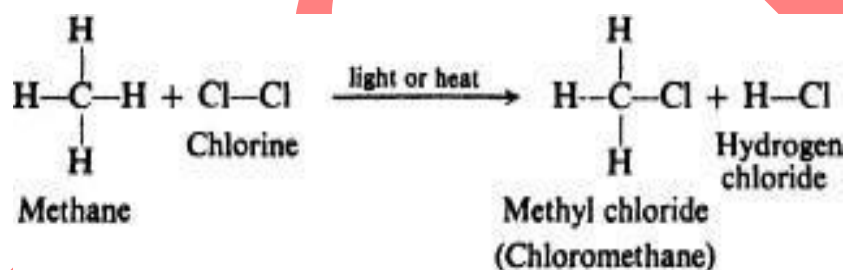


BP 202T - PHARMACEUTICAL ORGANIC CHEMISTRY - I**UNIT: 2 ALKANES, ALKENE & CONJUGATED DIENES**

CLASS: 2

TOPIC: HALOGENATION OF ALKANES & USES OF PARAFFINS**HALOGENATION OF ALKANES**

- When the substitution of alkane hydrogen by a halogen atom under the influence of UV light or 250-400°C.
- Chlorination is a typical example of a broad class of organic reactions known as substitution.
- A chlorine atom has been substituted for a hydrogen atom of methane, and the hydrogen atom thus replaced is found combined with a second atom of chlorine.

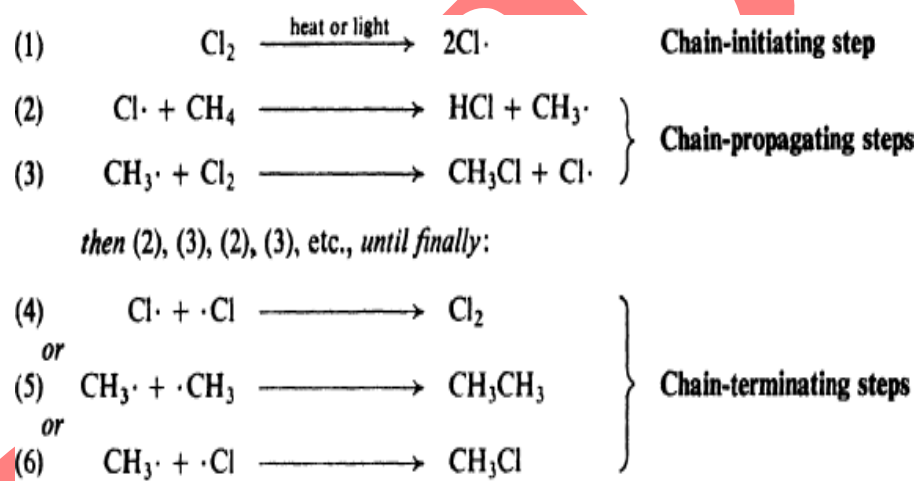


- Bromination takes place somewhat less readily than chlorination.
- Methane does not react with iodine at all.
- With fluorine it reacts so vigorously that, even in the dark and at room temperature, the reaction must be carefully, controlled: the reactants, diluted with an inert gas, are mixed at low pressure.
- We can, therefore, arrange the halogens in order of reactivity.

**MECHANISM:**

- The detailed, step-by-step description of a chemical reaction is called a mechanism.
- An atom or group of atoms possessing an odd (unpaired) electron is called a free radical.
- The chlorination of methane is an example of a chain reaction, a reaction that involves a series of steps, each of which generates a reactive substance that brings about the next step.

1. **Chain-initiating step:** In this energy is absorbed and a reactive particle generated; in the present reaction it is the cleavage of chlorine into atoms (step 1).
2. **Chain-propagating steps:** In this step consumes a reactive particle and generates another; here they are the reaction of chlorine atoms with methane (step 2), and of methyl radicals with chlorine (step 3).
3. **Chain-terminating steps:** in which reactive particles are consumed but not generated; in the chlorination of methane these would involve the union of two of the reactive particles, or the capture of one of them by the walls of the reaction vessel.



USES OF PARAFFINS

- Medicinal liquid paraffin, also known as *paraffinum liquidum*, is a very highly refined mineral oil used in cosmetics and for medical purposes.
- Liquid paraffin has many uses in the medical field. Because liquid paraffin passes through the body's intestinal tract without being absorbed, it can be used as a laxative to limit the amount of water removed from the stool and ease constipation.
- Liquid paraffin is considered to have a limited usefulness as an occasional laxative.
- Paraffin wax were developed, the most popular of which was giving hot wax baths to patients suffering from a variety of ailments, in particular rheumatism and joint pain. The wax would be used to soften the skin and the intense heat would soothe the muscles and ready them for massage treatment.

2 MARKS QUESTIONS

1. Write the uses of Paraffin's in brief

5 MARKS QUESTION

1. Explain in detail about the halogenations of alkanes with mechanism

RRCP