

WHAT IS THE KLORMAN KENNEL PLUS SYSTEM?

THE **KENNEL PLUS SYSTEM** is a delivery system, **and NOT A CHEMICAL** it uses a buffered, **approved**, calcium hypochlorite tablet to make a buffered calcium hypochlorite solution, pH (7 to 8) depending on local conditions. The **FRESH** hypochlorite solution is being used as it is being produced by the **KENNEL PLUS SYSTEM**

Anywhere a chlorine solution, or "bleach" a sodium hypochlorite solution is approved to be used; the solution produced by the KLORMAN SYSTEM is approved. It is called a Letter of Understanding between Regulatory Agencies. Furthermore, the calcium hypochlorite solution produced by the **KLORMAN SYSTEM** is exempt from the requirement of tolerant residues (40 CFR 180.1054). It is also approved by USDA and FDA for direct food contact, an approval not granted to sodium hypochlorite "bleach".

There are four main and distinct differences between **calcium hypochlorite** and **sodium hypochlorite**, "**chlorine bleach**".

1. - Dry calcium hypochlorite tablets used by the **KLORMAN** system produce a "**FRESH**" Hypochlorite solution when mixed with water. In tests done, a solution produced with the proper calcium hypochlorite tablet, can maintain FAC (**free available chlorine**) for about 4 hrs. Then it starts rapidly degrading.

According with the technical and published literature depending with the storage conditions i.e., temperature, light and age all hypochlorite solutions will lose half of their potency in less than thirty days.

2. - "**BLEACH CONTAINS LYE. THE SOLUTION MADE BY KENNEL PLUS DOES NOT.** The main disinfectant in a "bleach" solution is the lye that has been added at the time of manufacture. Lye burns human, plant and animal tissue, it is very corrosive, will destroy plaster, cement and metals, saponifies fats and needs a long contact time.

3. - **HOCl** (hypochlorous acid). This species of chlorine is the most germicidal of all chlorine compounds, **between 80 and 120 times stronger** than the **OCl⁻** ion. (Kapoor, University of Illinois. Fair, G.M. Harvard University). The pH of the solution is the determining factor on which species of chlorine is produced, **HOCl or OCl⁻**. The ideal being pH of 7 to 8. This is what the **KLORMAN SYSTEM** produces; with the proper PPM it oxidizes most organisms in less than 60 seconds.

4.- Most **FRESH CALCIUM HYPOCHLORITE** solutions including the solution made by **THE KENNEL PLUS SYSTEM**, using the patented and approved **HYPOCHLOR** tablet, have a pH of less than 9, **ALL (fresh or old) SODIUM HYPOCHLORITE** solutions, ("**chlorine bleach**") unless buffered by the injection of an acid have a pH of 10.25+ producing **no HOCl**. These solutions produce only the **OCl⁻** ion.

REFERENCES

1. - George Clifford White, Chemical Engineer, *Handbook of Chlorination and Alternative Disinfectants*. Third Edition, Van Nostrand Reinhold, New York, 1999
2. - George R. Dychdala. Chlorine and Chlorine Compounds. In: Block SS, ed. *Disinfection, Sterilization, and Preservation*, 5th ed. Philadelphia Lippincott Williams & Wilkins, 2001

NOTE: THERE ARE A NUMBER OF STATES INCLUDING CALIFORNIA THAT HAVE NOT GRANTED BLEACH AND EPA REGISTRATION FOR IT TO BE USED IN ANIMAL FACILITIES.