Sulfur Management

Sulfur Management Solutions

The Air Liquide Global E&C Solutions technology portfolio includes proven solutions, looking back on the successful completion of more than 170 plants for sulfur removal and recovery processes.

Whether converting H_2S to sulfur or processing gases with different sulfur levels, our sulfur management technology can help customers meet environmental and efficiency targets.

Sulfur Management

Claus

The Claus process is the most widely used option worldwide for converting hydrogen sulfide to sulfur. Air Liquide Global E&C Solutions uses the Lurgi Claus technology, a highly efficient and reliable burner system. The claus burner is specifically designed for the destruction of mercaptans. This is the only solution on the market that completely eradicates these problematic substances.

OxyClaus®

The Lurgi OxyClaus® technology boosts the capacity of existing Claus and tail gas units by adding air and oxygen for more efficient combustion. This proprietary burner increases your operational flexibility – temporarily high or low amounts of hydrogen sulfide are efficiently managed by an automatic change over from air to oxygen operation and vice versa, without the need for additional equipment. OxyClaus® is capable of processing feed gases with hydrogen sulfide contents from 20 to 100 percent.

Emission-free sulfur recovery

For operations requiring residual H_2S levels below 10 ppm we offer a process that cools the product gases leaving the Claus plant to temperatures of around 125°C, precipitating the elemental sulfur.

The advantages of our emission-free sulfur recovery process include lower investment costs through the use of oxygen instead of air, and lower operating cost through reduced process gas volume.

Lurgi Tail Gas Treatment (LTGT®)

For even higher yields, you can decide on LTGT®, which uses selective chemical absorption for an outstanding recovery rate of 99+ percent. This extremely efficient method has a low pressure drop, and offers the possibility of using existing solvent regeneration units, saving equipment costs.

More stringent environmental regulations: With our Sulfur management technologies you meet World Bank Standards in terms of sulfur dioxide (SO_2) emissions providing scrubber solutions or giving you an alternative by using BASF's OASE yellow in our LTGT®.

Sulfreen®

With our patented sub-dewpoint tail gas treatment Sulfreen®, you can achieve sulfur yields of up to 99.6 percent. As it does not require chemicals or solvents, this process minimizes investment and operating costs.

And because it is a continuation of the catalytical Claus process, the sulfur recovery rate can be increased gradually using existing Sulfreen® equipment and simply adding more catalytical stages. Sulfreen® has successfully been employed in more than 45 sulfur recovery units.

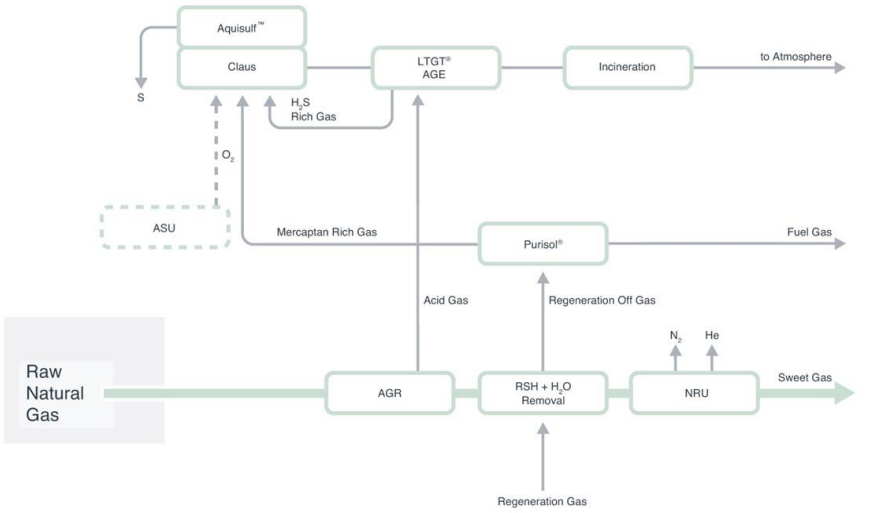
AQUISULF™ sulfur degassing

Liquid sulfur obtained in Claus units contains dissolved H_2S that can become desorbed during transportation and accumulate in the gaseous phase of transportation tanks. The H_2S in liquid sulfur has an adverse effect on the solidity of formed sulfur and particularly on the sulfur slate strength. Using the AQUISULF™ process, residual H_2S in liquid sulfur can be reduced to less than 10 ppm by weight.

OmniSulf®

OmniSulf® is a one-stop solution that brings together the key technologies involved in natural gas conditioning. This end-to-end, tailor-made process comprises Claus, AGE, LTGT®, Incineration, Aquisulf™, OASE purple, molsieves and Purisol. As the licensor, we have sole responsibility for the entire process, guaranteeing its effective integration and ensuring compliance with tight end-product specifications. And with just one interface, OmniSulf® is extremely convenient for clients.

Natural Gas Processing Scheme



AGE – Acid Gas Enrichment **AGR** – Acid Gas Removal **ASU** – Air Separation Unit
LTGT® – Lurgi Tail Gas Treatment **NRU** – Nitrogen Recovery Unit **RSH** – general formula for Mercaptan