



FH MÜNSTER
University of Applied Sciences

CIW

Fachbereich Chemieingenieurwesen
Department of Chemical Engineering

Lab Work “Practical Module”

Experimental description

Stoichiometric precipitation and gravimetric analysis

of Calcium oxalate monohydrate:

(Version 1/2024)

1. Preparation for the laboratory course:

- Read the experiment instructions.
- Clarify open questions.
- Write down the equation for the reaction of calcium carbonate with oxalic acid.
- Calculate whether calcium carbonate or oxalic acid is used in excess based on the amounts, which are described below.

2. Task: Lab work starts at 8:30 in the morning

- Weigh in 500 mg of calcium carbonate and dissolve it in a 200 ml glass beaker in diluted hydrochloric acid. Adjust the pH value to pH 6 with diluted sodium hydroxide solution.
- Weigh in 1500 mg of oxalic acid and dissolve it in a 200 ml glass beaker in 50 ml water.
- Fill the oxalic acid solution into a dropping funnel and drop the oxalic acid solution into the calcium solution while stirring.
- Allow the resulting calcium oxalate monohydrate precipitate to age for 10 minutes and then filter it out.
- Wash the calcium oxalate monohydrate with the mother liquor and 100 ml ethanol.
- Then dry the obtained product at 90 °C for 30 minutes in the drying cabinet.
- Weigh out the product and calculate your yield.