

Can Menthol Remove Ink
from T-shirt ?

Background

- Our seniors were searching for environmentally friendly substances
- Peppermint oil can remove ink from T-shirt
- Peppermint oil contains menthol



Purpose

To research if menthol has **stain-removing effect**

Motive

Got interested in previous research our seniors did

Question

Can menthol **remove ink from T-shirt?**

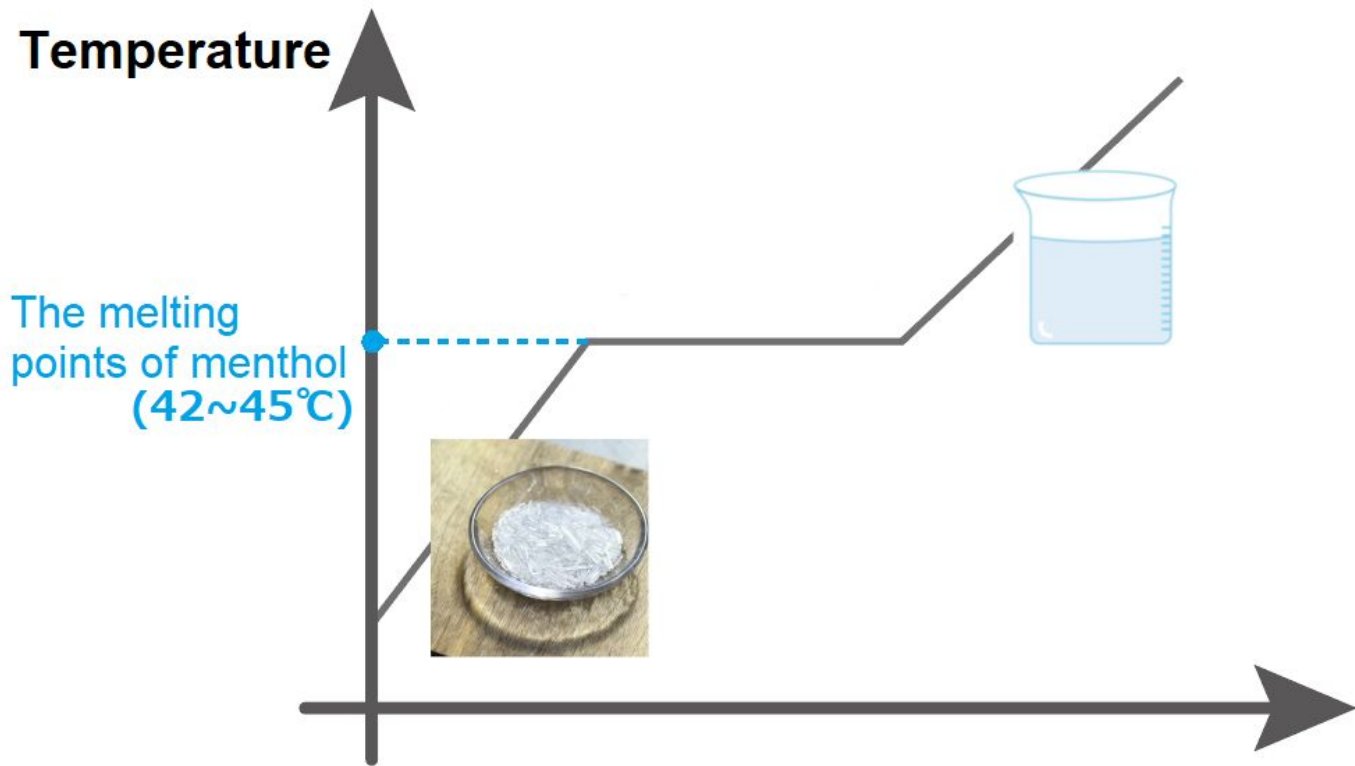


Experiment 1

- We don't know this white substance “we bought as menthol” is really menthol.
- It can be proved that it is menthol by measuring the melting points.



Experiment 1



Results1

- The result was that the melting point of the substance was in range of about

42 to 45 degrees

- We can use

substance as menthol !

