



**Roots Biotech's**

# **Roochlor 10**

10% Stabilised Chlorine Dioxide

**Guaranteed Zero Microbial Count**



## Successful poultry business depends on

- 1) Proper infrastructure
- 2) Good breed – Layer or Broiler
- 3) Proper feed supplement
- 4) Clean ample water
- 5) Balance between cost & profits

Biggest threat is the disease spread through water, air & feed.

70 % of disease spread through waterborne microbes & water contamination.

BIOSECURITY is the FIRST priority.

IDEAL BIOCIDES – Must be bactericidal, virucidal, fungicidal, sporicidal & effective against moulds / algae / cyst / protozoa.

Presenting ROOCHLOR 10 – 10% Stabilized Chlorine Dioxide solution.

1) Kills almost all aerobic, non-aerobic, gram positive & gram negative bacteria, viruses, moulds, fungi, algae, cyst, protozoa and spore formers such as Giardia and Cryptosporidium – IN 60 SECONDS.

2) Effective across wide pH band (2 to 12) & even in hard water.

3) Effective in presence of organic matter.

4) Removes biofilm and inhibits its reformation – Prevents bacterial outbreak keeps the pipes clean and scale free, free flow of water till the end last nipple.

5) Continuous use of ROOCHLOR will eradicate biofilm and slime formation and will never allow bio films to form. This keeps the total water distribution systems clean & significantly delay the scale formation.

6) Has an excellent deodorizing effect.

7) ROOCHLOR is a stabilized liquid chlorine dioxide which is safe to store, transport, non hazardous and is easy to use. Chlorine dioxide is approved as water disinfectant by WHO, USFDA, EPA & DEFRA \*Details available on website of all these government institutes.



## Comparison of Chlorine & Chlorine Dioxide

Chlorine	Chlorine dioxide
Does not remove biofilm & slime.	Will remove biofilm and slime thus maintaining 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. Effective across wide pH band (2 to 12).
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 neutralisation normally required.
Cannot be used at temperatures above 40° C due to the release of chlorine gas.	Effective at higher temperatures – does not dissociate 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.

\* Includes aerobic, non-aerobic, gram positive & gram negative bacteria, spores, viruses, fungi, cysts and Protozoa.

# Includes iron, manganese and other metallics, phenols, trichlorophenols, Hydrogen Sulphides and Sulphides.

## Mode of action :

Chlorine Dioxide is an oxidizing biocide. It deactivates micro organisms by attacking and penetrating their cell wall, disrupting the transport of nutrients across the cell wall and inhibiting protein synthesis. Since this action occurs regardless of the metabolic state of the organism, oxidizing biocides are effective against dormant organisms and spores (Giardia Cysts and Poliovirus). It does not create toxic by-products harmful to wildlife or the environment.

## Roochlor 10 – Stabilized Chlorine Dioxide spectrum

Chlorine Dioxide is used as a Disinfectant, Sanitizer, Tuberculocide, Virucide, Fungicide, Algaecide, Slimicide, and Deodorizer. Applications include Poultry water system, Poultry cages, veterinary hospitals & kennels.

Chlorine Dioxide is hard Surface Disinfectant, is EPA registered for killing Methicillin Resistant *S. aureus* (MRSA), *Staphylococcus Aureus*, *Listeria monocytogenes*, *Pseudomonas aeruginosa*, *Salmonella*, *Trichophyton mentagrophytes* (Athletes foot), Vancomycin Resistant, *Enterococcus faecalis*, *Mycobacterium Bovis* (TB), *Candida albicans*, *E Coli* and *Klebsiella pneumoniae*.

Chlorine Dioxide is an EPA registered virucide for non-enveloped viruses including; Ebola, Adenovirus type 5, Coronavirus, HIV-1, Hepatitis A, Herpes Simplex-2, Poliovirus-1, Influenza A, Canine Parvovirus, Norovirus, Feline Calicivirus, Rhinovirus, Rotavirus and Vaccinia Virus.

