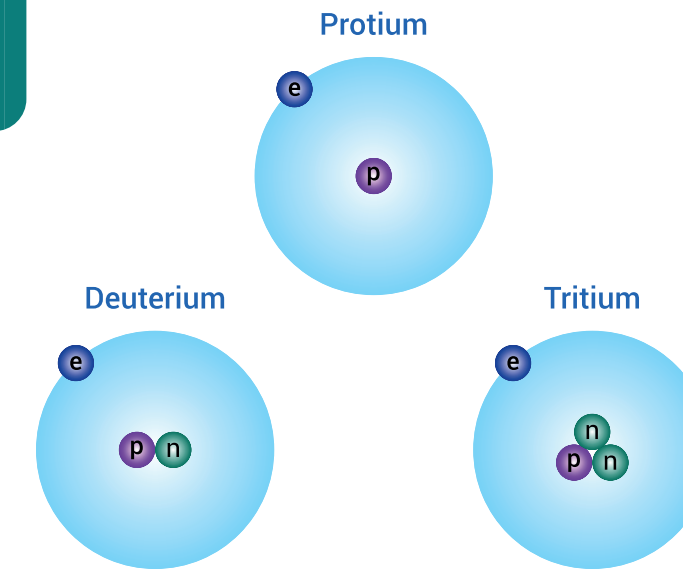


# HYDROGEN

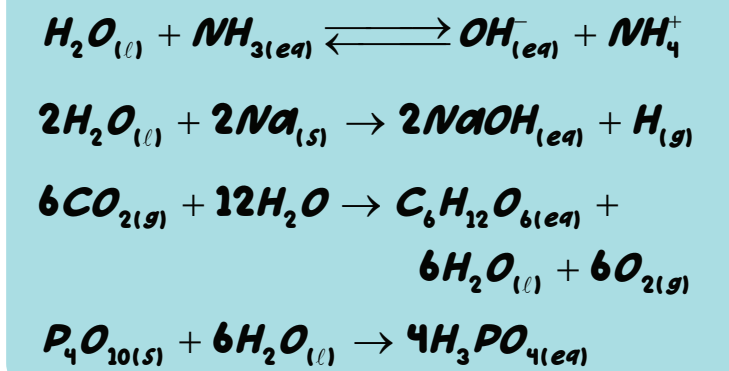
## ISOTOPES OF HYDROGEN



## HEAVY WATER H<sub>2</sub>O

- Preparation: By enchanting electrolysis of water.
- Uses: AS a moderator in nuclear reactors in exchange reactions for the study of reaction mechanisms.

## CHEMICAL PROPERTIES



## PHYSICAL PROPERTIES

- Colourless and tasteless
- High freezing point, B.P. high heat of vaporization, high heat of fusion

## USES

- Synthesis of ammonia
- Manufacture of vanaspati fat
- Preparation of HCl
- If fuel cells
- AS a rocket fuel

## PHYSICAL PROPERTIES

- Colourless
- tasteless
- odorless
- Combustible
- Lighter than air
- Insoluble in water

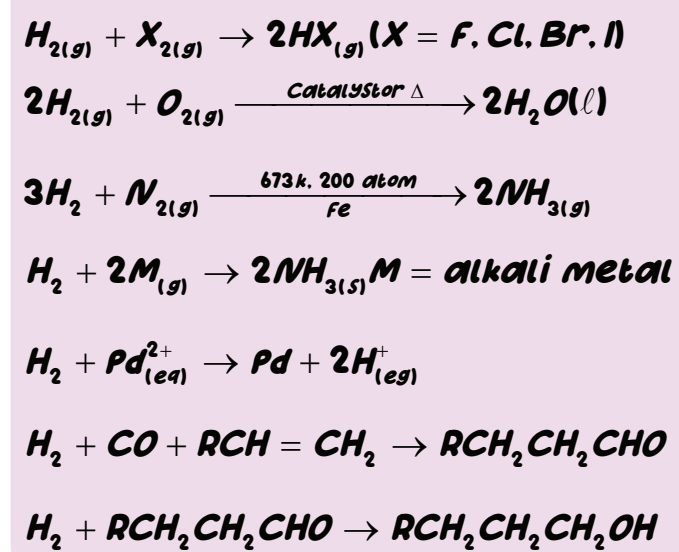
## OCCURENCE

Lightest Element in the periodic table

It exists as diatomic gas (H<sub>2</sub>) at STP.

