

CBSE Class 8 Science Notes Chapter 11: Here are the notes on CBSE Class 8 Science Chapter 11 Chemical Effects of Electric Current which are important for Class 10 students. These notes provide a detailed understanding of how electric current can lead to chemical changes when it passes through a solution. They cover important topics such as electrolysis, the process of breaking down substances using electricity, and the different effects electric current can have on various liquids.

The notes also explain the practical applications of these concepts, such as electroplating and purification of metals. Grasping these foundational principles is key to understanding more advanced topics related to electricity and chemical reactions in higher classes.

CBSE Class 8 Science Notes Chapter 11 Chemical Effects of Electric Current Overview

These notes are prepared by subject experts of Physics Wallah for CBSE Class 8 Science Chapter 11 Chemical Effects of Electric Current. They provide a detailed overview of how electric current can cause chemical changes in various substances. The notes cover key concepts such as electrolysis, the role of electrodes, and the practical applications of chemical effects, like electroplating.

This detailed overview is designed to help students build a strong foundation in understanding the interactions between electricity and chemical processes.

CBSE Class 8 Science Notes Chapter 11 Chemical Effects of Electric Current PDF

The PDF link for CBSE Class 8 Science Notes Chapter 11 Chemical Effects of Electric Current is available below. These notes provide a detailed understanding of the chapter, covering all essential concepts in a structured manner.

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CBSE Class 8 Science Notes Chapter 11 Chemical Effects of Electric Current

Below we have provided CBSE Class 8 Science Notes Chapter 11 Chemical Effects of Electric Current for students to help them understand the chapter better and to score good marks in their examination.

What Is the Chapter About?

This chapter focuses on the **Chemical Effects of Electric Current**. It explains how different materials conduct electricity, distinguishing between good conductors, such as metals like copper and aluminum, and poor conductors, like rubber and plastics. It also covers how certain liquids conduct electricity based on their composition.

For instance, water from natural sources like wells and ponds, which contains dissolved salts, conducts electricity well. In contrast, distilled water, which is free of salts, does not conduct electricity effectively. The chapter explores how electric current causes chemical reactions in solutions, including the formation of gas bubbles, metal deposition and color changes through a process known as electrolysis.

Chemical Effects of Electric Current

When an electric current passes through chemical solutions, it triggers chemical reactions. These reactions can manifest in several ways:

Formation of Gas Bubbles: Gas bubbles may appear at the electrodes where the current passes through the solution.

Metal Deposition: Metals can be deposited onto the electrodes as a result of the current.

Changes in Solution Color: The color of the solution may change, indicating a chemical reaction has occurred.

Current Test – Conductors

A **conductor** is a material that permits the flow of electric current through it. Conductors facilitate the movement of electrons, which is essential for electricity to travel. Metals are common examples of conductors, with **copper** being a prime example due to its excellent conductivity. Other metals like aluminum also serve as effective conductors. Materials that do not allow electric current to pass through them, such as rubber and plastics, are known as insulators.

Insulator (Bad Conductors)

Insulators, also known as bad conductors, are materials that do not permit the free flow of electric current through them. These materials are effective at blocking the passage of electricity, making them essential for protecting and insulating electrical circuits.

Rubber and **plastic** are prime examples of insulators. They are commonly used to cover and insulate wires and other electrical components to ensure safety and prevent electrical shocks.

Electric Circuit

An **electric circuit** is a closed-loop path through which electric current flows. When the circuit is complete and the path is unbroken, current can flow through the circuit, allowing electrical devices to operate. However, if there is a break in the path such as when a switch is open the circuit becomes open and current cannot flow, rendering the circuit non-functional. This open or closed state of the circuit controls the flow of electricity and the operation of connected devices.

Tester

A **tester** is a device used to determine whether an electric current is present in a circuit. It typically consists of a conductor connected to a light-emitting diode (LED) or a bulb. When current flows through the circuit, the LED or bulb lights up, indicating the presence of electricity. Testers are essential tools for troubleshooting and verifying electrical circuits, ensuring that electrical systems are functioning correctly.

Current – Conducting Liquids

Conducting Liquids: Some liquids can conduct electricity if they contain dissolved salts, acids, or bases. These substances dissociate into ions when they dissolve in water, allowing the liquid to conduct electric current.

Acids, Bases, and Salts: Acids and bases are chemicals that form ions in solution, making them good conductors of electricity. Similarly, salts release positive and negative ions when dissolved in water, enabling electrical conduction.

Conduction of Electricity in Water: Distilled water, which lacks dissolved salts and minerals, is a poor conductor of electricity. However, when acids, bases, or salts are added to the water, they produce ions that facilitate the flow of electric current.

Electrodes and Electrolyte

In an electrochemical cell, electrodes are conductors immersed in an electrolyte solution. The electrodes are connected to the terminals of a battery, completing the circuit. There are typically two electrodes: the cathode (negative) and the anode (positive). The electrolyte is the solution that surrounds the electrodes and undergoes chemical changes when electric current flows through it. The combination of electrodes, electrolyte, and battery forms the electrochemical or electrolytic cell.

Electroplating: Electroplating is the process of applying a layer of metal onto a surface using electricity. For example, when using a copper sulfate solution as the electrolyte with copper electrodes, copper is deposited onto the negative electrode. The copper ions in the solution are replenished from the positive electrode, which adds copper to the solution.

Applications of Electroplating

- **Preventing Corrosion:** Coating iron with zinc to prevent rust.

- **Jewelry:** Applying silver or gold to enhance appearance.
- **Food Cans:** Coating iron with tin to improve durability and prevent reactions.
- **Automobiles and Fixtures:** Using chromium plating to add shine and reduce wear.

Benefits of CBSE Class 8 Science Notes Chapter 11

Chemical Effects of Electric Current

- **Concept Clarity:** The notes break down complex concepts into easily understandable segments, including the nature of conductors and insulators, the role of electrolyte, and the principles of electroplating.
- **Detailed Explanations:** Students gain insight into how electric current causes chemical reactions in solutions, such as the formation of gas bubbles, metal deposition, and color changes in solutions.
- **Enhanced Understanding:** By explaining the behavior of different materials and solutions when exposed to electric current, the notes enhance students understanding of the practical and theoretical aspects of electricity and chemistry.
- **Preparation for Exams:** The structured format and concise explanations make these notes a valuable resource for revision. Students can use them to quickly review key concepts and prepare effectively for their exams.