

**MINISTRY OF EDUCATION**  
**SECONDARY ENGAGEMENT PROGRAMME**  
**GRADE 11**  
**CHEMISTRY**

**Week 9**

**Lesson 2 - Worksheet**

**Circle the correct answer.**

1. Which of the following processes can saponification be used for?
  - A. To make plastics
  - B. To make soap
  - C. To make glass
  - D. To make alloys
2. Which of the following is a useful alkali in saponification reactions?
  - A. Chlorine
  - B. Hydrochloric acid
  - C. Potassium hydroxide
  - D. Aqueous ammonia
3. What other is produced along with soap during saponification?
  - A. Glycerol
  - B. Oxalic acid
  - C. Methane
  - D. Acetic acid
4. What are the two reactants needed for saponification?
  - A. Acid and base
  - B. Ester and ether
  - C. Alcohol and ester
  - D. Fat and a strong base

The glyceryl octadecanoate  $(C_{17}H_{35}COO)_3C_3H_5$  can be hydrolyzed by boiling with concentrated sodium hydroxide solution.

5. Name the type of reaction occurring.

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6. Write a balanced chemical equation for the reaction.

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7. Name the products of the reaction.

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8. What is a detergent?

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9. Distinguish between soapy and soapless detergents.

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10. Give two disadvantages of using a soapless detergent.

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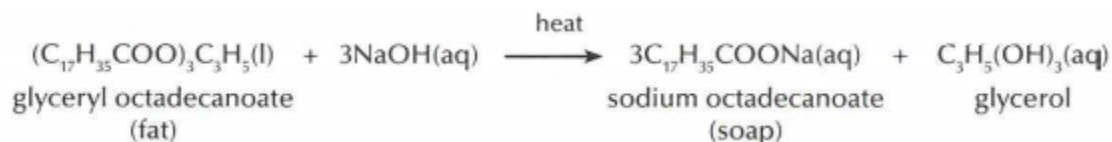
The glyceryl octadecanoate ( $(C_{17}H_{35}COO)_3C_3H_5$ ) can be hydrolyzed by boiling with concentrated sodium hydroxide solution.

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saponification

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6. Write a balanced chemical equation for the reaction.



7. Name the products of the reaction.

Sodium octadecanoate(soap) and glycerol

8. What is a detergent?

detergents are substances that are added to water to remove stains and dirt e.g. from the skin, clothes, household surfaces and floors.

9. Distinguish between soapy and soapless detergents.

\*Soapy detergents are made by boiling animal fats or vegetable fats and oils with concentrated potassium or sodium hydroxide solution while Soapless detergents are formed from petroleum.

\* soapy detergents do not lather well in hard water while soapless detergents lather well.

10. Give two disadvantages of using a soapless detergent.

- They are made from non-renewable petroleum resources
- They may contain phosphates which can cause eutrophication
- Some are non-biodegradable.