

## STUDYING THE PROPERTIES OF SUBSTANCES

### OBJECTIVES:

- Compare the melting point of 4 substances.
- Determine the solubility of these solids in water and ethanol.
- Determine the conductivity of water solutions.
- Classify the compounds into groups of ionic and covalent compounds.

### PROCEDURE:

- We are going to place a few crystals of the four substances: Calcium chloride ( $\text{CaCl}_2$ ), potassium iodide (KI), sucrose ( $\text{C}_{12}\text{H}_{22}\text{O}_{11}$ ) and ibuprofen ( $\text{C}_{12}\text{H}_{18}\text{O}_2$ ) in an aluminum foil marked. (We are doing this part as a whole group) Then we'll place the aluminum foil on top of a hot plate and plug in the hot plate. We take note of the **order of melting**.
- Write a **brief description of each** substance in your notebook, **before** and **after** melting.
- Measure the **same** amount, about the **size of a grain of rice**, of **each** substance into **two** test tubes. Finally, you'll get **8 test tubes** in the rack.
- Add **2-3 mL of water** in one of the tubes and **2-3 mL of ethanol** in the second tube for each substance. Annotate **solubility**.
- After a while, you must **stir** a little bit each tube, to **check solubility** again.
- **Test the conductivity** of each **water solution** with the electrodes of the multimeter. For doing that, you can pour the content of the test tube in the beaker.
- Clean the test tubes and the beaker and wash your hands before you leave the lab.

| COMPOUND | Description | Melting point | Solubility in water | Solubility in ethanol | Conductivity |
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### ANALYSIS:

Group the substances into two groups according to their properties. Associate each group to covalent or ionic bonding.