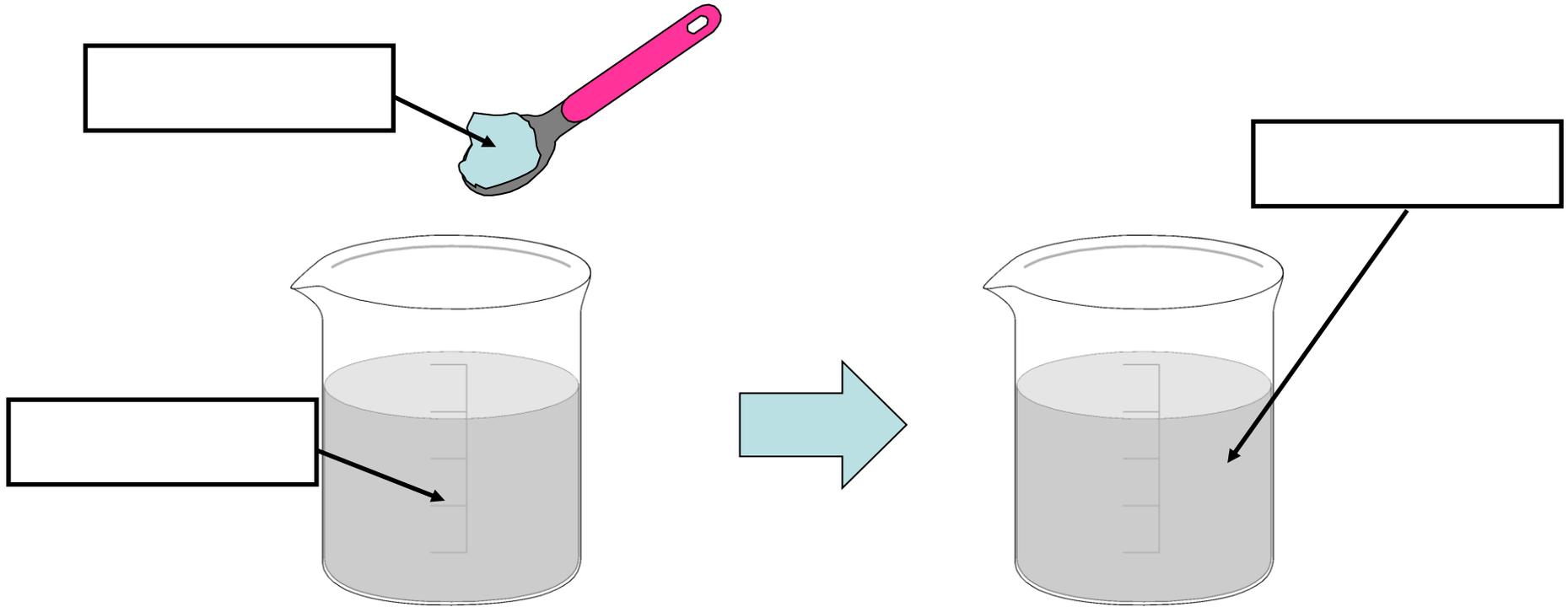


**Solutions**

# Dissolving things - some definitions



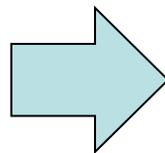
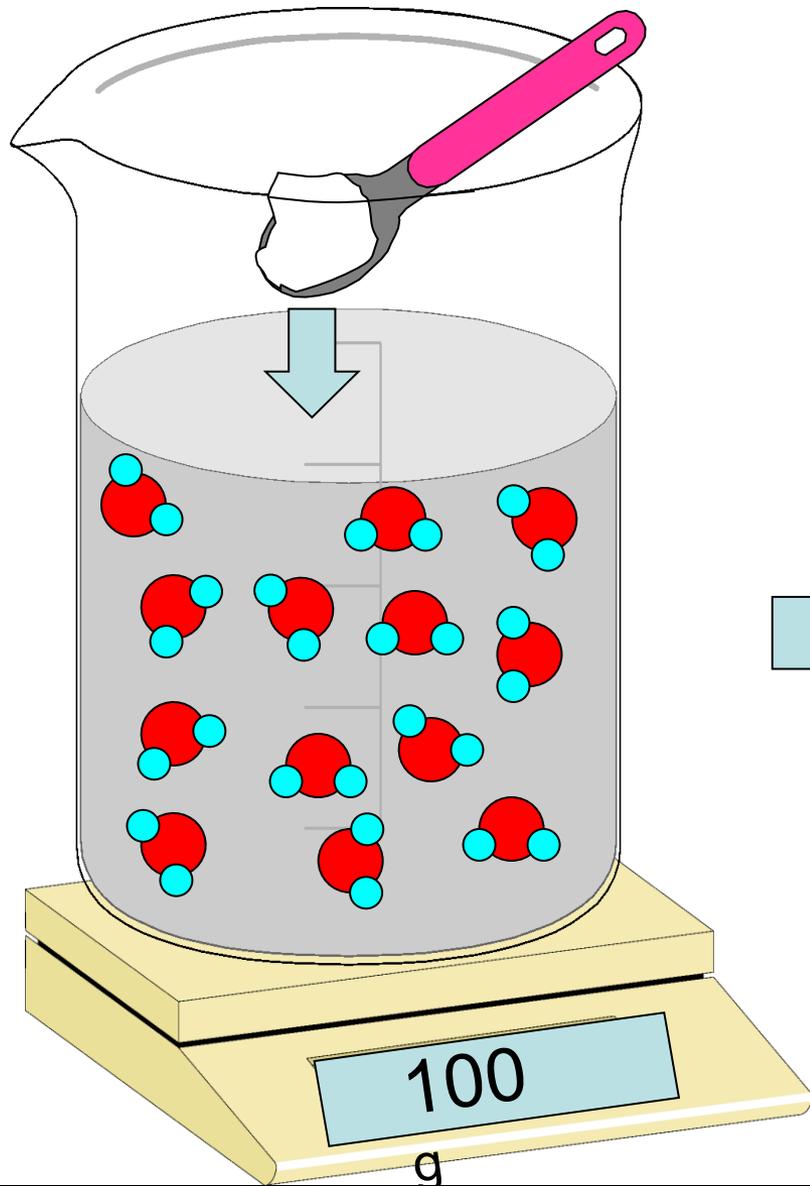
If a substance *CAN* be dissolved it is called \_\_\_\_\_

