



Ammonia Membrane Stripping

PRINCIPLE

By raising the pH and the temperature in an ammonia rich fluid, the equilibrium is shifted from $\text{NH}_4(\text{aq})$ to $\text{NH}_3(\text{g})$. The $\text{NH}_3(\text{g})$ diffuses in an acidic solution through a gas permeable membrane where it is trapped as $\text{NH}_4(\text{aq})$.

PROCESS

The process uses a gas permeable membrane to transfer $\text{NH}_3(\text{g})$ from one side of the membrane to an acidic solution. Often sulfuric acid is used in order to produce ammonium sulphate as a fertilizer. Characteristics of the process are: small footprint, little energy use and recovery of ammonium as a fertilizer.

APPLICATIONS

The process can be used to recover ammonia from nitrogen rich streams and at the same time produce ammonium sulphate fertilizer.

Some examples are:

- Reject water from (sludge) digesters
- Manure treatment
- Industrial wastewater
- Landfill leachate

