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Diya Chemicals

Application of Clo₂

Drinking Water
Process Water
Portable Water
ETP Water
Cooling Tower
Food Industry
Dairy Industry
Beverage Industry
Hotels
Hospitals
Poultry
Paper N Pulp
Swimming Pool
Spa
Irrigation

And many more....



Green Dioxide a Superior Technology..

Chlorine Dioxide - Chlorine Dioxide as in a Liquid at normal temperatures and pressures and has the chemical formula ClO₂. It is a highly effective, eco-friendly microbicide that carries a number of important regulatory approvals from several international organizations including the US EPA, FDA and UK Government for many of its uses.

Chlorine dioxide is a strong bactericide and virucide at concentrations as low as 0.1 ppm. It will eliminate both planktonic and sessile bacteria; disinfect surfaces; and rapidly destroy problematic biofilm. With minimal contact time, it is highly effective against many pathogenic organisms including bacterial spores, Legionella, Tuberculosis, MRSA, VRE, Listeria, Salmonella, amoebal cysts, Giardia cysts, E. coli, and Cryptosporidium. Importantly, chlorine dioxide also destroys biofilm so bacterial re-growth is significantly impeded.

Diya Chemicals, Vapi offer several alternative technical solutions for the delivery of varying amounts of high purity chlorine dioxide. Each delivery method has been developed to suit specific demand and application environments. Chlorine Dioxide products include:

Green Dioxide (Chlorine Dioxide) Benefits:

- Safe, compact, easy to use two component liquid technology.
- Ideal and very cost effective for small to medium users of chlorine dioxide.
- Effective against all water related micro organisms (bacteria, viruses, protozoa, fungi, yeast). Improved safety - generating chlorine dioxide using **Green Dioxide** (ClO₂-Liquid) does not create an explosion hazard; unlike some other methods.
- Generate chlorine dioxide on demand - make as much as you need, only when you need it.
- Very cost effective method of generating chlorine dioxide with minimal initial investment costs in plant, equipment and training.
- No release of free chlorine, chlorite, chlorate and chloride.
- The smell, taste and color of drinking water improves.
- Less load on sewage.
- Reduction of residue in water.
- No resistance building by micro-organisms.
- Removal of on Biofilms
- Fully operational at pH levels between 4 and 10.
- Better Result in Fruits n Vegetable Surface Cleaning.
- Maintain the water quality for longer duration.



Plot No. A-2/2115 , 3rd Phase GIDC Vapi-396195

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“Green Dioxide a Safe alternative for General Disinfection and Sanitization”

-:Approvals:-

Chlorine Dioxide:-Food and Drug Administration Approved.

Chlorine Dioxide:- USEPA Approved.

Web link :- <http://www.epa.gov/opp00001/factsheets/chemicals/chlorinedioxidefactsheet.htm>

Green Dioxide(Chlorine Dioxide)

Chlorine dioxide is a well known wide spectrum disinfectant in INDUSTRY in General. It has been developed as an environmentally safe technology that protect humans against pathogenic micro-organisms and at the same time protect the environment from toxic by-products generated by other means of disinfection, After killing a wide variety of microorganisms and protozoa , it reduces safely to common salts (does not generate any organic compound , potentially carcinogenic , nor any harmful by- products) Even though , chlorine dioxide contains a , the chlorine atom is always bonded to an oxygen atom , thus always remains chemically inactive.

“Green Dioxide” its brand name of Diya Chemical, Vapi. The superior anti-microbial characteristics of chlorine dioxide generated by Diya Chemical with name of “GREEN DIOXIDE”. Our mission to develop a new technology to make chlorine dioxide as an effective and safe product for various application for various industries.

What is Green Dioxide (Chlorine Dioxide)?

Green Dioxide is two concentrate component A-01 and B-02 that generates a stabilized solution of chlorine dioxide, A wide spectrum disinfecting agent that has great advantages over any other sanitizing agent.





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Is Green Dioxide the same as Chlorine?

Even though Green Dioxide(Chlorine Dioxide) contains chlorine , its chemical behavior is radically different from chlorine. One atom (oxygen) makes the difference. In chlorine dioxide, the chlorine atom is always chemically bonded to one oxygen atom, thus it is always chemically inactive. The same happens with Hydrogen, when isolated, it is explosive; however, when attached to oxygen, it becomes water.

