

ENVIRONMENTAL CHEMISTRY II

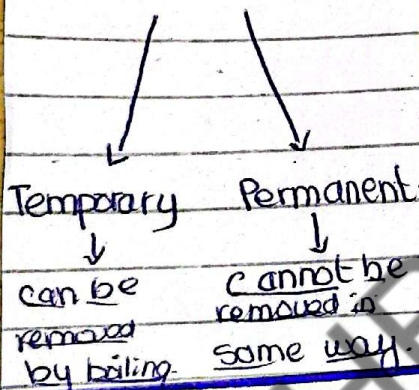
"WATER"

Single Page Notes

"Properties of Water"

- most abundant
- cover 71% of earth crust
- Sea water contain 3.4% salt (NaCl)
- max density at 4°C
- high heat capacity
- high vaporization
- transparent, colorless, & tasteless
- boiling $\rightarrow 100^\circ\text{C}$ Freezing $\rightarrow 0^\circ\text{C}$

TYPES OF HARDNESS



"Composition of H₂O"

- By mass:-
1:8
- By volume:-
2:1
- % of H₂:-
11.11%
- % of O₂:-
88.88%

WATER (H₂O)

AS SOLVENT

- H₂O is an excellent solvent because:-
- (i) Polarity
- (ii) 80 = Dielectric constant
- (iii) Hydrogen bonding

"SOFT WATER"

- low conc. of Mg²⁺ & Ca²⁺ ions
- does not scum
- gives lather
- less likely

to cause scale buildup over time.

"HARD WATER"

- high conc. of Ca²⁺ & Mg²⁺ ions
- forms scum
- gives little or no lather with soap
- It is more likely to cause scale buildup over time.
- hampers cleaning action

METHOD TO REMOVE TEMPORARY HARDNESS

- by boiling
- Clark's Method (by adding slaked lime)

Methods to remove Permanent Hardness

- By adding Na₂CO₃
- By ion exchange method

WATER POLLUTION

- Household waste
- Livestock waste
- Industrial waste
- leaching

WATER BORN DISEASES:-

- Cholera
- Hepatitis
- Dysentery
- Jaundice
- Typhoid

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