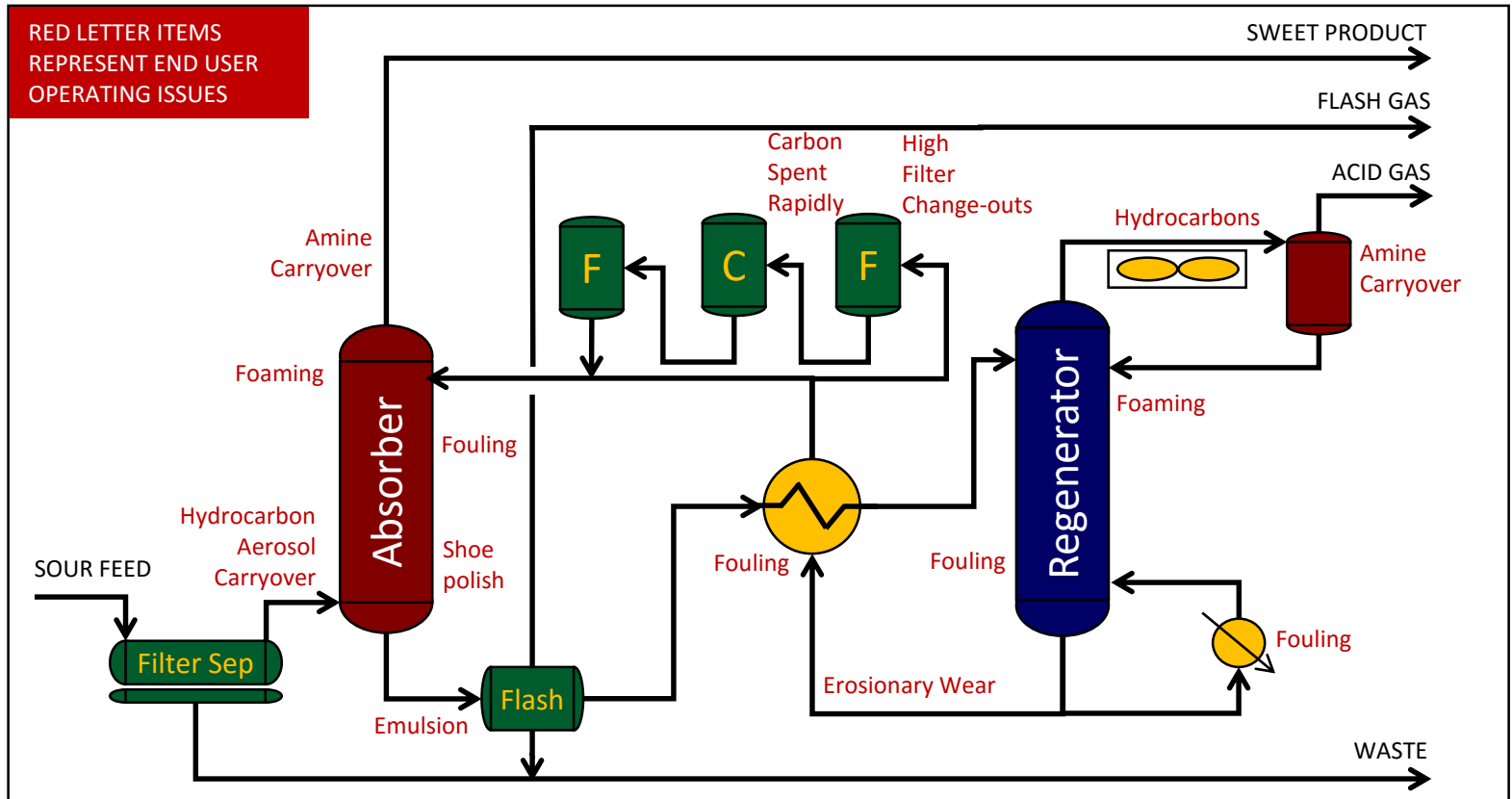


# Transcend IDEA™ Update – Amine System Optimization

Amine units suffer from many operating issues. These include foaming, fouling, exchanger efficiency losses, amine losses and ultimately treating constraints. These issues can be solved with better technology, by upgrading existing pressure vessels.



## TYPICAL OPERATING ISSUES

Optimal operation of amine absorption units requires efficient liquid/liquid or gas/liquid contact

The feed often contains heavy hydrocarbons (compressor lube oils, heavy aromatic naphtha (from corrosion inhibitor) or other chemicals from upstream processes). If these are not effectively removed, they will be washed into the amine. The flash tank is incapable of effectively removing these highly emulsified hydrocarbons. So, the heavy oils will enter the regeneration column where the light ends are boiled off. The remaining hydrocarbons either build up in the regeneration column or recirculate depending on boiling range. There are corrosion products formed due to the acid gases. The recirculating hydrocarbon affiliates with corrosion products to create a “shoe polish” which fouls trays, packing, and exchanger surfaces, as well as blinds filters and carbon beds. The hydrocarbon particulate dispersion will also stabilize foams. The tray fouling, exchanger fouling and foaming all impact treating capacity.

A symptomatic approach involves anti-foam addition, and heat-exchanger cleaning, carbon bed replacement etc

## ROOT CAUSE APPROACH: SEPARATIONS

Contamination control is the key parameter that defines efficient amine system operation. Elimination of the critical fouling agents either before they enter the system, or before they have an opportunity to recirculate within the system results in a dramatic impact on operating profitability.

Advances in analytical techniques have demonstrated the ineffectiveness of commonly used separation systems. We have combined principles of separations and process engineering to develop techniques to:

- ✓ Effectively remove heavy oil aerosols from inlet streams
- ✓ Recover heavy oil recirculating in amine streams
- ✓ Selectively remove particulates from recirculating amines
- ✓ Capture amine carryover in treated gas or liquid streams

## PRACTICAL IMPACT

- ✓ Improved column performance
- ✓ Reduced fouling of columns, carbon beds or exchangers
- ✓ Longer online life for filters
- ✓ Reduced amine losses
- ✓ Improved throughput