

A hole in coffee

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Słowa kluczowe:

alcohol, woda

DZIEDZINA:

Chemistry

Cel doświadczenia:

How to make a hole in spilt coffee?

Spis materiałów:

1. a light-coloured flat plate
2. brewed coffee in a mug (instant coffee will be fine)
3. a dropper
4. a few drops of spirit (salicylic alcohol will be fine)

Etapy realizacji:

1. Pour some coffee onto a flat plate; the coffee must be shallow but cover the entire bottom of the plate.
2. Take some spirit into the dropper.
3. By means of the dropper, let a few drops of spirit out onto the plate.

!!!Caution!!! do not use very hot coffee for the experiment.

Pytania do doświadczenia:

1. Why can the hole only be observed on spilt liquid?
2. Why does the effect disappear when the solutions are mixed together?
3. Which other spilt liquids have a hole when drops of spirit are added to it?

Opis zjawiska:

Капли спирта не будут соединяться с кофе, но они сделают отверстие в нем. Наблюдаемый эффект обусловлен структурой молекул спирта, поскольку только одним концом (группой -ОН) молекулы спирта объединяются с молекулами воды. После смешивания кофе с алкоголем эффект больше не виден.

Ciekawostki:

1. Mixing coffee (water) with spirit is an exothermic reaction, i.e. one that releases heat.
2. During the mixing of alcohol and coffee (water) the phenomenon of contraction, i.e. decreasing in volume, takes place. The decrease in the volume of the solutions results from

the formation of new hydrogen bonds between the molecules of alcohol and water. The distance between the molecules changes, which leads to the decrease in the volume of the solution.

3. The reaction in which spirit molecules are surrounded with water molecules is called hydration.