

nearly 150 years, society has had a powerful weapon against life-threatening diseases caused by viruses and bacteria: chlorine. One of the most effective and economical germ-killers, chlorine destroys and inactivates a wide range of dangerous germs in homes, hospitals, hotels, restaurants, of course, water. Chlorine's powerful disinfectant qualities come from its ability to bond with and destroy the outer surfaces of bacteria and viruses. First used as a germicide to prevent the spread of "child bed fever" in the military wards of the Vienna (Austria) General Hospital in 1846, chlorine's widespread use as a disinfectant is one of the most important public health advances of the 19th century.



REFERRED WATER DISINFECTANT

From drinking water to swimming pools, chlorine is a disinfectant to remove bacteria, viruses, and other contaminants found naturally in water. First introduced into the U.S. water supply in 1902, chlorine and chlorine-based compounds are used by 98 percent of all public water supplies to disinfect. Chlorine's popularity with public health officials is well-known: chlorination is the only water disinfection method that cleans and protects all the way to the tap. In a 1992 survey, 92 percent of U.S. public health officials agreed that chlorine is crucial to eliminating waterborne diseases, and 87 percent cited it as the safest method to assure quality drinking water. Waterborne bacteria, microorganisms and viruses that chlorine kills read like a "most-wanted" list of public health scourges:

- cholera and typhoid fever
- amoebic dysentery, bacterial gastroenteritis
- shigellosis, salmonellosis, campylobacter
- Legionnaire's Disease
- Hepatitis A, Norwalk Virus and Rotavirus.

While clean, safe water supplies are essential to everyone, chlorine's vital role in water disinfection is especially important to individuals who are at greater risk from waterborne diseases, including infants and young children, the elderly, cystic fibrosis sufferers, burn victims and people with immune disorders or who are immune-suppressed (such as AIDS sufferers, chemotherapy recipients and organ transplant patients).

THE BENEFITS OF BLEACH AND BEYOND

From cleaning kitchens, bathrooms and baby nurseries to stopping the spread of the AIDS virus via contaminated needles, chlorine bleach is a powerful disinfectant.

AT HOME

In the home, chlorine bleach is an all-purpose disinfectant, destroying most household germs including:

- staphylococcus
- salmonella
- pseudomonas
- athlete's foot fungus.

From "whiter whites" to dishwasher detergents, scouring powders and soaps, chlorine helps keep homes clean.

IN THE HOSPITAL

Chlorine compounds are used widely to maintain hospital cleanliness and prevent thousands of life-threatening infections. As a bleach and a medicinal aid, chlorine compounds:

- prevent bacterial contamination of patients' burns and wounds
- disinfect kidney dialysis machines
- clean and disinfect work surfaces and equipment in medical laboratories
- kill deadly bacteria, such as Legionnaire's Disease, that can live in hospital water and air conditioning systems.

Chlorine also plays a vital role in everyday hospital life by ensuring an abundant supply of sanitary water for drinking, bathing and other patient needs. Hospitals rely on chlorine's disinfectant powers to kill dangerous bacteria that can contaminate food in kitchens and cafeterias.

IN FOOD PREPARATION

Restaurants and meat and poultry processing plants rely on chlorine bleach and other chlorine-based products to kill bacteria such as salmonella,

E. coli and campylobacter on food preparation surfaces and during food processing.

Chlorine is so important in poultry processing that the U.S. Department of Agriculture requires a chlorine rinse for all eviscerating equipment after use on each bird in the slaughter line. In fact, no proven economical alternative to chlorine disinfection exists for use in meat and poultry processing facilities. The poultry themselves

even receive a bath in a chlorinated solution before they leave the processing plant.

IN PUBLIC PLACES

On hot summer days, a dip in the swimming pool is safe thanks to chlorine, which wipes out a broad array of microorganisms, bacteria and viruses. Many other public places rely on chlorine. Hotels, nursing homes, schools, summer camps, resorts, spas and cruise ships all depend on chlorine to provide safe drinking water, effective cleaning and disinfection and sanitary food preparation.

150 YEARS OF PROVEN BENEFITS

Without chlorine's disinfectant capabilities, life would be a lot more dangerous — and deadly. Although most Americans never think about getting sick or dying from drinking water, more than 25,000 people in other countries around the world still die every day from diseases associated with dirty water, according to the World Health Organization. Cholera and typhoid fever, two waterborne diseases that chlorinated water virtually eliminated in the United States, still plague some countries in Latin America and Africa that do not have chlorine-disinfected water supplies.

The benefits of chlorine's disinfectant powers are clear: Since its introduction into the U.S. water supply and widespread use as a germicide, infant mortality rates have dropped dramatically, life expectancy has increased by 50 percent, and deaths from waterborne disease in the U.S. have been virtually eliminated.

For just pennies a day, chlorine cleans and protects. No other disinfectant does so much, for so little, for so many.



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