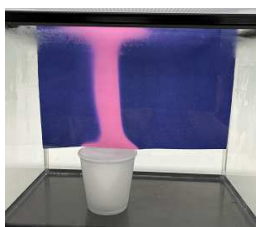


P70-2614-W0

Reusable Thermo-sensitive Cloth



[Product Description]

This specially designed cloth repeatedly changes its color from dark blue to pink, and vice versa, with a temperature threshold of 30°C.

[Overall Advantages to Users]

- ✓ Heat conduction/convection can be visualized by the color change in the cloth that occurs when heat flows through the medium.
- ✓ The product can detect subtle thermal changes caused by, for example, steam rising from hot water in a cup thanks to the high thermal sensitivity.

[To teachers]

- ✓ Color change in the cloth helps students better understand how heat conducts and/or convects in the medium like air.
- ✓ The cloth is highly responsive to a thermal change in the medium thanks to its low heat capacity.

[To students]

- ✓ Possible to visually perceive the heat slowly transferring/diffusing in a medium as a color change in the cloth.

[Specifications]

- Material: Polyester
- Color change occurs at around 30°C (from dark blue to pink)
- Size: 210 mm x 220 mm (x 5 pcs)

[Precaution]

- ✓ When storing, avoid direct sunlight and high temperatures because the pigment contained in the cloth can be degraded by UV light and/or high heat.
- ✓ Keep the room temperature less than 30°C when in use.

[Maintenance]

- ✓ Washable, hand wash only.
- ✓ Dry in shade only.
- ✓ After use, evenness of the color of the cloth deteriorates. If this happens, put the cloth in a refrigerator for a while until it is evenly colored in dark blue.

[Example of demonstration]

Heat convection in the air

[What to prepare]

1. Reusable Thermo-sensitive Cloth x1 pc
2. Transparent water tank with a lid x1 pc
3. Beaker or coffee cup x1 pc
4. Cellophane tape x1 pc
5. Hot water
6. Paper clips x2 pcs

[How to demonstrate]

1. Place an empty beaker (or a cup) inside a tank.
2. Measure the vertical distance between the upper surfaces of the tank and the beaker.

3. Cut or fold the cloth, in such a way that the length of the short side is less than the distance measured in above 2.
4. Hang the cloth from the lid with help of tape after determining horizontally optimum position to use as the cloth's contact area on the lid.
5. Clip the base of the cloth with two paper clips used as weights.
6. Place the beaker filled with hot water on the bottom of the tank.
7. Put the lid on the top of the tank.
8. Observe how the cloth color changes.

[Example of experiment]

Property of heat retention

[What to prepare]

1. Reusable Thermo-sensitive Cloth: x 3 pcs
2. 300 ml beaker x 1 pc
3. Hot water (200 ml)
4. Plate (10x10 cm) (each x 1 pc)
(glass, metal, and plastic)

[How to demonstrate]

1. Pour hot water into a beaker.
2. Place a glass plate on the top of the beaker as a lid.
3. Cover the whole beaker with the cloth.
4. Observe how the heat transfers on the plate.
5. Change the plate to a metal or plastic one.
6. Determine which matter has the highest efficiency in the heat retention.

[Keywords]

Heat convection
Heat conduction
Heat retention and radiation

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