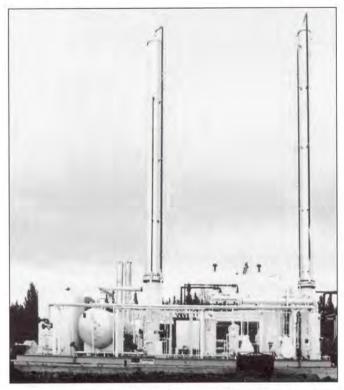
PRODUCTION EQUIPMENT LTD.



23 USGPM Packaged Amine Sweetening Plant

If Acid Gas {H₂S and CO₂} is present in your well effluent, it must be removed prior to use. This is normally achieved with the use of Amine.

ALCO Gas & Oil has over twenty-five years of experience in the engineering design and fabrication of plants to remove acid gas. We will custom design a plant utilizing the amine that best suits your process conditions. ALCO Gas & Oil has extensive experience with MEA, DEA, DGA and MDEA (and MDEA based proprietary amines).

There are more than one hundred plants designed and fabricated by ALCO Gas & Oil Production Equipment Ltd. in service at this time. The units range in size from 500,000 SCFD ($15 \times 10^3 \text{ m}^3\text{/d}$) to 50,000,000 SCFD ($1,500 \times 10^3 \text{ m}^3\text{/d}$) with amine circulation rates from 5 to 400 USGPM.

The ALCO team offers:

- · EXPERIENCE with over 100 plants in service.
- CUSTOM DESIGNED packages to meet your specific needs.
- ALTERNATIVES for removing the acid gas vary from the relatively simple MEA and DEA plants to the more sophisticated, selective solvents such as MDEA (and MDSA based proprietary amines).

Removal of Acid Gas with Amine

ALCO Gas & Oil will make a recommendation based on your particular requirements.

- OPTIONS offered routinely by ALCO Gas & Oil include inlet separation and/or slug catching, inlet compression filter separation (required to remove lube oil to minimize foaming), inlet heating, power generation, flare system, metering, control (ie: remote, local, computer, etc.), steam generation (for water makeup), amine reclamation, acid gas disposal and sulphur recovery, downstream gas scrubbing, dehydration and/or processing for hydrocarbon dewpoint control and/or liquid recovery.
- MODULAR DESIGN to meet specific transportation and/or installation requirements.
- SUPPORT SERVICE program for installation and operation.
- · COMPETITIVE pricing.

Information Required For Design Is: (English or Metric Units)

Min./Max. Ambient Temp.			°F
Information Required For Ed	ich In	let Stream:	
Composition (to C ₇₊ min)			Mol %
Flow Rate	MMscfd or B/D		
Inlet Pressure			psig
Inlet Temperature			°I
Water Content (ie. saturated)	@	°F &	psig
Vessel Design Pressure	_		psig
Corrosion Allowance			inches

Utilities Available:

Site Conditions:

- Outlet Gas Specification for H₂S and CO₂.
- · Shipping Limitations.
- · Delivery Point.

Removal of Acid Gas with Amine



117 GPM Gas Sweetening Plant (also see cover of folder).

AMINE SWEETENING PLANT

HOW IT WORKS

The inlet sour gas flows to the Amine Contactor which provides intimate contact between the gas and the downflowing amine. The gas leaving the top of the absorber has its acid gas content reduced to specification, (typically, ¹/₄ grain/100 SCF H₂S and 2.0 mole % max. CO₂).

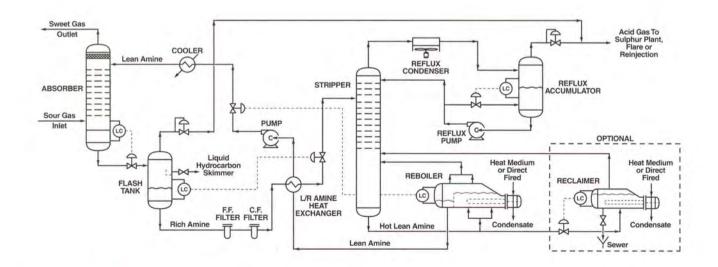
The rich amine is discharged via the Amine Flash Separator through the low pressure filter, (a filtered amine slip stream flows through the Charcoal Filter to remove any degredation product and hydrocarbon traces present in the amine) and rich Amine/Lean Amine Heat Exchanger to the upper section of the Amine Regenerator.

Amine regeneration occurs as steam from the Amine Reboiler warms the rich Amine in the Amine Regenerator causing the release of steam and the absorbed H₂S and CO₂. The vapour is cooled in the Reflux Condenser with the condensed water being pumped as reflux and the acid gas sent to skid edge.

The lean amine is cooled and pumped back to the Amine Contactor, completing the loop.

Provisions must be made for:

- · Amine reclaiming for MEA and DGA plants.
- · Water and amine make-up.
- Water and/or hydrocarbon dewpoint control.
- · Corrosion protection.
- · Anti-foam chemical injection when required.





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SALES OFFICE

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