

# Science

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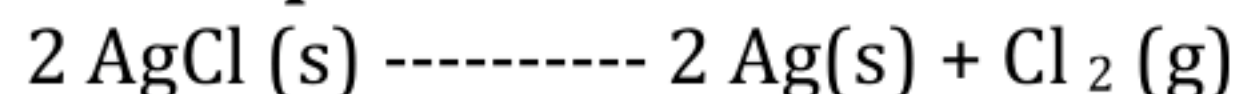
(Chapter – 1) (Chemical Reactions and Equations) (Notes)

(Class – X)

## Thermal Decomposition:

When a decomposition reaction is carried out by heating, it is called thermal decomposition.

### Decomposition of Silver chloride:



white silver chloride turns grey in sunlight. This is due to the decomposition of silver chloride into silver and chlorine by light.

- This Reaction is used in black and white photography.
- All decomposition reactions require energy either in the form of heat, light or electricity for breaking down reactants.

## On the basis of heat there are two kinds of reaction:

### A). Exothermic Reactions:

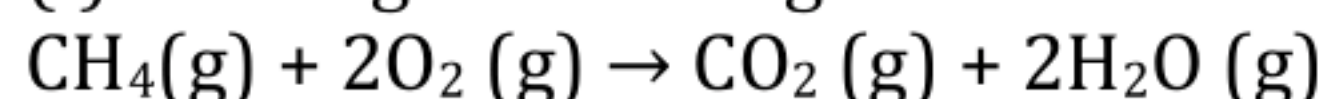
Reactions in which heat is released along with the formation of products are called exothermic.

During the reaction large amount of heat (energy) is evolved

This heat makes the reaction mixture warm.

### Examples of exothermic reactions:

(i) Burning of natural gas



(ii) Respiration is also an exothermic reaction.

When we take food to get energy to stay alive. During digestion, food is broken down into simpler substances like carbohydrates and other nutrients. These carbohydrates further broken down to form glucose. This glucose combines with oxygen in cells of our body in the process of cellular respiration and provide energy. Therefore, respiration is also an exothermic reaction.

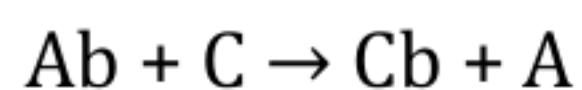
(iii) The decomposition of vegetable matter into compost is also an example of an exothermic reaction.

**B). Endothermic Reactions:** Reactions in which energy is absorbed are known as endothermic reactions.

## 3. Displacement Reaction

The reaction in which the highly reactive element displaces the less reactive element from the reaction, such reaction is known as **displacement reaction**.

### General formula for displacement reaction:



Here C is highly reactive element which displace A from the reaction and joins b.

### Example:

When a iron nail is placed in the aqueous solution of copper sulphate Iron displaces copper from the reaction or its compound and blue colour of copper sulphate turns grey brown because Iron is highly reactive metal than copper.

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