



Amines Based Absorption Technology

Amines Based Absorption Technology is one of the main technologies for removal of acidic components (like H_2S , CO_2 , Mercaptans and COS) from gas and liquid hydrocarbons streams. It is a process which can be found in almost every plant in the entire Oil & Gas as well as Petrochemical industry, Upstream, Midstream and Downstream.

Amine units are used to remove in general almost all H_2S to very low levels, in order to meet treated gas specifications. CO_2 can be removed to low levels as well, but often only part of the CO_2 needs to be removed, depending on the specifications. COS and mercaptans are more difficult to remove by amine, but often additives are added (like Sulfolane) to enhance the removal.

A few examples are:-

- CO_2 removal in LNG application with mixture of MDEA and piperazine in water. Able to meet LNG specs of < 50 ppmv.
- H_2S and CO_2 removal from sour gas at high pressure with MDEA meeting spec of 5 ppmv of H_2S , while slipping part of the CO_2 in order to arrive at < 2 mol % in sales gas.
- Amine unit in TGTU where H_2S is removed to the required level (for SO_2 emission), while CO_2 slip is maximised in order to avoid large CO_2 recycle to Claus.
- Treating of LPG for removal of H_2S and COS with Amines. DIPA or DEA can be used for this purpose. Mercaptans present can be removed by the Caustic process or by molecular sieves.



NAPTA can provide assistance during design, installation, operation and troubleshooting of these installations. In the project phase, NAPTA can support in technology selection, solvent selection and line-up selection. Also NAPTA can advise on equipment design and selection and advice on the materials for construction. NAPTA experts can conduct a site visit for better understanding of site-specific issues; and training of local operational and technical staff.

The provided services can help you to:-

- Identify causes of the problems encountered in your amine unit like foaming, fouling, corrosion and learn and experience how to prevent these problems.
- Optimise the operation of the unit and manage to increase the capacity of the unit. This can entail changing the solvent composition or switching to another amine solvent.
- Learn how to maintain the quality of the solvent and thereby improve the reliability of the unit.

For more information, please connect with NAPTA's Absorption Technology SME Mr Theo Brok via herein below contact details.

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