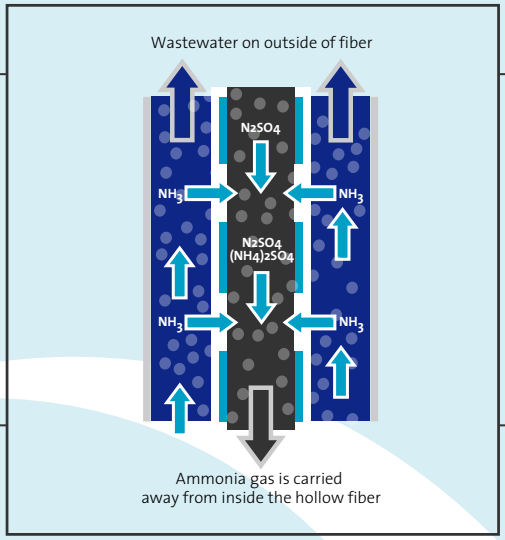
Ammonia Membrane Stripping

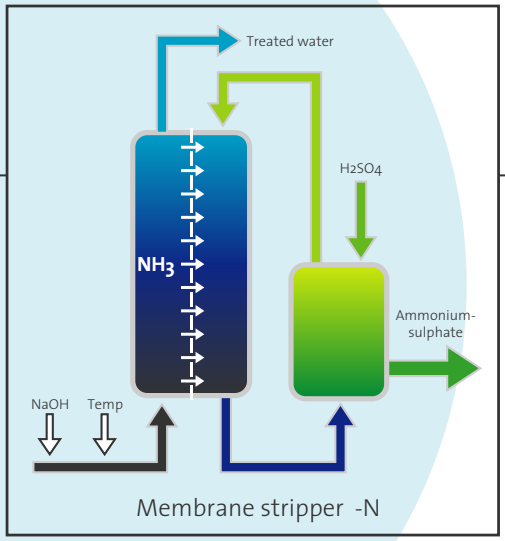
PRINCIPLE

By raising the pH and the temperature in an ammonia rich fluid, the equilibrium is shifted from $NH_4(aq)$ to $NH_3(g)$. The $NH_3(g)$ diffuses in an acidic solution through a gas permeable membrane where it is trapped as $NH_4(aq)$.



PROCESS

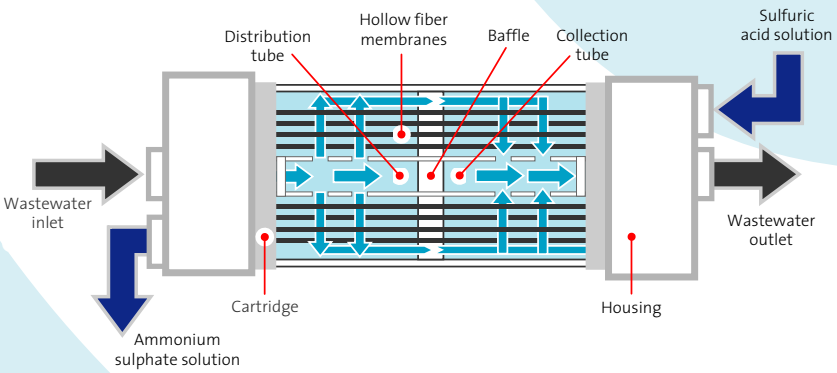
The process uses a gas permeable membrane to transfer $NH_3(g)$ from one side of the membrane to an acidic solution. Often sulfuric acid is used in order to produce ammonium sulphate as a fertilizer. Characteristics of the process are: small footprint, little energy use and recovery of ammonium as a 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



Ammonium membrane module

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