

- At point B: oxidant of organic matter starts (Bad smell and taste generally appear)

- Point C \rightarrow (Break Point) \rightarrow
Bad taste and odours disappears (oxidation complete).

7. Super chlorination \rightarrow

- Addition of excess amount of chlorine (5 to 15 mg/lit) beyond break point in special cases.

- It is practised when there is epidemic in the society.

7 De-chlorination \rightarrow

- Required when super chlorination is done (to remove chlorine)

- Process of removing excess chlorine

De chlorinating agent

(1) SO_2 gas

(ii) Activated Carbon

Sodium tetrathionate ($\text{Na}_2\text{S}_2\text{O}_3$)

Sodium Bisulphite (NaHSO_3)

Ammonium Hydroxide (NH_4OH)

Testing of Chlorine Residuals:-

(i) ~~ortho~~ ortho toluidine test - (formation of yellow test)

(ii) DPD test

(iii) chlorotem test

(iv) Starch Iodides test

factors affecting chlorination

1. Turbidity \Rightarrow

Disinfection process decreases if water is more turbid.

• chlorine is added after removing turbidity.

2. Presence of metal compound →

Fe & Mn consumes more chlorine

3. Ammonia compound →

Ammonia forms combined chlorine compounds which are not so powerful disinfectants as compared to free available chlorine

4. pH →

increasing pH reduces effectiveness of chlorine.

5. Temp. of water →

Reduction in temperature decreases killing power of both free and combined available chlorine

6. Time of contact →

Kill of pathogens depends upon contact of chlorine and microorganisms

7. Nature and concentration of bacteria and viruses.