If a substance *CANNOT* be dissolved it is called \_\_\_\_\_

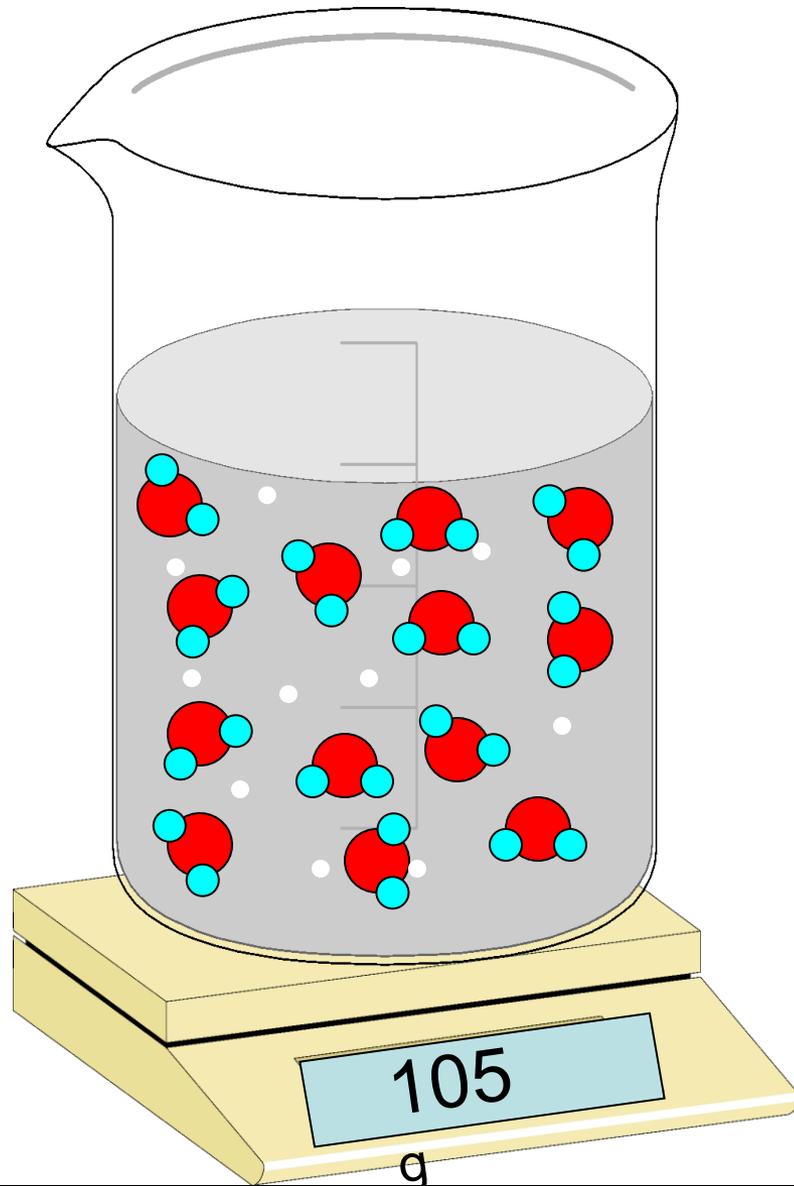
Words - soluble, solute, solvent, solution, insoluble

# A "Particle Theory" explanation

Before



After



# Evaporation and filtration

In this practical we tried to