-:Other Green Dioxide Applications:-

- DESINFECTION OF ALL TYPES OF SURFACES
- FOOD PROCESSING
- ANIMAL SANITIZATION
- AQUACULTURE INDUSTRY
- POULTRY INDUSTRY
- DAIRY INDUSTRY
- MUNICIPAL WATER TREATMENT
- DRINKING WATER TREATMENT
- SANITIZER FOR EQUIPMENT AND PROCESSING AREAS.
- DISINFECTION OF GRAINS AND SEED.
- DISINFECTIONS OF FRUIT AND VEGETABLES.
- POULTRY PROCESSING.
- PROCESSING OF RED MEATS.
- ICE.
- CIP SANITIZING.
- COOLING TOWER WATER TREATMENT





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Chlorine Dioxide (ClO₂) Compares with other Disinfectants

Characters	ClO ₂	Chlorhexidine	Iodine	Chlorine / Hypochlorite	Phenol	Aldehyde	NaOH	Alcohol	Ammonium Hydroxide
Resistance to Organic Matter	Good	Ordinary	poor	poor	General	good	good	General	General
Activity in Hard-water	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Affect High Temperature	Result is best in 26-60 °C	No	Activity decreased	Activity decreased below 43 °C	Activity increased	Result is best in 26-60 °C	No	No	No
pH Range	No effect	Alkaline	Acidic	Acidic	Acidic	No effect	Alkaline	No effect	Alkaline
Anion Soap Compatibility	No	Yes	Yes	No	Yes	yes	Yes	No	No
Activity of Residue	No	Yes	Yes	No	Yes	No	Yes	No	No
Toxicity or Discomfort	No	No	No	Yes	Yes	Yes	Yes	Yes	No
Damage to Surface	No	No	No	Yes	No	Yes	Yes	No	No
Kill the Bacteria	Most	Part	Most	Most	Most	Yes	Most	Most	Part
Kill the Spores	Yes	Part	Part	Part	No	Yes	Yes	No	No
Kill the Viruses	Yes	No	Part	Part	Part	Yes	Yes	Part	Part





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Different States Approved of Legal Provisions on Chlorine Dioxide

Time	State	Approved Bureau	Usage Range
1992	—	WHO	Drinking Water Disinfection
1985	U.S.A	FDA	Food Processing Equipment Sterilization
1985	EU	European Commission	Drinking Water Disinfection, food industry, medical, livestock husbandry, aquaculture, environment and public areas disinfection and sterilization
1987	Germany	—	Drinking Water Disinfection
1987	UK	Ministry of Health	Drinking Water Disinfection, hospital, livestock aquaculture, environment and public areas disinfection and sterilization
1987	U.S.A	EPA	Food processing plants, breweries, restaurants, environmental disinfection; Hospitals, labs and non-empty rigid surface equipment sterilization and removal mildew
1989	U.S.A	EPA	Storage water disinfection; Livestock, disinfection and deodorizing
1988	Japan	Ministry of Food Health	Drinking Water Disinfection
1987	Australia	Ministry of Health	No. 926 food Additives, food Bleacher
1987	China	Ministry of Health	Food industry, medical, pharmaceutical, livestock husbandry, aquaculture, environment and public areas disinfection and sterilization
1996	China	Ministry of Health	Food additives, fruits and vegetables Preservation
2002	U.S.A	FDA	Food processing equipment, pipe, crafts and arts equipment, especially in milk processing plant
2005	China	Ministry of Health	Drinking Water Disinfection





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-:Chlorine Compares with Chlorine Dioxide:-

Chlorine	Green Dioxide(Chlorine Dioxide Liquid)
Does not remove biofilm	Will remove biofilm and thus clean tanks and pipes
Produces unwanted by-products including carcinogens	Does not form chlorinated by-products
Is corrosive and unpleasant to handle	Is much less corrosive than chlorine. Does not hydrolyse to form an acid
Already Banned in certain parts of Europe and the USA	Is rapidly replacing chlorine in many of these areas
Is pH dependent and very ineffective above pH 7	Is not pH dependent (<pH 11)
Is ineffective against complex organisms (e.g: Cysts & Protozoa)	A very broad spectrum kill*
Limited oxidative effect against various chemical contaminants. Forms chlorinated phenols	Destroys phenols (without forming chlorinated phenols) specific destruction of Hydrogen Sulphides. Destruction of a wide range of chemical contaminants#
Neutralisation required before dumping to the foul drain	Because no unwanted by-products are formed, and will have a lower residual after use, no neutralization normally required
Can not be used at temperatures above 40oC due to the release of chlorine gas	Effective at higher temperatures-does not disassociate as rapidly as chlorine
Increased disinfection time and more service work required to combat high bug counts	Cost savings in labour and use efficiency outweighs the additional chemical costs

More Details Feel Free to Contact us...

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