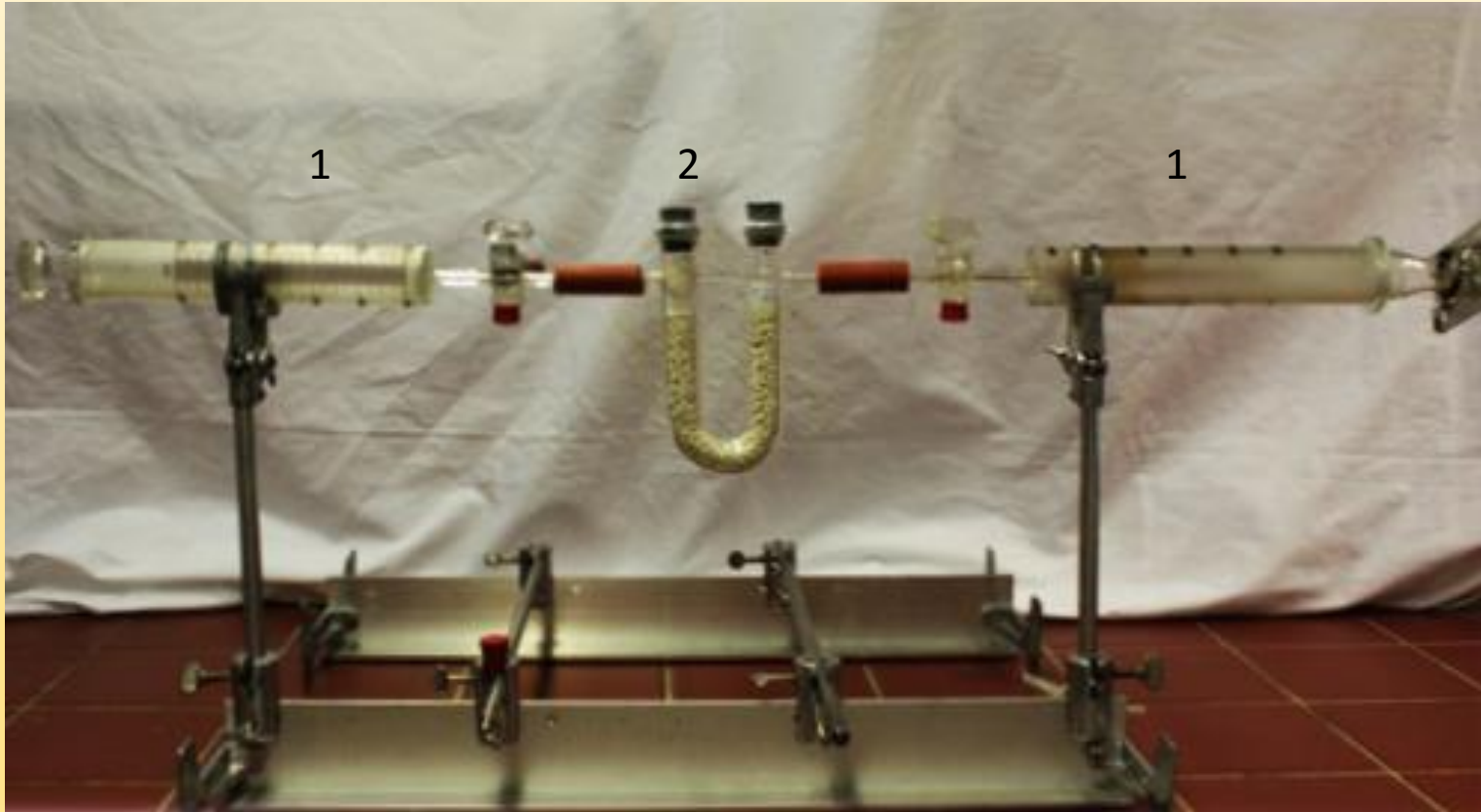


Gas Purification

Construction and process



1. Piston with biogas ($\text{CO}_2 + \text{CH}_4$)
2. U-pipe filled with soda lime ($\text{NaOH} + \text{Ca}(\text{OH})_2$)

Watch out !
Don't get in any contact with the soda lime!

Chemical process

- Soda lime: $\text{NaOH} + \text{Ca(OH)}_2$
- Gas mixture: $\text{CO}_2 + \text{CH}_4$

- $\text{CO}_2 + 2\text{NaOH} \longrightarrow \text{Na}_2\text{CO}_3 + \text{H}_2\text{O}$
- $\text{Na}_2\text{CO}_3 + \text{Ca(OH)}_2 \longrightarrow 2\text{NaOH} + \text{CaCO}_3$

- No reaction with methane

Measurements

- Gas will appear in the other piston
- Repeat this process several times
- The gas-filled piston shows the amount of methane in the gas mixture
- Use the initial set and the amount of methane to find out the ratio of the gases