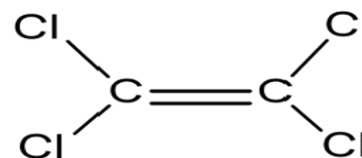


4. Tetrachloroethylene

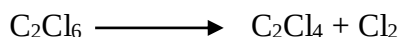
Also known as “Tetrachloroethene” or “Perchloroethene”

**Properties:**

- It is colourless, volatile, non-flammable liquid with a mild sweet odour that may emit toxic fumes.

Preparation:

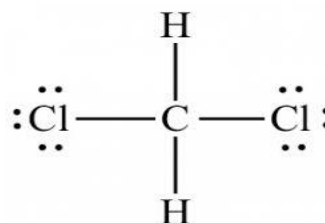
It is synthesized by the thermal decomposition of tetrachloroethene.

**Uses**

1. Tetrachloroethylene is an excellent solvent for organic materials. Otherwise it is volatile, highly stable, and nonflammable. For these reasons, it is widely used in dry cleaning.
2. It is also used to degrease metal parts in the automotive and other metalworking industries, usually as a mixture with other chlorocarbons.
3. It appears in a few consumer products including paint strippers and spot removers. It is also used in aerosol preparations.
4. It is used in neutrino detectors where a neutrino interacts with a neutron in the chlorine atom and converts it to a proton to form argon.
5. Tetrachloroethylene was once extensively used as an intermediate in the manufacture of HFC-134a and related refrigerants.
6. In the early 20th century, tetrachloroethene was used for the treatment of hookworm infestation as an Anti-helminthtic agent.

5. Dichloromethane:

Also known as “Carbon tetrachloride”

**Properties:**

- It is a colourless liquid having characteristic smell.
- Its boiling point is 77°C
- It is non-flammable and poisonous
- It is slightly soluble in water and completely soluble with organic solvents.
- It is a good solvent for fats and oils.

Preparation:

It is synthesized by chlorination of methane.



Household Uses

Methylene chloride is a solvent found in paint and varnish strippers that are used to remove paint or varnish coatings from a variety of surfaces. It is also used in bathtub refinishing.

The U.S. Environmental Protection Agency (EPA) issued a final rule banning the use of methylene chloride in all paint removers for consumer use, effective November 24, 2019.

Industrial/Manufacturing Uses

Methylene chloride is most prominently used industrially — in the production of paint strippers, pharmaceuticals and process solvents. Methylene chloride also is used in the following industrial settings:

Food and Beverage Manufacturing

- Methylene chloride is used as an extraction solvent in the food and beverage manufacturing industry. For example, methylene chloride can be used to remove caffeine from unroasted coffee beans and tea leaves, to make decaffeinated coffee and tea.
- Methylene chloride also is used in processing spices, creating hops extract for beer and other flavorings for the food and beverage industries.

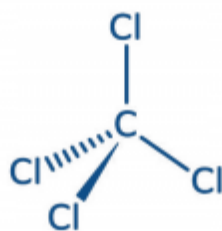
Transportation Industry

- Methylene chloride can be used to degrease metal surfaces and parts, such as airplane components and railroad tracks and equipment. Lubricating and degreasing products used in automotive products, for example in gasket removal and for prepping metal parts for a new gasket, could contain methylene chloride.
- Automotive specialists use a vapor methylene chloride degreasing process to remove oils and grease from car transistor parts, diesel motors and aircraft components and spacecraft assemblies.
- Modern vapor degreasing techniques that rely on methylene chloride enable metal parts in transportation systems to be cleaned quickly and safely.

Medical Applications

- In laboratories, methylene chloride is used to extract chemicals from plants or foods for medicine such as steroids, antibiotics and vitamins.
- Medical equipment can be quickly and efficiently cleaned with methylene chloride cleaners without causing corrosion problems or damage to heat-sensitive parts.

6. Tetrachloromethane (CCl₄)



It is also known as **Carbon tetrachloride**.

The primary application of carbon tetrachloride was in the production of chlorofluorocarbons for refrigeration. It was also used as a component of fire extinguishers and as a cleaning agent. However, the health hazards associated with this compound and the serious environmental damage caused by chlorofluorocarbons

Properties:

- It is a colorless liquid having Characteristic smell
- Its boiling point is 77°C
- It is non-flammable and poisonous
- It is slightly soluble in water and completely soluble with organic solvents.

Uses:

- Carbon tetrachloride is used as a chlorine source in a named reaction known as the Appel reaction.
- It is also used to reveal the watermarks that are placed on stamps without causing any damage to the stamp in the process.
- Carbon tetrachloride was also used as a component in the manufacture of lava lamps.
- Historically, CCl_4 has been used in proton NMR spectroscopy.
- It is used in fire extinguishers with the name “Pyrene”
- It is used as a fumigant (Chemical that produces fumes used to disinfect or purify).
- It is also used in the detection of Neutrinos

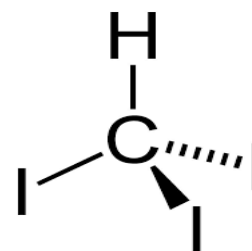
7. iodoform

Iodoform is an organoiodine compound which has a formula of CHI_3 and belongs to the family of organic halogen compounds. It is a crystalline pale yellow substance which is volatile in nature. It has a penetrating and distinctive odor with a sweetish smell which is analogous to chloroform.

It is also called as **Triiodomethane, Carbon triiodide, Methyltriiodide**

Uses:

1. It was widely used in hospitals and described as smell of hospital due to its distinctive odour.
2. Iodoform is commonly used as a disinfectant and antiseptic component of some medications due to its non-irritant action
3. On a small scale iodoform is used as a disinfectant. In the 20th century it was used as a component in medicines for healing and antiseptic dressing of wounds and sores.
4. It was also used for sterilizing instruments used for surgery.
5. Used as a disinfectant by dentist while doing root canal treatment.



6. It is an active ingredient for making of cat and dog powders along with zinc oxide and propanoic acid which are used in order to prevent infection. It also facilitates the removal of ear hair.

Preparation: