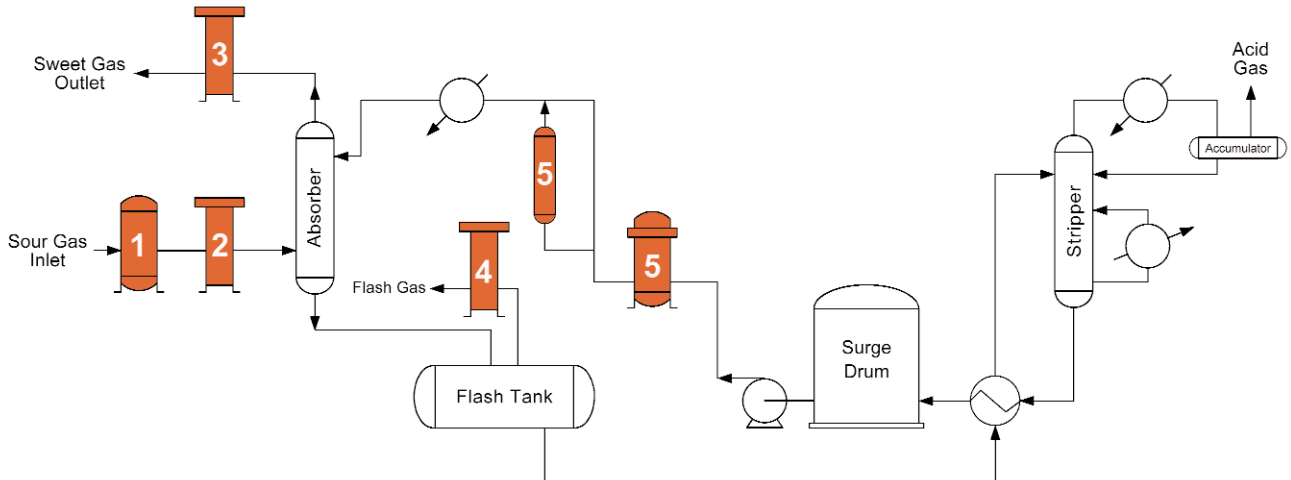




Sour Gas Treating



Amine Sweetening processes remove Hydrogen Sulfide (H₂S) and/or Carbon Dioxide (CO₂) from a sour gas stream so that it may be reintroduced into a refinery application or sent to flare. In this process the sour gases are typically process off-gas streams or sour gas from the coker, catalytic cracking unit, hydrotreating units and hydroprocessing units mixed with light refinery fuel gases. Before elemental sulfur can be recovered, the fuel gases (primarily methane and ethane) need to be separated from the hydrogen sulfide. This is typically accomplished by dissolving the hydrogen sulfide in a chemical solvent. Solvents most commonly used are amines, such as diethanolamine (DEA), or methyl diethanolamine (MDEA).

In the amine solvent processes, DEA solution or another amine solvent is pumped to an absorption tower where the gases are contacted and hydrogen sulfide is dissolved in the solution. The gases are removed for use as fuel in process furnaces in other refinery operations. The amine-hydrogen sulfide solution is heated and steam stripped to remove the hydrogen sulfide gas.

Operational Problems

1. Foaming in the amine contactor or stripper
2. Corrosion
3. Condenser or heat exchanger fouling
4. Activated Carbon Fouling

Solutions

1. A Nowata Filtration Model GSX vane scrubber is used to remove any liquid slugs in the sour gas stream prior to reaching the absorber.
2. A Nowata Filtration Filter/Separator using 1 micron NFG filter elements is used to remove hydrocarbon mists and solids from the sour gas stream prior to reaching the absorber to prevent amine foaming in the absorber.
3. A Nowata Filtration Coalescer using 0.3 micron NFF coalescing filter elements is used to reclaim any carry-over amine from the sweet gas stream leaving the absorber.
4. A Nowata Filtration Coalescer using 0.3 micron NFF coalescing filter elements is used to reclaim any carry-over amine or hydrocarbons from the flash gas stream leaving the flash tank in the rich amine stream after the absorber.
5. A 5 micron Nowata Filtration cartridge or bag filter followed by a Nowata Filtration Charcoal Absorber (bulk or canister style) is installed on the lean amine stream between the surge drum and the absorber to remove solid contaminants and carry-over hydrocarbon that can create heat exchanger fouling, corrosion and foaming in the stripper. The same Nowata Filtration equipment is used when installed in the rich amine stream between the stripper and absorber.



Growing Strong Since 1907
 Box 678, Nowata, OK 74048
 918-273-2204
 800-259-2204
 Fax: 918-273-2101
 www.nowata.com
 Email: sales@nowata.com