

EVERYDAY COMPOUNDS: SODIUM HYPOCHLORITE

A SOLID COMPOUND WHICH, WHEN DISSOLVED IN WATER, IS COMMONLY KNOWN AS BLEACH. FREQUENTLY USED AS A DISINFECTANT.

IN BLEACH

70% of sodium hypochlorite produced is used to make bleach, which consists of around 3-8% sodium hypochlorite; sodium hydroxide is often also present to prevent the sodium hypochlorite decomposing. When it's dissolved in water, hypochlorous acid (HOCl) is formed, a very strong oxidising agent that can react with and break down many molecules, including dyes.

Bleach shouldn't be mixed with other cleaners, as reaction with acids can produce toxic chlorine gas:



SODIUM HYPOCHLORITE

Antiformin, bleach

White powder

Green/yellow solution in water



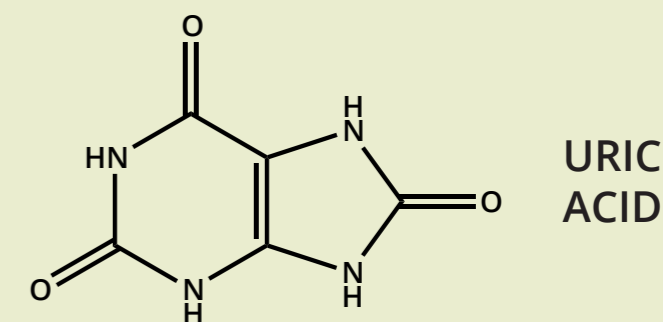
NERVE AGENT NEUTRALISATION

Sodium hypochlorite is used in a 50% solution for blister and nerve agent decontamination, and works via its oxidising action. It's also used in a 0.5% solution to reduce tissue damage to blister agent victims.

IN SWIMMING POOLS

Chlorinated swimming pool water isn't chlorinated with chlorine, which is difficult to handle. Instead, sodium hypochlorite is used. In water it forms the disinfectant hypochlorous acid. Calcium hypochlorite is an alternative.

The uric acid in urine can react with hypochlorous acid to produce toxic cyanogen chloride, though not in high enough levels to be harmful to health.



IN ANTIBACTERIAL SPRAYS

Solutions containing around 0.5% sodium hypochlorite can be used as disinfectants effective against a wide range of bacteria. The hypochlorous acid attacks the proteins in the cells of microbes, and also causes their cell membranes to burst.