

## PURPOSE

To prepare soap by the alkaline hydrolysis of fats and oils.

## EQUIPMENT

water-cooled condenser	100ml flask	burner	Buchner funnel
ring stand	clamp	boiling chips	400ml beaker

## MATERIALS

margarine	NaOH	ethanol	table salt
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## PROCEDURE

1. Set up a reflux apparatus as shown.
2. Place 10g of oil in the flask and add to it a solution of 10g of NaOH in a 35ml of mixture having equal volumes of ethanol and water.
3. Add several boiling chips and Connect the flask to the condenser and gently reflux the mixture over a small flame.
4. Saponification is complete when you obtain a homogeneous solution. (in 30-45 minutes)
5. While the saponification is in progress, prepare a concentrated salt solution by dissolving 50g of NaCl in a 150ml of water in a 400ml beaker.
6. When saponification is complete, extinguish the flame and pour the mixture quickly into the saturated salt solution.
7. Stir the mixture thoroughly for several minutes.

8. Collect the precipitated soap on a Büchner funnel.
9. Wash the soap twice with 10ml of ice-cold distilled water.
10. Wait until it dries.

## QUESTIONS

1. Explain what happened when you poured the hydrolyzed oil mixture into a concentrated salt solution?
2. What impurities were removed from the soap by washing it on the Buchner funnel with cold water?
3. Why is soap used for cleaning?

