

H₂S absorption with ammonia liquor from Coke Oven Gas

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Experimental research was carried out to improve the selective solubility of H₂S in Coke Oven Gas with various method.

The optimum concentrations of concentrated ammonia liquor from dissociator and crude ammonia liquor from NH₃ scrubber were 18g/L and 8g/L, respectively. Changing the feeding stage of the concentrated ammonia liquor also affects absorption efficiency of H₂S and it was clarified that absorption efficiency of H₂S was higher when the concentrated ammonia liquor was fed to the upper stage of H₂S scrubber than the lower stage.

The absorption efficiency of H₂S was also affected by the flow rates of the concentrated ammonia liquor and the crude ammonia liquor. The increase of the crude ammonia liquor by 10% can improve absorption of H₂S in COG.

The increase of temperature by 5°C decreases absorption of H₂S by 2%. The addition of softening water into the stripped liquor that is fed to the ammonia washer #2 improves absorption of H₂S, and the optimum mixing ratio of softening water to stripped liquor was 1:1.

The addition of chemical agents like NaOH and MEA into the crude ammonia liquor was also carried out.