

Unit 3: p-BLOCK ELEMENTS – II

Learning Objectives

After studying this unit, the students will be able to

- ❖ Discuss the preparation and properties of important compounds of nitrogen and phosphorus
- ❖ Describe the preparation and properties of important compounds of oxygen and sulphur
- ❖ Describe the preparation, properties of halogens and hydrogen halides
- ❖ Explain the chemistry of inter-halogen compounds
- ❖ Describe the occurrence, properties and uses of noble gases
- ❖ Appreciate the importance of p-block elements and their compounds in day today life.

Important Notes and Points

- ❖ Phosphorous pentachloride is a chlorinating agent and is useful for replacing hydroxyl groups by chlorine atom.
- ❖ Oxygen is one of the essential component for the survival of living organisms.

- ❖ Liquid oxygen is used as fuel in rockets.
- ❖ Sulphur exists in crystalline as well as amorphous allotropic forms.
- ❖ Chlorine is highly reactive hence it doesn't occur free in nature. It is usually distributed as various metal chlorides. The most important chloride is sodium chloride which occurs in sea water.
- ❖ Helium and oxygen mixture is used by divers in place of air oxygen mixture. This prevents the painful dangerous condition called bends.
- ❖ Helium is used to provide inert atmosphere in electric arc welding of metals
- ❖ Helium has lowest boiling point hence used in cryogenics (low temperature science).
- ❖ Neon is used in advertisement as neon sign and the brilliant red glow is caused by passing electric current through neon gas under low pressure.
- ❖ Argon prevents the oxidation of hot filament and prolongs the life in filament bulbs.
- ❖ Xenon is used in fluorescent bulbs, flash bulbs and lasers.
- ❖ Radon is radioactive and used as a source of gamma rays.