Welcome to BioFabricating Materials (week 7) at Fabricademy 10th edition

LuizA Naslyan's Biomaterial recipes

# Recipe with beeswax

### Ingredients

- **Water** 60 ml
- **Beeswax** 15 gr
- **Gelatine** 12 gr
- **Glycerine** 5-10 gr
- **Clay** 5 gr
- **Liquid soap** 1-2 drops

### Ingredients (Batch 2)

- **Water** 120 ml
- **Beeswax** 35 gr
- **Gelatine** 24 gr
- **Glycerine** 16 gr
- **Green clay** 10 gr
- **Liquid soap** 4 drops

**NOTE:** Soap is a must for recipes with beeswax; it helps to dissolve beeswax in water.

**Steps:**

- pour water into the pot and bring to around 60°C on a stove;
- add the beeswax and soap; stir well;
- add gelatine and glycerine gradually while stirring continuously;
- add the clay for color, texture, and properties;
- pour the mixture into the wooden frame fastened to the leather in advance;
- make sure it is evenly distributed and touches the wooden frame;
- leave several hours; touch it slightly, and when it's dry, peel it off carefully with the wooden frame. Hang or lean it tilted on a surface so it can dry from both sides.

**Properties:**

- smells amazing due to the beeswax
- it is textured like sand due to the clay
- it is waterproof due to the beeswax
- it is slightly stretchable giving the pieces an organic feel

## Recipe with gelatine

### Ingredients (Composite)

**Water** 120 ml

**Gelatine** 48 gr

**Glycerine** 15 gr

**Dried leaves and petals** To texture

**Steps:**

- pour water into the pot and bring to around 60°C on a stove;
- add gelatine and glycerine gradually while stirring continuously;
- pour the mixture into the wooden frame fastened to the leather in advance;
- make sure it is evenly distributed and touches the wooden frame;
- add the leaves and petals, submerge them slowly in the mixture;
- leave several hours; touch it slightly, and when it's dry, peel it off carefully with the wooden frame. Hang or lean it tilted on a surface so it can dry from both sides.

**Properties:**

- smells neutral
- it is textured like plastic, shiny, relatively smooth
- it is not stretchable

## Recipe with gelatine (foam)

### Ingredients (Foam/Surface Finish)

**Water** 120 ml

**Gelatine** 48 gr

**Glycerine** 15 gr

**Liquid soap** 8 ml

**Powdered nettle** On top

**Steps:**

- pour water in the pot and bring to around 60°C on a stove;
- add gelatine and glycerine gradually while stirring continuously;

- add liquid soap to the mixture and mix to create bubbles;
- pour the mixture in the wooden frame fastened to the leather in advance;
- make sure it is evenly distributed and touches the wooden frame;
- sieve some nettle powder;
- leave several hours; touch it slightly, and when it's dry, peel it off carefully with the wooden frame. Hang or lean it tilted on a surface so it can dry from both sides.

**Properties:**

- smells neutral
- it is textured like a sponge
- it is slightly stretchable

## Recipe with agar

### Biomaterial Recipe (Agar Base)

**Water** 83 ml

**Glycerine** 5 gr

**Agar** 1.6 gr

**Corn starch** 1 gr

**Steps:**

- pour water into the pot and bring to around 60°C on a stove;
- add agar and glycerine gradually while stirring continuously;
- add corn starch;
- pour the mixture into the wooden frame fastened to the leather in advance;
- make sure it is evenly distributed and touches the wooden frame;

- leave several hours; touch it slightly, and when it's dry, peel it off carefully with the wooden frame. Hang or lean it tilted on a surface so it can dry from both sides.

## Recipe with gelatine and alginate

### Biomaterial Recipe (Avocado Composite)

**Avocado dye** 240 ml

**Gelatine** 48 gr

**Glycerine** 15 gr

**Alginate** 1 gr

**Ground red leather scraps** 3 gr

**Dry seeds** 1 gr

**Steps:**

- pour water in the pot and bring to around 60°C on a stove;
- add gelatine and glycerine gradually, meanwhile keep stirring;
- mix alginate with water separately in advance then add it to the mixture and stir;
- pour the mixture in the wooden frame fastened to the leather in advance;
- make sure it is evenly distributed and touches the wooden frame;
- add the scraps and seeds, submerge them;
- leave several hours; touch it slightly, and when it's dry, peel it off carefully with the wooden frame. Hang or lean it tilted on a surface so it can dry from both sides.

**Properties:**

- smells neutral
- it is textured like a bit rough plastic
- it is slightly stretchable

# Yarn with alginate

## Scaled Alginate & Curing Bath Recipe

**Water (main)**800 ml

**Glycerine**40 gr

**Alginate**24 gr

**Sunflower oil**20 gr

### Curing Bath (Cross-linking)

**Water (curing)**1000 ml

**Calcium chloride hydrate**100 gr

**Steps:**

- measure and pour water into the pot;
- add glycerine gradually while stirring continuously;
- add sunflower oil;
- add alginate and mix very little to avoid having bubbles; leave it, the water molecules will continue dissolving the alginate; mix very little from time to time until the mixture looks homogeneous.

Make the curing liquid with calcium chloride hydrate and water. Make sure the pot is big and there is enough water for the yarns to float well. Use a big syringe and inject the alginate mixture 2 centimeters above the liquid surface, meanwhile keep moving your hands so the yarns will not end up on top of each other and stick. Once you inject 1 or 2 syringes of alginate, pause, take the yarns out with tongs and gloves on, rinse and put to dry. Make sure the yarns do not intersect.

**Properties:**

- the yarns smell neutral
- they are textured like plastic or silicone yarns
- they are waterproof and heatproof
- they are strong enough to stretch and weave a bracelet.