

Food Process Sanitation with Chlorine Dioxide

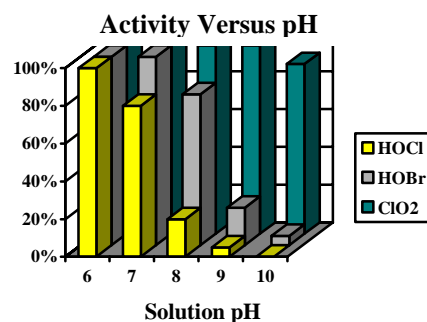
- Broad spectrum antimicrobial activity
- 10 times more soluble in water than chlorine
- Resists neutralization by organics and hardness to a greater degree than most other compounds
- Less corrosive than hypochlorites, chlorines, bromines, iodine, etc.
- Rapid antimicrobial kills
- Slower bacterial recovery
- Disinfection effective over a wide pH range
- Effective at very low dosages
- Non-reactive with ammonia
- Excellent for removal of bioslime
- Can be fogged or sprayed
- Minimizes hazardous residues

Maintaining a high quality sanitation program to prevent the ingestion of microorganism contaminated food is critical to all food operations. Food contamination can damage customer confidence, elevate financial risk due to product recalls, or even result in loss of life. Past experience has proven the need for more effective and powerful sanitation programs in food processing facilities (e.g. poultry, meat, fish, bottling plants, restaurants, dairies, and breweries).

The emergence of highly virulent strains of pathogens requires new approaches to sanitization programs. International Dioxide, Inc. has a variety of approved applications utilizing chlorine dioxide in food processing environments. Chlorine dioxide, with its broad spectrum antimicrobial activity, can deliver kills against a wide range of microorganisms over shorter periods of contact time. Chlorine dioxide, when properly applied, minimizes toxic residues as it doesn't produce halogenated organic by-products. Chlorine dioxide minimizes corrosion to processing equipment, tanks, lines, etc., as it is true dissolved gas in water when compared to chlorine.

Versatile Antimicrobial Activity

Chlorine dioxide is a versatile antimicrobial that can be used in numerous applications as it is effective against viruses, fungi and algae



over wide temperature and pH ranges. The use of chlorine dioxide reduces contact time by 3 to 10 times over chlorine while being effective over a broad pH range. Chlorine dioxide can be used at much lower doses than typical halogen antimicrobials with far superior microbial control. Its aggressive attack on bioslime ensures less fouling of piping and practically eliminates bacterial "seeding" of process waters.

Application

All Food Contact Surfaces (USDA D2)

Chlorine dioxide can be used as a D2 sanitizer throughout food processing plants on all contact surfaces, including all processing equipment, transfer lines, tanks, trays, bins, blenders and conveyors. D2 does not require a potable water rinse after application. Sanitizers are applied using either a portable or a central system, clean in place (CIP) or clean out of place (COP).



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The terminal sanitizing rinses should be applied according to specific directions for use on the EPA-approved label.

Indirect Food Contact (USDA G5)

Chlorine dioxide can be used to treat recirculating or once-through process water used for container or packaging, cooling, ice loops, retorts, rotary coolers, hydrostatic sterilizers and pasteurizers in the canning, frozen food, dairy, beverage, and brewing industries.

Secondary Food Additive

(USDA 3D Direct Food Contact)

Chlorine dioxide can be used to treat waters that transport fruits, vegetables, poultry, etc. Chlorine dioxide is used as a sanitizing wash and is usually followed by a potable water rinse. This includes primary and secondary flume canals, product transfer loops, and finished product rinses prior to packaging or storage.

Simple and Effective Process

In all sanitation applications, the chlorine dioxide solution requires either activation or on-site generation. Selection of the actual process will vary based on demand and complexity. International Dioxide, Inc., with over 50 years experience, offers a wide array of precursor chlorine dioxide chemicals and patented OYCHLOR® generation technologies that deliver a simple-to-use, low-cost and highly efficient process for your application.

Health Effects

In recent years, chlorine and chlorinated compounds have come under severe scrutiny because of health effects and environmental concerns. Chlorinated compounds form when chlorine reacts with organic material in water producing powerful carcinogens such as trihalomethanes, haloacetic acid and dioxins. Chlorine dioxide does not react to produce these chlorinated by-products or other toxic compounds that are discharged to the environment, causing risk to human health and potential taint to foods.

EPA and FDA Approval

ANTHIUM® and ADOX® solutions are registered as terminal sanitizers (40CFR180.940; previously 21 CFR 178.1010) for use on hard surfaces in production areas as well as in any CIP or COP systems that require routine sanitation or disinfection. FDA regulations (21 CFR 173.300 “Chlorine Dioxide” and 173.325 “Acidified Sodium Chlorite”)

describe the allowable uses to wash fruits and vegetables as well as in poultry, meat and seafood processing.

Approved Applications

- Microbial control of flumes, processing waters, retort waters, cooling canals, warmers, and coolers.
- Fruit and vegetable rinses. Uncut and unpeeled, as well as cut and peeled (potable rinse required).
- Food contact surface sanitizer for all processing equipment surfaces.
- Cooling towers for slime and odor control.
- Rendering facilities for odor control.
- Whole plant potable water treatment.
- Control mold and slime-forming bacteria on walls, floors and ceilings.

Before using product, always read and follow label instructions.

More Information Available

International Dioxide, Inc., a DuPont Company, is a world-leading specialty chlorine dioxide company, supplying high-value biocidal products and related technology for disinfecting, sanitizing and controlling odors.

For additional information about the use of International Dioxide's ANTHIUM DIOXIDE® ADOX® and OYCHLOR® products or their applications, please call our sales office.

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