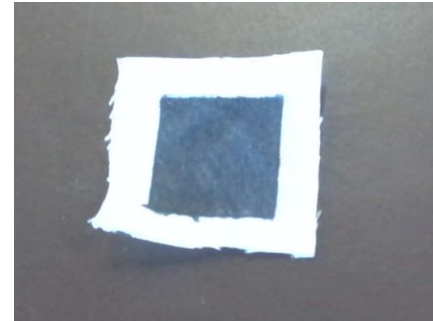


| | Temperature |
|-------------|-------------|
| First time | 45.6°C |
| Second time | 44.9°C |
| Third time | 43.9°C |
| Average | 44.8°C |

Experiment2

preparation

- spectrophotometer
- clothes
- solutes
- permanent marker



インク色：黒

Experiment2

Method

- ① Cut **three kinds of cloth** (hemp, cotton, and polyester) and draw a square of 2 cm on each .
- ② Measure the color of the sample by **using the spectrophotometer**.
- ③ **Make aqueous solutions** and put clothes into it

④ **Stir** it for 3 minutes by using a stirrer.

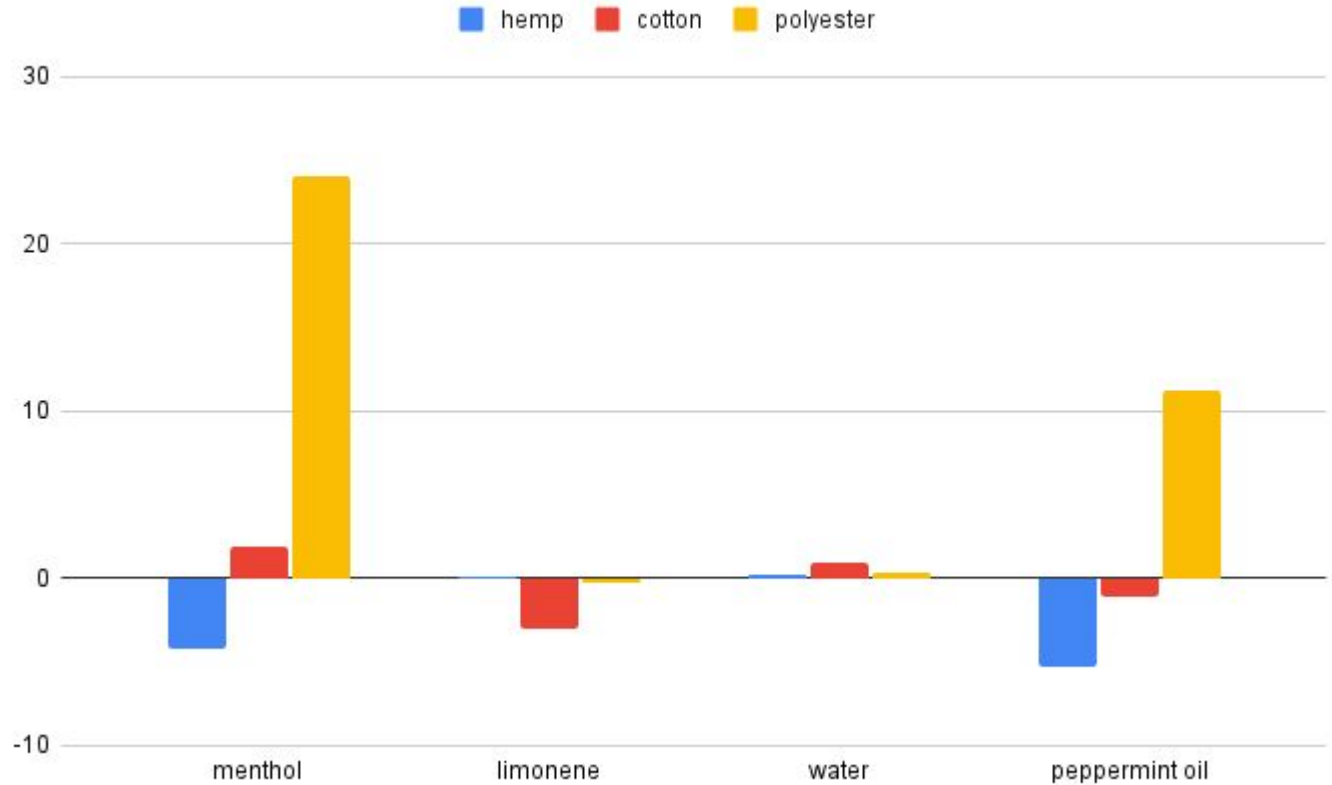
⑤ Stir again with water for 3 minutes,
dry it.

⑥ **Measure the color** of the
sample again.



result2

amount of brightness



Thank you for listening 