

Experiment- 2

Aim: To find out the amount of dissolved CO₂ in tap water.

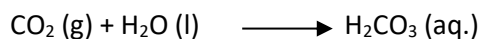
Apparatus required: Burette, pipette, conical flask titration stand and beakers etc.

Chemicals required: N/20- Na₂CO₃ and phenolphthalein indicator.

Theory: Carbon dioxide is an acidic gas in nature. It can be present in water due to two basic reasons:

1. By respiration of aquatic organism
2. Dissolved from the atmosphere.

The CO₂ is in the form of Carbonic acid (H₂CO₃) in the water.



Procedure:

1. Rinsed and filled burette with N/20 Na₂CO₃ solution.
2. Pipette out 10ml of water sample in a conical flask (there should be no air bubbles). Added a 2-3 drops of phenolphthalein.
3. Titrated the solution with Na₂CO₃ from burette, till the pink colour persists for at least 30 seconds.
4. Noted the reading and repeat to get three concordant readings.

Observation Table:

Sr. No.	Burette Reading		Volume of Na ₂ CO ₃ used (ml)
	Initial	Final	
1			
2			
3			

Calculations:

$$N_1 V_1 = N_2 V_2$$

(Water) (Na₂CO₃)

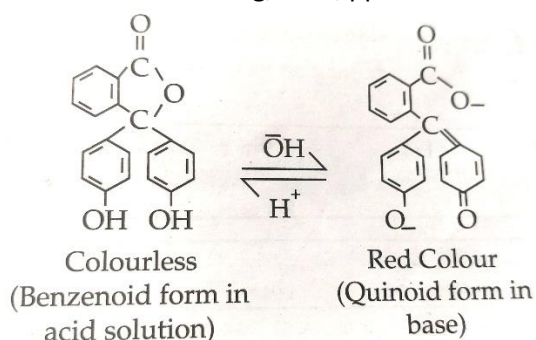
$$N_1 \times 10 = (1/20) \times \dots$$

$$N_1 = \dots \text{N (normality of water)}$$

$$\text{Strength} = \text{Eq. wt. Of CO}_2 \times \text{Normality of water}$$

$$= 22 \times \dots$$

$$= \dots \text{g/L or, ppm}$$



Result:

The amount of free CO₂ present in water sample= ppm.

Precautions:-

- The reaction mixture should be stirred very gently during titration.
- Same amount of indicator should be added while taking different readings.