separate rock salt - a mixture of \_\_\_\_\_ and sand. To do this we followed four steps:

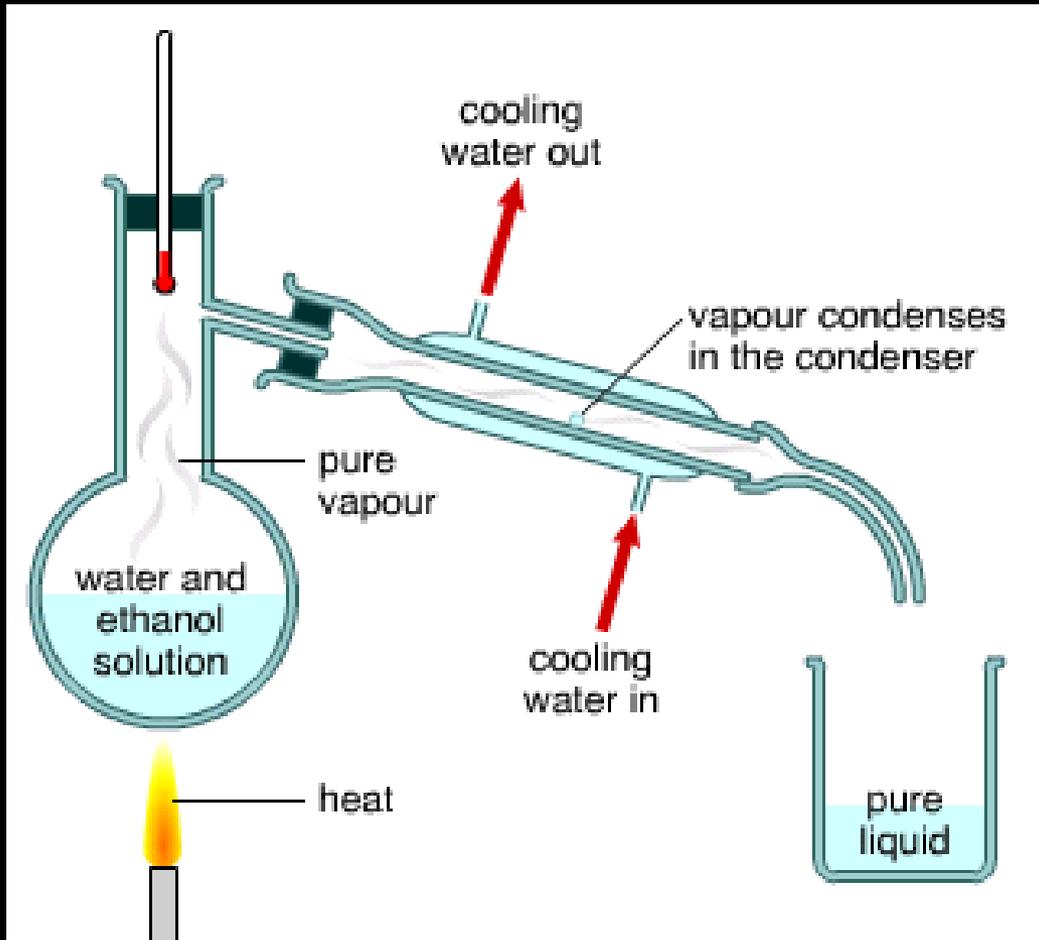
- 1) We ground the rock salt using a \_\_\_\_\_ and mortar,
- 2) We dissolved the mixture,
- 3) We \_\_\_\_\_ it,
- 4) We evaporated the remains.