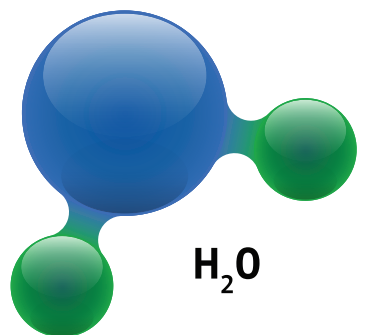
Most abundant Element

## CHEMICAL PROPERTIES



## ICOMIC

- Stoichiometric compounds of dihydrogen formed with s block element
- Also known as saline hydrides



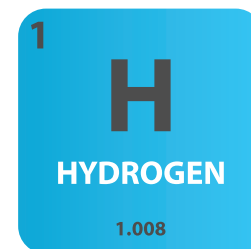
## TYPES OF HYDRIDES

## COVALENT

- Formation of molecular compounds from dihydrogen & block elements
- Also known as molecular hydrides

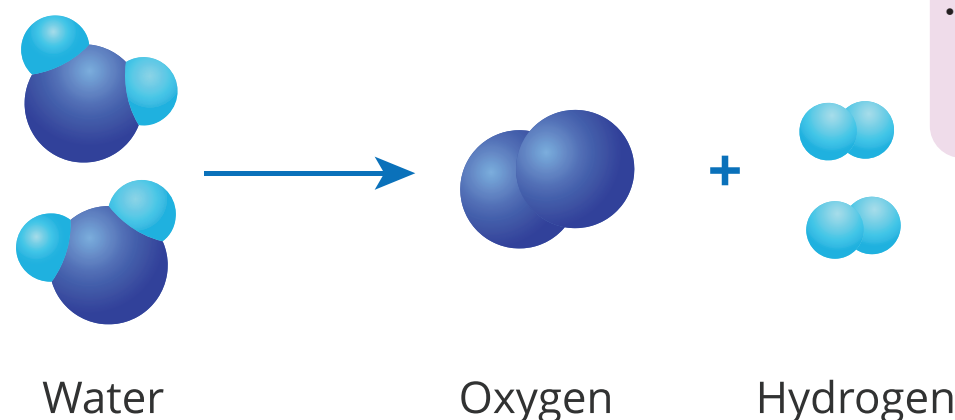
## METALLIC

- Formed by d & f block elements
- Also known as non-stoichiometric or interstitial hydrides



## HYDROGEN ECONOMY

- Use of Hydrogen as alternate source of energy
- Non polluting

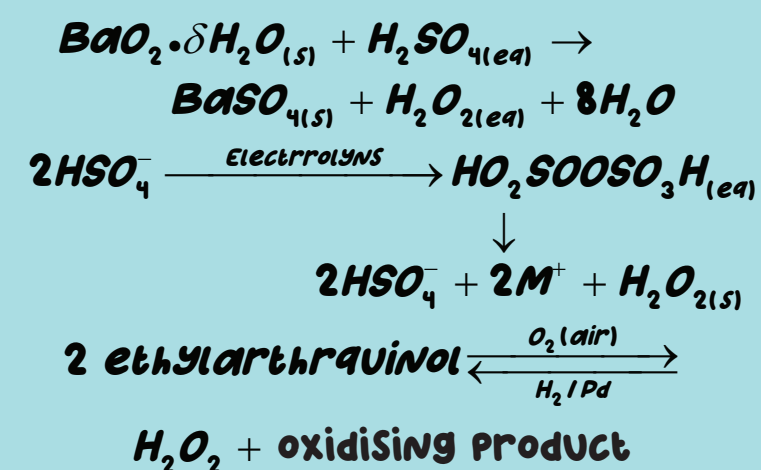


## WATER H<sub>2</sub>O

## COMPOUNDS

## HYDROGEN PEROXIDE H<sub>2</sub>O<sub>2</sub>

## PREPARATION



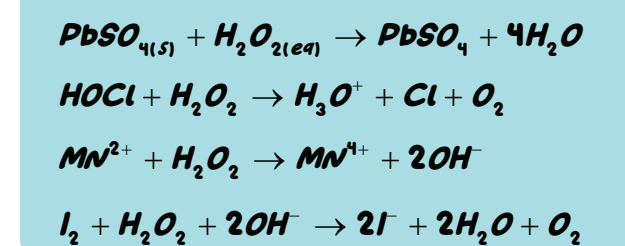
## PHYSICAL PROPERTIES

- Colourless (very pale blue)
- Miscible with water

## USES

- AS hair bleach, disinfectant
- Manufacture chemicals used in detergents
- In environmental chemistry

## CHEMICAL PROPERTIES



**SOFT WATER:** water that produces sufficient lather with soap

**HARD WATER:** It forms an insoluble sum before it form lather with soap

Temporary hardness  
Bicarbonates of mg/calcium

Permanent hardness  
Sulfates or chloride of mg/calcium