

TyrosAN[®] 20

TOTAL HYGIENE CONTROL



Creating Safer and
Healthier Environments

2021

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INTRODUCTION



THE SCIENCE BEHIND TYROSAN20 HITS THE HYPOCHLOROUS ACID “SWEET SPOT”

Since the Covid 19 pandemic hit in early 2020 there have been a multitude of HOCL products placed on the market. All purport to be pure Hypochlorous Acid and the associated marketing literature make claims that the product can kill up to 99.9999% of pathogens whilst remaining suitable for skin and hands, surfaces, and in some cases, babies' bottles, and dummies. Whilst Hypochlorous Acid is an incredible disinfectant, not all products are manufactured to the same standards.

The application of HOCL (Activated H₂O) as a disinfectant replicates the natural power and chemistry of infection fighting human white blood cells safely and effectively in your environment. The chemical makeup of the solution disinfects, sanitises, and deodorises as it is applied on surfaces. Most surfaces are at high risk of harbouring infectious agents (including COVID 19). Typical cleaning products clean and remove dirt. They do not kill pathogens which include highly transmittable viruses. Sanitizers and disinfectants kill germs. Hypochlorous acid (HOCL) is the perfect weapon to fight germs & pathogens.

Corona viruses, as with Hepatitis, Influenza, Herpes, Newcastle Disease and Orthopox, are enveloped viruses. Enveloped viruses are viruses that possess an envelope or outer coating that is composed of a lipid layer (fat-like substance that is water insoluble). The envelope is needed to aid in attachment of the virus to the host cell. Loss of the envelope results in loss of infectivity. The mode of transmission for enveloped viruses is characterised by the specific virus; however, the most common routes are via indirect or direct contact of infectious virus particles, contact with or inhalation of respiratory droplets. Some enveloped viruses may also be transmitted by airborne transmission. Enveloped viruses are easily inactivated by routine surface cleaning and disinfection. HOCL is being used as a powerful yet safer disinfectant and has been shown to be efficacious against a wide range of microorganisms in solution and when sprayed in the air. Regular spraying of surfaces with HOCL kills the harmful invaders, prevents cross contamination, and negates the harmful side effects of a build-up of regular bleaching agents such as quaternary ammonium.

TyroSan20 has been formulated using single cell electrolysis technology to meet the demands of environmental cleaning in the most challenging healthcare environments. Every winter, millions of the world population fall victim to colds, flu, diarrhoea, and vomiting caused by viruses. They cause hospital wards to close and prey not only on the fit but also the most vulnerable section of society i.e., the elderly and the young. Our surface disinfectant has been specifically formulated for use in Care Homes, Hospitals, Hospitality, Leisure, Catering and Educational environments. Unlike other cleaners which need to be left in place for several minutes to be effective, which rarely happens when staff are under pressure, this HOCL product requires only a few seconds contact time to kill bacteria, pathogens and eliminate odours. It works faster and more effectively than other cleaning and disinfecting agents yet is safer for humans and the environment. It can be misted into the environment when people are in place with no deleterious effects. It can be sprayed onto a surface and left with no fear of toxic residues. Workers do not need any PPE to handle it. It can be used on soft and hard surfaces. It is extremely versatile and can be used as a dip, spray, mist, or fog. It does not lose efficacy at low temperatures.

HOCL is fast and effective against all known pathogens and kills 99.9999% of harmful germs, viruses and spores including Influenzas, E-coli, C-difficile, MRSA and Norovirus. When used correctly HOCL has the power to destroy, prevent and control infections wherever risks occur; in Hospitals, in Care Homes, Schools and in the domestic environment.

TyrosAN²⁰[®]

TOTAL HYGIENE CONTROL



KEY BENEFITS

- Kills Bacteria [99.9999%], Viruses [99.99%] and Spores [99.9%]
- Compliant – European Biocidal Products Regulations (BPR Product Types 1, 2, 3, 4 & 5) and BS EN 1276, BS EN 13697, BS EN 13704, BS EN 14476 and BS EN 1656.
- Quat & Alcohol Free
- Suitable for use on Hard Surfaces & Soft Furnishings
- PH Neutral & Non-sensitising to skin, eyes and respiratory tract
- Suitable for use around children, pets and food
- Multi-functional – Disinfectant, Sterilant, Sanitiser & Cleaner
- 1 Year Shelf-Life Opened or Unopened
- No Harsh Chemicals (Made from Everyday Ingredients – Food grade Salt, Water & Electricity)
- Active Ingredient (HOCL) produced by Human white blood cells within our bodies
- Deodorises Naturally without additives, scents or perfumes



AIR AMBULANCE
NORTHERN IRELAND

Refillable and Containers are widely recyclable – thereby saving money and reducing plastic waste

Air Ambulance are delighted to have TyrosAN20 as the key ingredient of our infection control protocol. We are highly impressed with the efficacy, safety features and ecological credentials of this remarkable product.

Ian Crowe

Vice Chair and Trustee Air Ambulance Northern Ireland

REAL WORLD HEALTHCARE APPLICATIONS

The unique chemistry of TyroSan20 has been formulated as a result of rigorous tests, trials and evaluations by world leading scientists and is fully compliant with EU and UK biocidal products regulations. Not all products have the individual EU registration that the law demands. From tests carried out by our team, it transpires that many other Hypochlorous Acid products are actually contaminated with bleach, that decays rapidly, or they are very weak solutions that are ineffective. More worryingly, others are produced at super high concentrations that aren't safe to use around people and can be highly corrosive on many surfaces.