The sand didn't \_\_\_\_\_, so we were able to filter it out. The salt did dissolve, so we had to \_\_\_\_\_ the remains to get the salt back.

*Conclusion: Filtration can be used to remove something that doesn't dissolve and evaporation can be used to separate something that does dissolve.*

**Words - filtered, salt, pestle, evaporate, dissolve**

# Distillation

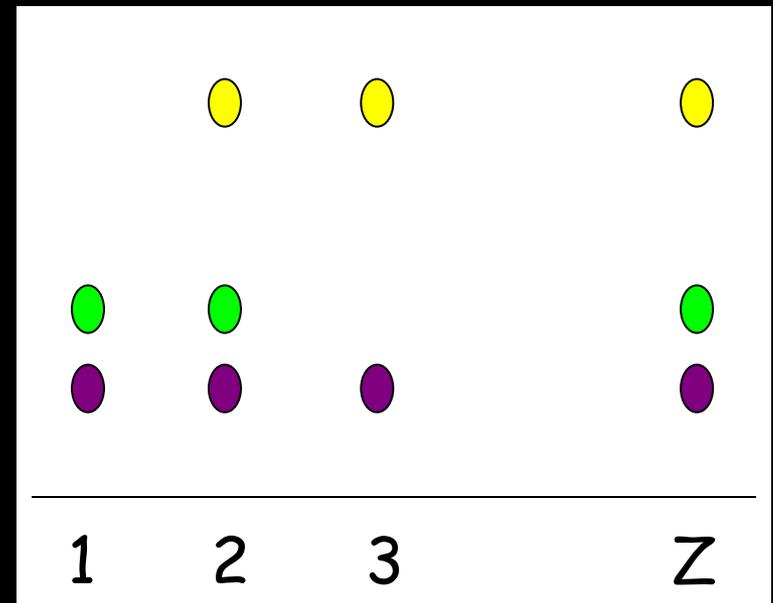
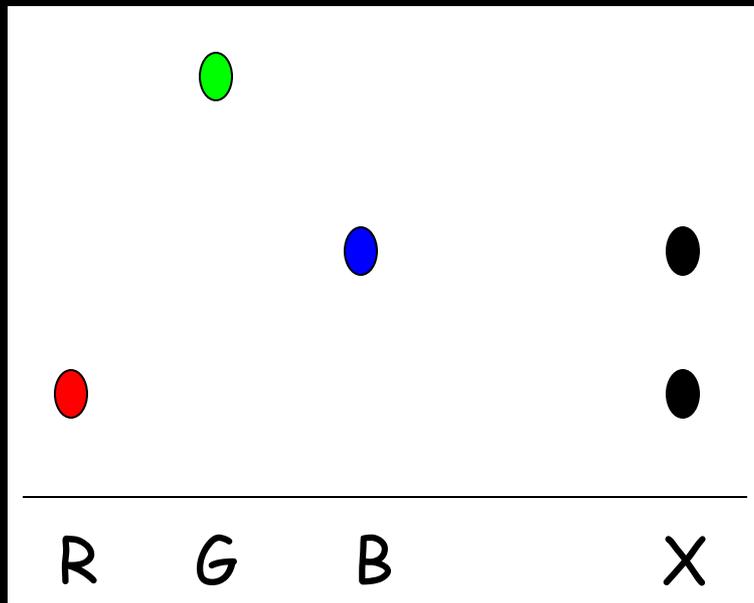