### Chlorine Dioxide is Effective against the following Pathogens : ANIMAL AND ZOO NOTIC PATHOGENS

- **BACTERIA** - *Actinobacillus pleuropneumoniae*, *Bacillus cereus*, *Bordetella avium*, *Bordetella bronchiseptica*, *Campylobacter pyloridis*, *Clostridium perfringens*, *Dermatophilus congolensis*, *Erysipelothrix rhusiopathiae*, *Escherichia coli*, *Fistulous withers* (Poll Evil), *Haemophilus somnus*, *Klebsiella pneumoniae*, *Moraxella bovis* (Pink Eye), *Mycobacterium bovis*, *Mycoplasma gallisepticum*, *Mycoplasma mycoides*, *Pasteurella multocida*, *Pseudomonas aeruginosa*, *Pseudomonas mallei* (Glanders), *Pseudomonas vulgaris*, *Salmonella choleraesuis*, *Salmonella typhimurium*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Streptococcus equi* (Strangles), *Streptococcus pyogenes*, *Streptococcus suis*, *Taylorella equigenitalis*, *Treponema hyodysenteriae*
- **VIRUSES** - Adenovirus Pneumonia, African Horse Sickness Virus, African Swine Fever Virus, Avian Influenza Virus, Avian Laryngotracheitis Virus, Bovine Adenovirus Type 4, Bovine Papilloma Virus, Bovine Pseudocowpox Virus, Bovine Viral Diarrhea Virus, Calf Rotavirus, Canine Adenovirus, Canine Coronavirus, Canine Parainfluenza Virus, Canine Parvovirus, Chicken Anemia Virus, Coital Exanthema Virus, Distemper Virus, Duck Adenovirus, Duck Enteritis Virus, Egg Drop Syndrome Adenovirus, Equine Arteritis Virus, Equine Infectious Anemia Virus (Swamp Fever), Equine Herpes Virus (Type 1), Herpes Virus Equine (Type 3), Hog Cholera Virus, Equine Contagious Abortion Virus, Equine Papillomatosis Virus, Equine Influenza Virus (Type A), Equine Influenza Virus (The Cough), Feline Calicivirus, Feline Herpes Virus, Feline Infectious Peritonitis Virus, Feline Panleukopenia Virus, Feline Parvovirus, Feline Rhinotracheitis Virus, Foot and Mouth Disease Virus, Infectious Bronchitis Virus, Infectious Bursal Disease Virus, Infectious Canine Hepatitis Virus, Infectious Pancreatic Necrosis Virus, Infectious Salmon Anaemia Virus, Infective Bovine Rhinotracheitis Virus, *Leptospira Canicola* Virus, Maedi-Visna Virus, Newcastle Disease Virus, PCV2 Virus (PMWS), Porcine Parvovirus, Porcine Reproductive and Respiratory Syndrome Virus (PRRS), Pseudorabies Virus (Aujeszky's Disease), Rotaviral Diarrhea Virus, Snakehead rhabdovirus, SV40 Virus, Swine Influenza Virus, Transmissible Gastroenteritis Virus (TGE), Turkey Herpes Virus, Turkey Rhinotracheitis Virus, Vesicular Stomatitis Virus
- **FUNGI** - *Aspergillus fumigatus*, *Fusarium moniliforme*, *Microsporium canis*, *Trichophyton* spp. (Ringworm), *Trichophyton* spp. (Mud Fever)
- **PLANT PATHOGENS** - *Alternaria solani*, *Botrytis cinerea*, *Collectotrichum coccodes*, *Didymella bryoniae*, *Fusarium oxysporum*, *Fusarium solani*, *Penicillium oxalicum*, *Phomopsis sclerotoides*, *Pyrenochaeta lycopersici*, *Pythium aphanidermatum*, *Rhizoctonia solani*, *Sclerotinia sclerotiorum*, *Thielaviopsis basicola*, *Verticillium dahliae*



## ACTIVATION PROCEDURE OF ROOCHLOR 10 & ACTIVATOR 10

1. Take a clean and strong plastic container with a good cap. Pet bottles are best.
2. Mix ROOCHLOR 10, WATER and then ACTIVATOR 10 in the container with the logic as shown in the tables given below.
3. Cap the container tightly and keep this solution for 20 minutes and then pour it into the water.
4. Do not fill the container with more than 2/3<sup>rd</sup> capacity. Take a bigger container when necessary.

### Water Sanitization :

For 1000 litres of water to be Sanitized	ROOCHLOR 10	WATER	ACTIVATOR 10
@ 2 ppm	20 ml	60 ml	20 ml
@ 3 ppm	30 ml	90 ml	30 ml

Example: For sanitizing 50,000 litres of water @ 2ppm dosage of chlorine dioxide: Take a plastic container of minimum 8 litres capacity. Add 1 litre of Roochlor 10 + 3 litres of water + 1 litre of Activator 10 in the container and cap it. Wait for 20 minutes and then pour this 5 litre mix in 50,000 litres of water.

### For Fumigation / Spray @ 30 ppm :

For Quantity Of Water	ROOCHLOR 10	WATER	ACTIVATOR 10
10 Ltr.	3 ml	9 ml	3 ml
20 Ltr.	6 ml	18 ml	6 ml

### For Flushing of Pipelines and Cleaning of Storage Tanks @ 100 ppm :

For Quantity Of Water	ROOCHLOR 10	WATER	ACTIVATOR 10	Keep for 3 to 6 hours and there after drain the water.
1000 Ltr.	1 Ltr	3 Ltr	1 Ltr	

**\*\*\* In any case of pandemic airborne diseases, ClO<sub>2</sub> concentrations upto 30 ppm can be sprayed.**

### Very Important Precautions for Storage and Use:

1. DO not expose Roochlor 10, Activator 10 and even the prepared solution to direct sun light and heat. Store in cool and dark place only.
2. Store Roochlor 10 and Activator 10 away from each other and away from other reducing chemicals.
3. In case of spillage or leakage, immediately wash the spilled solution with plenty of water.
4. Use different measuring flasks for Roochlor 10 and Activator 10. This is a must as in case of using a common measure, pouring back of the excess material while measuring, can cause immediate activation of the product that is not required for use.
5. The shelf life of the activated solution is 3 hours.
6. Do not deviate from the given activation procedure.
7. Do not use at the time of live vaccination, when vaccination is given through water.
8. Avoid inhalation, Skin and Eye contact when activated.



Marketed By :

**ROOTS BIOTECH PRIVATE LIMITED**

B-001, Reya Apartment, Sinhagad Road, Pune - 411030

E mail: rootsbio@yahoo.com www.rootsbiotech.com Tel.: +91-20-24253399

CIN: U24232PN2005PTC021746