

## ACTIVITY NO – 5 – Redox Reaction

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|--------------------|-----------------------|
| Subject            | Chemistry             |
| Class              | XI                    |
| Chapter/Unit       | Redox Reaction        |
| Topic              | Oxidation – Reduction |
| Time               | 10 minutes            |
| Nature of Activity | Pair work             |

### What will I learn (Learning Outcome)

To illustrate Redox reaction

**Skills:** Applying, Analyzing and Creating.

### What I have to do?

To illustrate Redox reaction as an example of a disproportionation reaction

### What do I require?

- 50-100 ml of 30% hydrogen peroxide ( $\text{H}_2\text{O}_2$ ) solution
- Saturated potassium iodide (KI) solution
- Liquid dishwashing detergent
- Food coloring
- 500 mL graduated cylinder

### What do I need to know?

- **Oxidation:** It is a process which involves addition of oxygen or any other electronegative element or removal of hydrogen or any other electropositive element.
- **Reduction:** It is a process which involves addition of hydrogen or any other electropositive element or removal of oxygen or any other electronegative element.

#### ➤ Teacher's Activity

Teacher will

1. Divide the class into pairs and distribute large glass cylinder, small Stoppard flask containing 50 ml of 30% hydrogen peroxide solution, small Stoppard flask containing KI/soap solution, large basin to contain overflow, neoprene gloves
2. Give instructions, to recall Redox Reaction
3. explain that in this demonstration it is the iodide ion which catalyzes the decomposition
4. Ensure that each participant of the pair performs the activity on his/her own

### How will I proceed?

#### ➤ Student's Activity

1. Put on gloves and safety glasses..
2. Pour ~50 ml of 30% hydrogen peroxide solution into the graduated cylinder.
3. Squirt in a little dishwashing detergent and swirl it around.
4. Add 5-10 drops of food coloring along the wall of the cylinder to make the foam resemble striped toothpaste.
5. Add ~10 ml of potassium iodide solution. Do not lean over the cylinder when you do this, as the reaction is very vigorous and one may possibly get burned by steam.
6. Now, touch a glowing splint to the foam to relight it, indicating the presence of oxygen.

### What have I observed?

|            |        |
|------------|--------|
| Experiment | Result |
|            |        |

### What have I learnt?

- The above reaction is an example of \_\_\_\_\_ reaction having \_\_\_\_\_ as the oxidizing agent and \_\_\_\_\_ as the reducing agent.

### **What am I curious to learn?**

- What is a Catalyst?
- Are Redox reactions Time Dependent?
- What will happen in above reaction if we take an Oxide instead of Peroxide?

### **Let me evaluate myself**

1. What is Redox Reaction

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2. Difference between Oxidation and Reduction

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3. Define disproportionation Reaction with example

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4. How pressure affects redox reaction?

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5. How Redox reaction is time dependent?

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