This apparatus can be used to separate water and ethanol because they have different boiling points. The ethanol will evaporate first, turn back into a liquid in the condenser and collect in the beaker. The water remains in the round flask, as long as the temperature does not exceed  $100^{\circ}\text{C}$ . This method is used to extract water from seawater.

Words - temperature, boiling points, ethanol, beaker, liquid

# Chromatography

Chromatography can be used to separate a mixture of different inks. Some example questions...



1) Ink X contains two different colours. What are they?

2) Which ink is ink Z made out of?

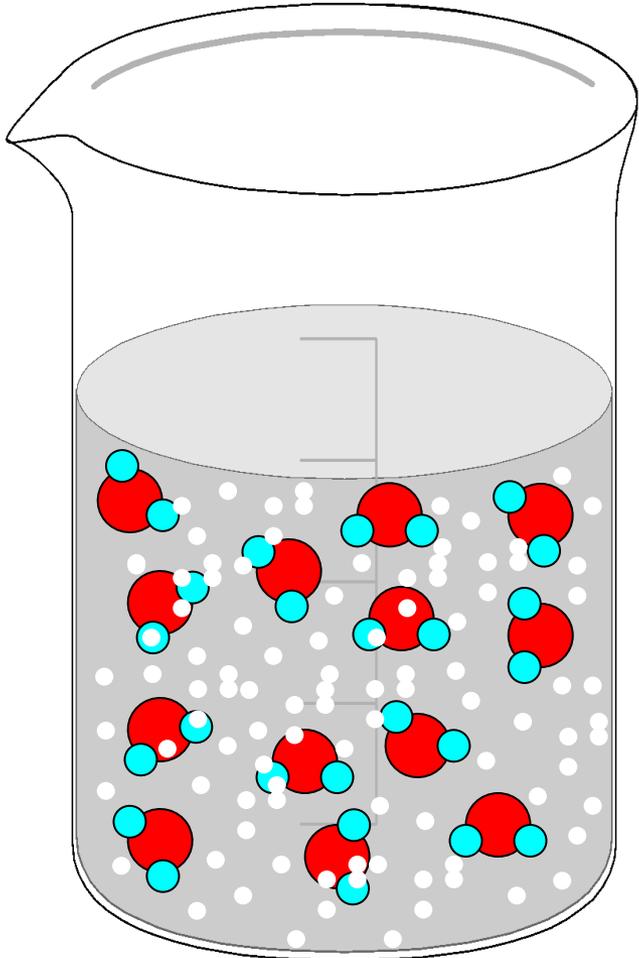
# Separating mixtures summary

- 1) A mixture containing something that DOES dissolve can be separated using \_\_\_\_\_
- 2) A mixture of liquids with different boiling points can be separated using \_\_\_\_\_
- 3) A mixture of different inks can be separated using \_\_\_\_\_
- 4) A mixture containing something that DOES NOT dissolve can be separated using \_\_\_\_\_

*Distillation, chromatography, evaporation or filtration?*

# Saturated solutions

Consider our previous work on solutions:



