

## BORAX

- Chemical formula  $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10 \text{H}_2\text{O}$
- Synonym:- Sodium Borate
- Properties:-
- Colour:-Colourless transparent crystals
- Odour:-odourless,
- Taste:- saline and alkaline taste
- Solubility:- It is soluble in water and glycerin but insoluble in alcohol.
- Chemical Properties:-
- On heating loses all its water of hydration & swells to a white porous powder.
- When heated to red hot & on cooling , forms a transparent mass known as borax bead

- An aqueous sol of Na borate is alkaline to litmus .
- Alkali borate are water soluble.
- Borates of other metals undergo hydrolysis & forms insoluble , hydroxides or oxides.

Action & Uses:- It has been used externally in solutions containing 1 to 2% of borax as an eyewash, gargle in mouthwashes and as a wet dressing used in food preservative

- cosmetics, it is used as emulsifier & also in lotions. germicide & bacteriostatic.

# Protein precipitant Antimicrobial

## SILVER NITRATE

Chemical formula:-  $\text{AgNO}_3$

Mol wt : 169.89

preparation:-

- It is prepared by the action of hot nearly concentrated nitric acid on pure silver.
- 3 parts of silver are added to a sol 25% nitric acid ( about 10 parts) heated to expel the nitrous fumes, filtered & evaporated until it is dry.
- then the mass is fused to convert the copper nitrate into insoluble oxide. So obtained product is dissolved in hot water, filtered it & kept aside in dark place for crystallization.
- crystals are collected on sintered glass crucible & dried at  $50^\circ\text{C}$  in dark.
- Purified of  $\text{AgNO}_3$  is costly therefore pure silver & nitric acid free from halogen & sulphur is used. <sup>63</sup>



## Properties

- Colour:-White
- Odour:- odourless
- Nature:-Rhombic crystals
- Taste:- Bitter taste
- Solubility:-Very soluble in water
- Sparingly soluble in alcohol, freely soluble in boiling alcohol It becomes grey/greyish black .
- On exposure to light in presence of organic matter, due to liberated silver.

### Chemical Properties:-

- 1% sol has PH between 4.5- 6
- 4% sol has bet 5.4- to 6.4
- at 212° C it melts to a slightly yellow liquid which on cooling congeals to a white crystalline mass.
- At high temp is slowly decomposes evolving oxides of nitrogen. it produces chemical reaction of silver ion & nitrate ion.

➤ Sol of  $\text{AgNO}_3$  gives white- yellow –white ppt with HCL & other halogen containing salts.

➤ The silver halide ppt is insoluble in dil acids but dissolve in ammonia.

Storage :-

➤ Should be stores in tightly closed light **resistant non metallic containers** .

➤ Sol should be freshly prepared & supplied in amber Coloured bottles.

Incompatibility:-incompatible with reducing agent, Tartarates, Sugar, Tannins, Alkali halogen acids & their salts.

**Uses:-**

- 1) Antibacterial in conc. from 0.01 to 0.5%
- 2) In higher conc 1% above it has astringent, irritant property on tissues .
- 3)  $\text{AgNO}_3$  ophthalmic sol 1% is used in eyewash, 0.5% aq sol for treating burns injuries & in wet dressings.
- 4) Its effective against coccol infections