SAI International School
Lesson Notes
Subject - Chemistry
Ch-Acids, Bases & Salts
Topic- Study Of Salts – 2. Bleaching Powder

Module -15 **Dt_ 26 /05/2020**

Suggested Videos-

1. https://youtu.be/eKqiGlf4XhU **Bleaching Powder**

To be done in CW Copy-

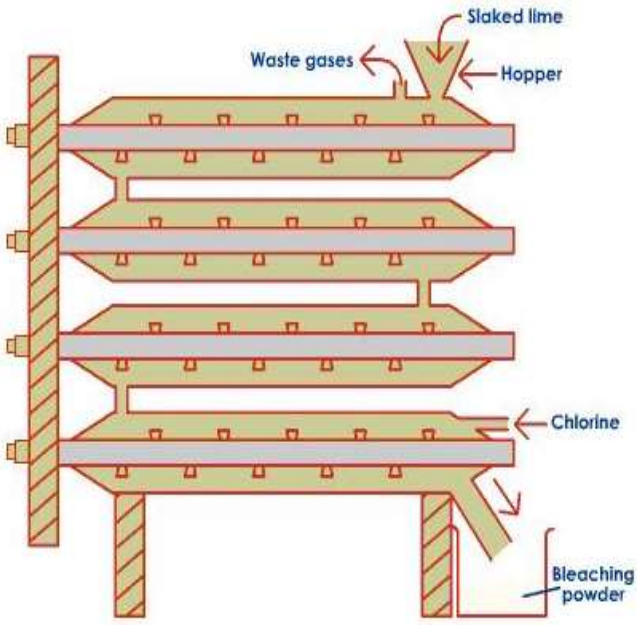
- **STUDY OF SALTS-**

2. BLEACHING POWDER (Common Name)
OR

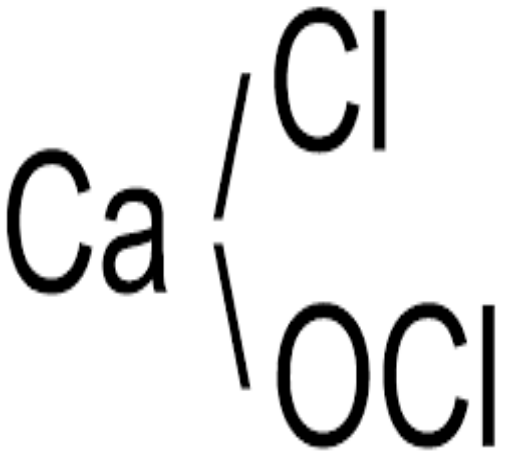
- **Chemical Name - Calcium Oxy Chloride**
- **Chemical Formula – $CaOCl_2$**
- **Preparation of Bleaching powder-**

- **Chlorine** produced on passing **electricity through brine solution** undergoes reaction with **dry slaked lime [$Ca(OH)_2$]** to produce **Bleaching powder**.
- The reaction is as follows:

$$\underset{\text{Calcium Hydroxide}}{Ca(OH)_2} + Cl_2 \longrightarrow \underset{\text{Calcium oxychloride}}{CaOCl_2} + H_2O$$



Preparation of Bleaching Powder



Structure of $CaOCl_2$

* **Properties of Bleaching powder-**

1. **White Powder**
2. Has a **strong smell of Chlorine**
3. Soluble in **cold water**

4. Reaction with **moisture from atmosphere**-

   $CaOCl2 + H2O \rightarrow Ca(OH)2 + Cl_2$

5. Reaction with **Carbon dioxide from atmosphere -**

   $CaOCl_2 + CO_2 \rightarrow Ca(CO_3)_2 + Cl_2$

6. Due to the **release of Chlorine gas** on being **exposed to Atmosphere**, **bleaching powder loses its properties** when left **open to air**.

* **Uses Of Bleaching Powder-**

It is used for several purposes:

1. As a bleaching agent for –
   a. Bleaching cotton and linen in the textile industry,
   b. Bleaching wood pulp in paper manufacturing industry.
   c. Bleaching washed clothes in laundry.

Bleaching of clothes, fades the colour of the Fabric.

2. As an oxidizing agent in many chemical industries.

3. As a disinfectant, it's used to-
   a. Disinfect drinking water and make it germfree.
   b. Disinfect water in Tanks, Ponds, wells & Swimming pools.
   c. Disinfect drains, roads, and various areas which are thickly populated.
   d. {Now a days we see all the common areas being disinfected by spraying Bleaching powder due to Pandemic COVID 19}

Common areas being disinfected by spraying Bleaching powder due to Pandemic COVID 19

Assessment

MCQs

Q.1	Bleaching powder is soluble in cold water giving a milky solution due to- (a) available chlorine (b) lime present in it (c) calcium carbonate formation (d) The absorption of carbon dioxide from atmosphere
Q.2	Bleaching powder gives smell of chlorine because it- (a) is unstable (b) gives chlorine on exposure to atmosphere (c) is a mixture of chlorine and slaked lime (d) contains excess of chlorine
Q.3	An aqueous solution turns red litmus solution blue.Excess addition of which of the following solution would reverse the change? (a) Baking powder (b) Lime (c) Ammonium hydroxide solution (d) Hydrochloric acid
	➢ For Assertion& Reason question follow the following directions. DIRECTION: Each of these questions contains an Assertion followed by Reason. Read them carefully and answer the question on the basis of following options. You have to select the one that best describes the two statements. (a) If both Assertion and Reason are correct and Reason is the correct explanation of Assertion. (b) If both Assertion and Reason are correct, but Reason is not the correct explanation of Assertion. (c) If Assertion is correct but Reason is incorrect. (d) If Assertion is incorrect but Reason is correct. (e) If Assertion & Reason both are incorrect.
Q.4	Assertion : In water. Hydrochloric acid behaves as a weak monobasic acid. Reason : In water, Hydrochloric acid acts as a proton donor.
Q.5	Assertion : During electrolysis of concentrated aqueous solution of sodium chloride, hydrogen is produced at anode and chlorine gas is produced at cathode. Reason : Ions get attracted to oppositely charged electrodes.

Home assignment

S.L No.	Questions	Mark	Skill

Q.1	Write the chemical equation representing the action of atmospheric CO_2 gas on bleaching powder when left exposed in open. [CBSE 2013]	1	R
Q.2	Which among distilled water, tap water and sea water is the best conductor of electricity?[CBSE 2010, 2011]	1	u
Q.3	What happens when chlorine is passed over slaked lime at 313 K? Write chemical equation of the reaction involved and state two uses of the product. [CBSE 2010]	3	R+A
Q.4	What is bleaching powder chemically? Give a reaction for its preparation. State one of its use. [CBSE 2011]	3	U+A
Q.5	(a) Dry pellets of a base 'X' when kept in open absorbs moisture and turns sticky. The compound is also formed by chlor-alkali process. Write the chemical name and formula of X. Describe chlor-alkali process with balanced chemical equations. Name the type of reaction occurs when X is treated with dilute hydrochloric acid. Write the relevant chemical equation. (b) While diluting an acid, why is it recommended that the acid should be added to water and notnwater to the acid? [CBSE 2012]	5	HOT