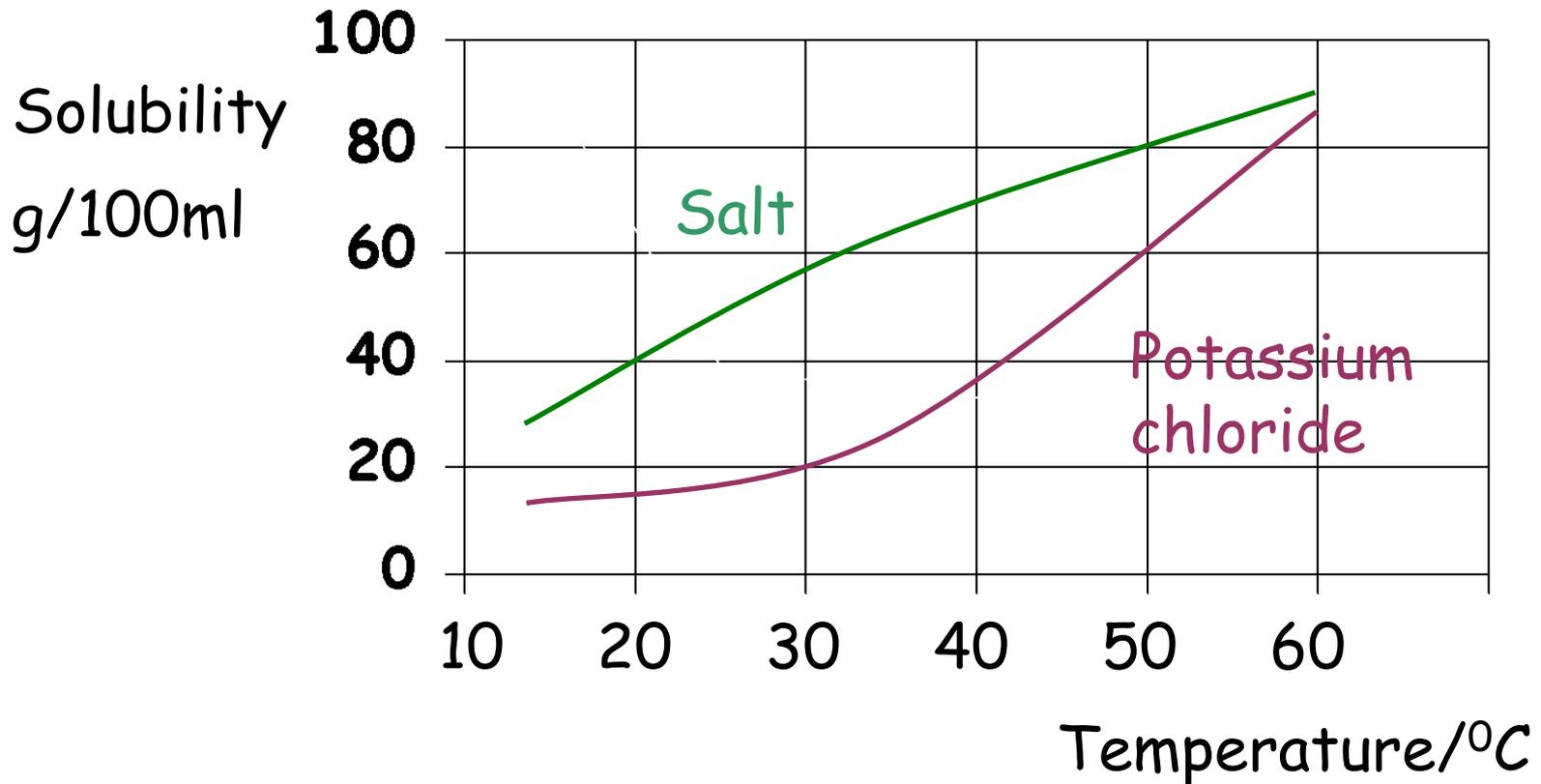
Clearly, there is only so much solute a solution can take...

A mixture that cannot take any more solute is called a "saturated solution"

# Solubility

"Solubility" means "how much can be dissolved".

Solubility usually increases with temperature:



# Solubility words

Something that CAN dissolve is described as being...

How much of something that can be dissolved is called...

Something that CANNOT be dissolved is described as being...

A solution that CAN'T dissolve anything else is...

The solid that will be dissolved is the...

The mixture of solute and solvent is called the...

The liquid that the solute will be dissolved into is the...

Solute

Solution

Solvent

Soluble

Insoluble

Saturated

Solubility