

CONCEPT: LIQUID CHEMICALS: HALOGENS

● **Halogens:** highly reactive *oxidizing* agents that damage proteins & other cell components.

- The halogens _____ & _____ are commonly used disinfectants.

Chlorine

● **Chlorine:** a halogen chemical that _____ inanimate objects when used appropriately.

- Generally used at _____ concentrations because it is both toxic & corrosive at *high* concentrations.
- Can react with organic matter to form _____ products.

● Chlorine is readily available in multiple forms including:


- **Sodium Hypochlorite** (liquid _____): inexpensive & readily available form of *chlorine*.
- **Chlorine Di** _____ (ClO_2): less harmful form used to *disinfect* drinking water.


Chlorine

Sodium Hyper_____

(Bleach)

$$\text{Na}^+ \left[\begin{array}{c} \text{:}\ddot{\text{Cl}}\text{:} \\ | \\ \text{O}^- \end{array} \right]$$


Used to disinfect _____ water & swimming pools
at *low* concentrations.



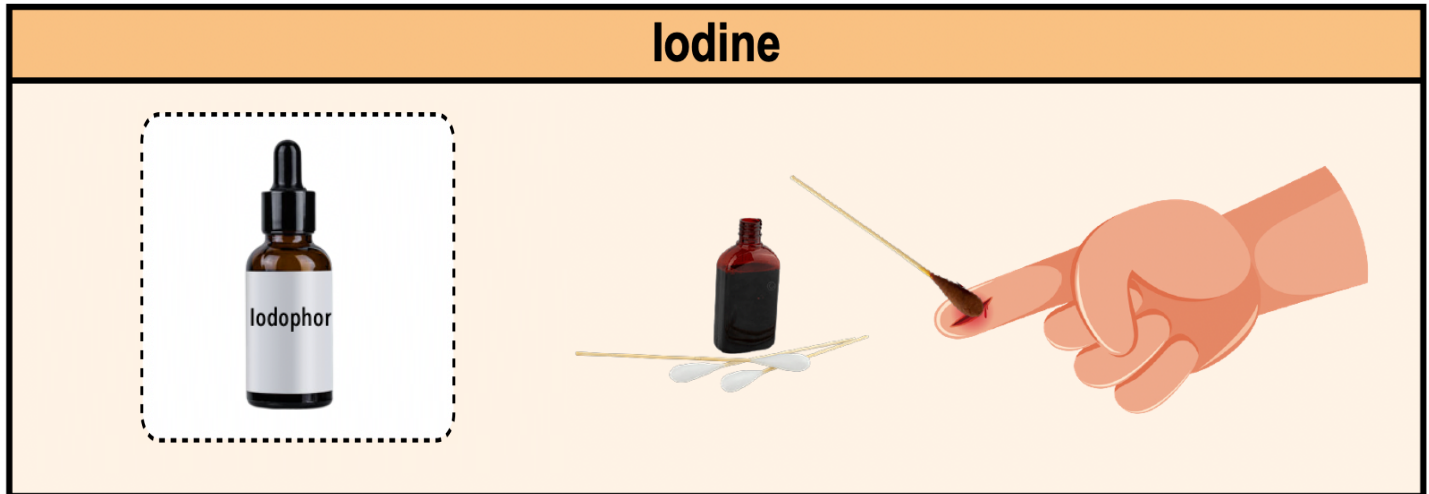
PRACTICE: Chlorine:

- Readily reacts with organics to produce potentially carcinogenic trihalomethanes.
- Is an effective, inexpensive, disinfectant able to destroy all types of microorganisms.
- Is unaffected by the presence of organic material.
- Is ineffective when diluted.
- A and B.
- C and D.

CONCEPT: LIQUID CHEMICALS: HALOGENS

Iodine

- **Iodine:** halogen chemical that kills most microbes & is often in the form of a *tincture* or an _____.
- **Iodophor:** a combination of iodine & an organic molecule, from which the iodine is released slowly.
 - Can act as a *disinfectant* or an *antiseptic* depending on the _____.
 - _____-irritating at low concentrations when used as an antiseptic to treat wounds or burns on the skin.



PRACTICE: Which is true of iodine?

- a) It does not readily kill endospores.
- b) It may be used as an antiseptic or as a disinfectant.
- c) It is important to use it at the recommended dilution.
- d) It is usually found as tinctures or iodophors.
- e) All are true.

PRACTICE: An iodophor is:

- a) A highly concentrated form of iodine in a water-alcohol solution.
- b) A 2% diluted form of iodine in a water-alcohol solution.
- c) A undiluted form of iodine.
- d) A solid form of iodine.