



Activity 13. Making salt

Aim

To demonstrate that all natural waters contain salts.

Materials required

- Pyrex beaker
- Bunsen burner

Procedure

1. Fill the pyrex beaker with tap water and place it on a Bunsen burner.
2. Let it boil until all the water has evaporated.
3. Remove the beaker from the heat as soon as the water has evaporated. The beaker will be very hot when you take it off the flame, so place it on a heat-resistant mat and wait until it cools before you refill it with cold water.
4. Carefully add more water. Alternatively, remove the beaker from the flame, let it cool slightly, and fill it with warm water.
5. Repeat this process a number of times. After three to six repetitions, depending on how much water you use and whether tank water or town water is used, a layer of salt should develop in the bottom of the beaker.

Following up

Accurately measure the weight of dissolved salts in water from different locations.

Note: This experiment can only be conducted if a balance is available which can accurately weigh samples to a level of accuracy of 0.01 grams.

Take 1 L samples of water from a number of different sites (creeks, bores, ocean, and so on). Measure the electrical conductivity of each sample as you do for Saltwatch.

Accurately weigh a number of pyrex beakers at room temperature. Using one beaker per water sample, evaporate each of the water samples completely (as described in steps 1-5 above). Alternatively, the water can be evaporated in an oven at 80°C, but this will take a few days.

When the beakers have cooled to room temperature, weigh them again. Subtract the initial weights from the final weights to determine the weight of salt in mg/L.

On graph paper, plot the electrical conductivity (EC) of each sample against its weight of dissolved salts in mg/L.

- a. What is the relationship between the two sets of data?
- b. Discuss any discrepancies in the data.
- c. What else, other than salt, could be dissolved in the water sample.