# Dissolution of MCC in NaOH and Urea

## Introduction

This protocol dissolves microcrystalline cellulose (MCC) in NaOH and Urea and Is followed by coagulation with 2 M acetic acid.

## Reagents

- 10 g MCC
- 4 g of 0.5 M urea solution
- 0.6 g of 0.5 M NaOH solution
- 2 M acetic acid

## Equipment

- 125 mL Erlenmeyer flask
- Magnetic stir plate
- Magnetic stir bar
- Centrifuge
- Glass plate

## Procedure

1. In a -5°C cold room, mix 10 g of MCC, 4 g of a 0.5 M urea solution, and 0.6 g of a 0.5 M NaOH solution in an Erlenmeyer flask. Stir the solution for 5 minutes to create a slurry.
2. Hold the solution at -5°C for about 5 hours, then thaw with intermittent mixing at 0°C-4°C to make a transparent solution.
3. Remove insoluble parts of cellulose by centrifuging at 8000 rpm for 30 minutes.
4. Cast the solution onto a glass plate, taking care to spread it out to about 0.2-0.3 mm, and coagulate it immediately in 2 M acetic acid for 5 minutes.