

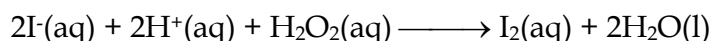
# Iodine from Seaweed

## Student Handout

**Purpose:** To extract iodine from a dried sample of Laminariaceae seaweed.

### Introduction

Dried Laminariaceae seaweed contains a high proportion of iodine. After burning off the organic matters, the ash that remained is boiled with deionized water to dissolve the iodide ions. The iodide ion is oxidised by acidified hydrogen peroxide solution to iodine.



### Safety

The ashing of seaweed should be carried out inside a fume cupboard. Avoid skin contact with the chemical. Iodine is harmful by inhalation and by contact with the skin.



EYE PROTECTION  
MUST BE WORN

### Materials and Apparatus

1 M H<sub>2</sub>SO<sub>4</sub>(aq), 20 "Volume" hydrogen peroxide solution



IRRITANT

Petroleum ether (b. p. < 80 °C)



FLAMMABLE



HARMFUL

Dried seaweed, evaporating dish, tong, small beaker, boiling tube, test tube, test tube rack, filter funnel, filter paper, conical flask, separating funnel, electronic balance.

### Experimental Procedures

1. Burn about 4 g of dried seaweed to ash in an evaporating dish inside a fume cupboard.
2. Transfer the ash to a small beaker and boil with 30 cm<sup>3</sup> of water for 5 minutes.
3. Filter into a boiling tube, add 5 cm<sup>3</sup> of dilute sulphuric acid followed by 10 cm<sup>3</sup> of 20 "volume" hydrogen peroxide.
4. Pour the mixture into a separating funnel and add 10 cm<sup>3</sup> of petroleum ether. Stopper the funnel and mix the contents well by inverting the funnel several times. Release any pressure built up by opening the tap. Run the upper organic layer into a test tube labeled as "Iodine extract from seaweed".
5. Extract iodine from the petroleum ether and determine the mass of iodine obtained.

### Results

Mass of dried seaweed = \_\_\_\_\_ g

Mass of iodine extracted = \_\_\_\_\_ g

### **Discussion Questions**

1. How would you carry out step 5 of the procedure?
2. What were the colour changes during solvent extraction?
3. When and how was iodine discovered?