

THE PROCESS OF DISSOLVING (SOLVATION)

COMPONENTS

- 1. SOLVENT** – the
DISSOLVING
medium, frequently
water

COMPONENTS

2. SOLUTE – the
DISSOLVED particles

THE MECHANISMS

1. The process of dissolving is **SPONTANEOUS.**

THE MECHANISMS

The process is based on the **KINETIC** energy of matter.

THE MECHANISMS

2. Solute particles are **SEPARATED** from the solid, because of the **ATTRACTION** of the solute and solvent particles.

THE MECHANISMS

This action
TAKES UP
energy.

THE MECHANISMS

3.SOLVENT particles are moved **APART** to allow solute particles to enter the **LIQUID** environment.

THE MECHANISMS

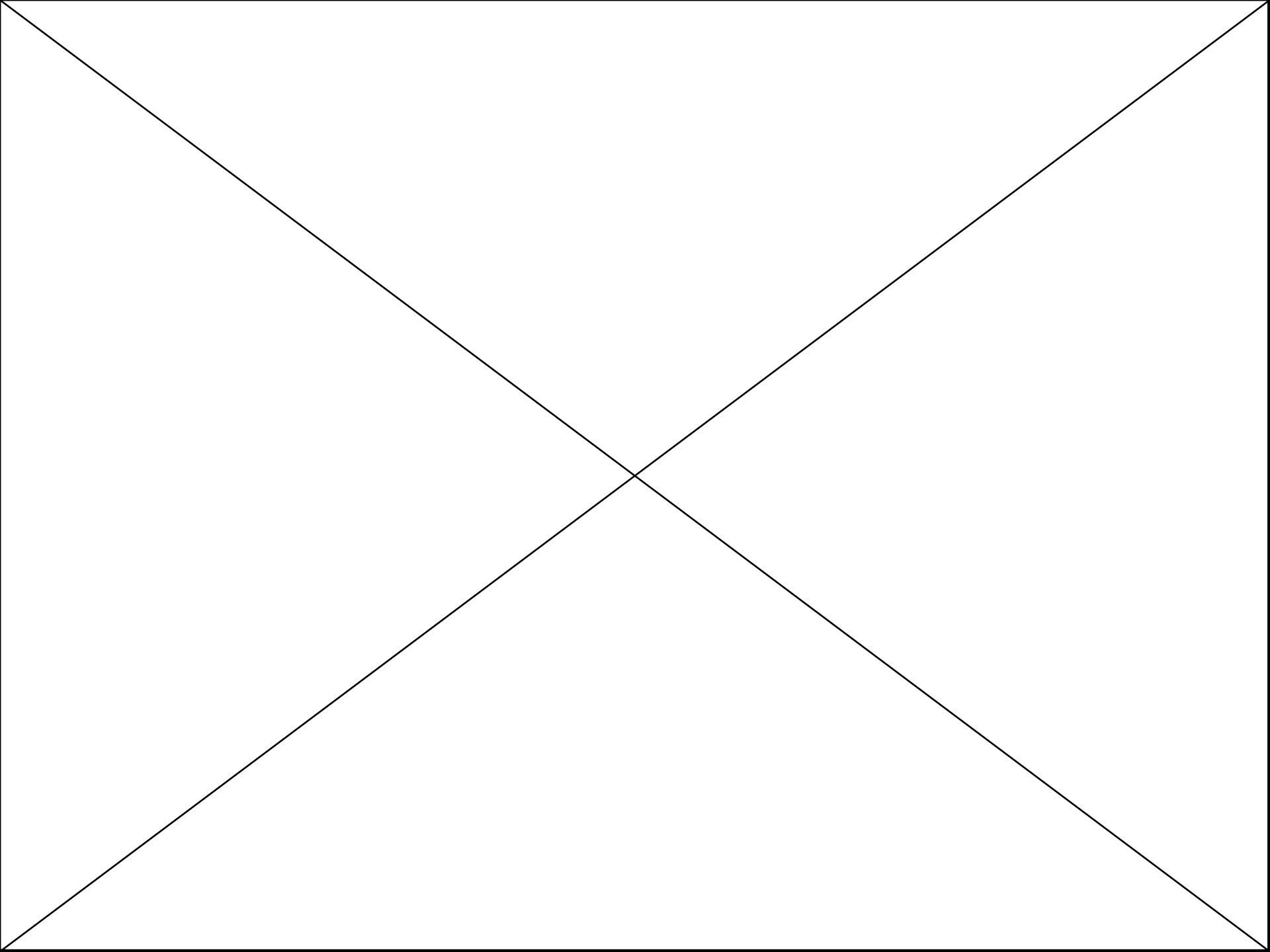
This action
takes up
energy.

THE MECHANISMS

4.SOLUTE particles are
ATTRACTED to
solvent particles.

THE MECHANISMS

This **GIVES**
UP energy.



THE MECHANISMS

5. The first two steps are **ENDOTHERMIC** processes and the third step is **EXOTHERMIC**.

THE MECHANISMS

6. If the temperature of the solution **INCREASES** as the dissolving process occurs, the **EXOTHERMIC** process is greater than the two endothermic processes.

THE MECHANISMS

(Negative heat of solution).

CO_2 (g)	KOH (s)	NH_3 (g)
-4.76	-13.04	-8.28

THE MECHANISMS

The solubility of the
substance
DECREASES with
rising temperature.

THE MECHANISMS

7. If the temperature of the solution **DECREASES** as the dissolving process occurs, the **ENDOTHERMIC** processes are greater than the exothermic processes.

THE MECHANISMS

(Positive heat of solution).

AgNO_2 (s)	KCl (s)	NaCl (s)
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+5.44

+4.20

+1.02

THE MECHANISMS

The solubility of the
substance

INCREASES with rising
temperature.