

## **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**

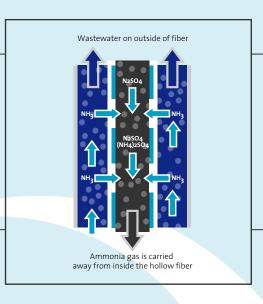
The process uses a gas permeable membrane to transfer  $NH_3(g)$  from one side of the membrane to an acidic solution. Often sulfuric acid is used in order to produce ammonium sulphate as a fertilizer. Characteristics of the process are: small footprint, little energy use and recovery of ammonium as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

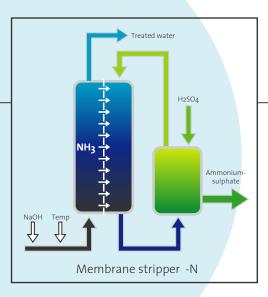
## **APPLICATIONS**

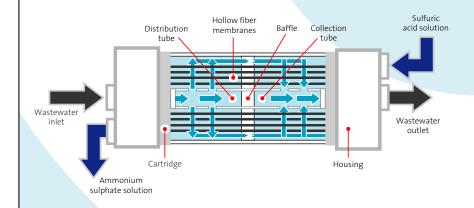
The process can be used to recover ammonia from nitrogen rich streams and at the same time produce ammonium sulphate fertilizer.

Some examples are:

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







Ammonium membrane module

