- Low Operating Costs. It is a fully automated design. Its unique features operate with a low chemical requirement and minimal operator attention.
- Low Installation Costs. All systems are pre-assembled, pre-wired, and pre-tested before shipping, and the small unit size insures low shipping costs. The design meets industry hazardous classification standards.
- Small Space Requirement.



ACTIVATED CARBON ADSORPTION

Gas treating solution foaming is the most persistent operation problem encountered in natural gas production and refinery sweetening operations. Activated filtration has shown to remove surface-active contaminants such as hydrocarbons, which mainly contribute to foaming.

By selecting of the right carbon bed, with the correct adsorption characteristics and by using Dahlman activated carbon skids, an efficient removal of decomposition products, as well as high boiling HC, surfactants and emulsions will be established.



Besides the above described equipment, Dahlman designs and manufactures the following equipment, suitable for processing and cleaning up your amine inventory:

- Liquid / liquid and liquid / gas separators
- Cartridge filters
- Bag filters
- The patented Dahlman K-filter[®] and T-filter[®]
- Activated carbon filters
- (Dual) media filters / sand filters
- The patented Dahlman Automatic Etched Disc Filter (EDF[®])
- Automatic filters involving sinter metal elements with or without the application of pre-coat
- Automatic filters involving elements covered with filter cloth and the application of pre-coat
- The Merichem Fiberfilm[®] Contactor Technology
- Skid mounted units

Please feel free to contact our amine specialists!



Dahlman Industrial Group B.V.

P.O. Box 438, NL 3140 AK Maassluis

Noordzee 8, NL-3144 DB Maassluis

The Netherlands

Telephone +31-(0)10-599 11 12

Telefax +31-(0)10- 599 11 00

E-mail: dahlman@dahlman.nl

Homepage: www.dahlman.nl