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Physical:

—乙醇胺(Monoethanolamine) *also known as 2-hydroxyethylamine, ammonia, cholamine* ;

Molecular formula : C₂H₇NO

Molecular Weight: 61.08

Properties: colorless viscous liquid, ammonia odor and strong alkaline

Melting Point: 10.3 °C,

Boiling Point: 170°C,

Relative density: 1.0180 (20/4 °C);

It is infinitely miscible with water and ethanol.

Uses: Monoethanolamine is mainly used as plasticizer, vulcanizing agent, accelerator and foaming agent for synthetic resins and rubber, as well as intermediates for pesticides, pharmaceuticals and dyes. It is also a raw material for synthetic detergents, emulsifiers for cosmetics, etc. In the textile industry, it is used as a printing and dyeing brightener, antistatic agent, mothproofing agent, and detergent. It can also be used as carbon dioxide absorber, ink additives, and petroleum additives.

Monoethanolamine is widely used as a purification liquid for extracting acidic components from various gases (e.g., natural gas, petroleum gas).

Drilling fluid additives:

To ensure the success of the drilling operation, it is necessary to select the appropriate drilling fluid, and the composition of the drilling fluid used in the operation is determined according to the specific situation and needs. Polymers are one of the additives of drilling fluids, and their special properties make them indispensable components of drilling fluids. Due to its high solubility in water and its swelling in water, starch is a natural polymer widely used in the drilling industry.

Monoethanolamine can be used as a novel additive in water-based drilling fluids to improve the thermal stability of starch. One of the main disadvantages of starch is that it fails under high temperature and high pressure conditions. The maximum temperature at which it plays a role is only 121 °C, and the presence of monoethanolamine can avoid the hydrolysis of starch at high temperatures, improve the thermal stability of starch, and increase the temperature resistance of starch to 160 °C. Due to the formation of hydrogen bonds with starch, the presence of monoethanolamine significantly increases the apparent viscosity, plastic viscosity, dynamic shear force and static shear force of the drilling fluid, and significantly reduces the filtration rate of the drilling fluid and reduces the thickness of the mud cake.

(Reference: Effect of monoethanolamine on the thermal stability of starch in water-based drilling fluid systems)

Alcohol amine desulfurization:

Ethanolamine is mainly used as a desulfurizer in gas purification, one is oil gas desulfurization, and the other is syngas desulfurization. At present, a number of domestic petroleum refining and large and medium-sized ammonia synthetic plants use ethanolamine desulfurization process, which is a commonly used high-efficiency desulfurization agent abroad, but mainly diethanolamine.

(Reference: Ethanolamine Production and Market Analysis).

The alcohol amine method is currently the most commonly used natural gas desulfurization and decarburization method, mainly using solvents such as MEA, DEA, DIPA, DGA and MDEA. The alcohol amine method is suitable for occasions where the pressure of the acidic components in the natural gas is low and the content of the acidic components in the purified gas is low. Because the alcohol amine method uses an aqueous solution of alcohol amine, the water content in the solution can minimize the absorbed heavy hydrocarbons, so it is very suitable for natural gas desulfurization and decarburization with high heavy hydrocarbon content. Alcoholamine solutions such as MDEA also have the ability to selectively remove H₂S in the presence of CO₂. The disadvantage of the alcohol amine method is that the reaction between some alcohol amines and COS and CS₂ is irreversible, which will cause the chemical degradation loss of the solvent, so it is not suitable for natural gas desulfurization and decarburization with high COS and CS₂ content. Alcohol amines are also corrosive, and H₂S and CO₂ in natural gas can cause equipment corrosion. In

addition, as a desulfurization and decarburization solvent, the rich liquid (that is, the solution after absorbing the acidic components in natural gas) needs to be heated during regeneration, which not only consumes high energy, but also occurs thermal degradation when regenerated at high temperatures, so the loss is large.

Fig.1 Typical process flow chart of alcohol amine desulfurization

(Reference: Alcohol amine desulfurization process)

Market:

99.9% content: 9300~9900 yuan/ton

99.5% content: 9200~10000 yuan/ton

<http://chem.100ppi.com/price/plist-1346--1.html>

In addition, some web pages and online shopping platforms were also inquired, but the price was not clearly marked, and it was basically necessary to contact further for inquiry.