Trusted by the NHS, BUPA and over 4,000 dentists in the UK as part of their infection control programmes

Works in seconds with no prolonged contact time which is crucial when staff are under pressure

Science behind TyroSan 20 has recently been CE authorised as a medical device to disinfect dental lines

Recent NHS trials have shown that TyroSan20 can disinfect an operating theatre or ward in 5 - 10 minutes vs 3hrs for Hydrogen Peroxide thereby increasing usage of the environment to help reduce operation and bed waiting lists

BUPA trial published in Journal of Hospital Infection (186,000 lost bed days per annum across a 26,000-bed estate dropped to 653 after adopting the product)



Broad spectrum efficacy - Bactericidal, Viricidal, Fungicidal and Sporicidal

BKills bacteria (99.9999%), Viruses (99.99%) & Spores (99.9%)

Deodorises naturally including bodily waste odours - a comforting mild sea air smell

“Our practice uses TyroSan20 to regularly disinfect and sanitise surfaces and equipment to provide confidence to staff and patients that they are entering a clinically safe environment”
Dr. Peter Murphy GP

“TyroSan20 (sic)... is a mandatory requirement in our housekeeping manual and associated policies for the control of infections. It's proven to effectively prevent and control infections, is safe and saves staff valuable time.”
Tim Brooke, BUPA UK

You can have full confidence that TyroSan20 has been manufactured in the optimum range “Goldilocks Zone” for purity, efficacy, safety, and stability. The research, development and manufacture of our product has been evaluated against the strictest Public Health standards and is an approved Safer Space product.

The TyroSan20 difference can be summarised as follows:

150-200ppm – Strong enough to kill E. coli, Salmonella, C. difficile, Coronaviruses and Norovirus yet as gentle as water on human skin
7.2pH – similar to pH of human blood where our white blood cells produce Hypochlorous Acid to fight infections within our body
(milk is more acidic)

12-month shelf life – expiry date that does not reduce after opening

Labelling & Packaging – Correct guidance and instructions in Black containers to offer best protection against UV light

1. Nature’s own infection fighter - Our own human white blood cells produce Hypochlorous acid to fight infections and pathogens within our body
2. Manufactured at 150ppm and is PH Neutral (7.2) – highly efficacious yet kind to even the most sensitive of skin (babies and the elderly/vulnerable)
3. Made from the electrolysis of food grade salt and water - is biodegradable and leaves no toxic residues
4. Only pure HOCL product in the world with at least 12-month shelf life
5. 80 - 120 times more powerful than bleach yet is non-corrosive and non-toxic if accidentally ingested



“If optimum biosecurity is a requirement in your clinical facility, then TyroSan20 is the answer - It comprises many of the desired effects of the ideal disinfectant: It is easy to use, is inexpensive, has a good safety profile, and can be used to disinfect large areas quickly and with a broad range of bactericidal, sporicidal, fungicidal and virucidal effects.”

Dr. Lawrence McGrath PhD, MSc, T.D.
Clinical Chemical Haematology Specialist
Former Senior Research Officer QUB School of Medicine

COMPARISON

HOW TYROSAN20 COMPARES TO OTHER PRODUCTS

Products	TyroSan20	Alcohol	Household Disinfectant	Bleach
Active Ingredients	Hypochlorous Acid	Ethanol	Chloroxylenol	Sodium Hypochlorite
Anti-bacterial, Anti-viral, Sporicidal & Fungicidal	✓	✗	✗	✓
No Harsh Chemicals	✓	✗	✗	✗
No significant label Warnings	✓	✗	✗	✗
Active Ingredient Produced by Human White Blood Cells	✓	✗	✗	✗
Multi functional - Disinfectant, Sterilant, Sanitiser & Cleaner	✓	✗	✗	✗
No risk of Alcohol Poisoning or Intoxication	✓	✗	✓	✓
PH Neutral & Non Sensitising to Skin & Eyes	✓	✗	✗	✗
Suitable for use around children, pets and food	✓	✗	✗	✗
Air Sterilising	✓	✗	✗	✗
Deodorises Naturally	✓	✗	✗	✗
Non-flammable	✓	✗	✗	✗

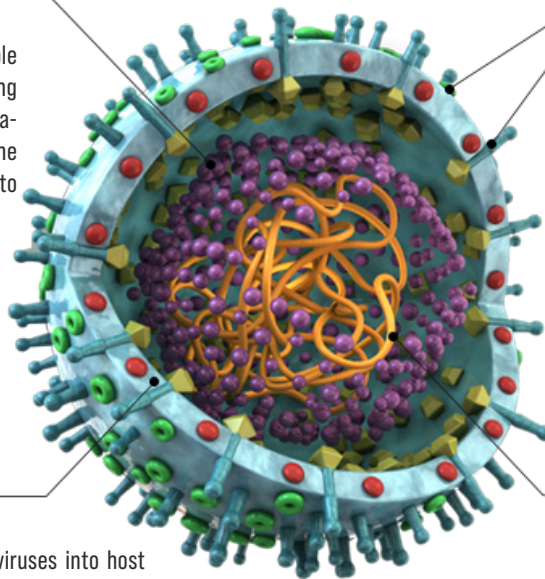
COVID-19 & OTHER INFECTION OUTBREAK CONTROL

Corona virus (COVID-19) is classified as an 'enveloped virus', its physical structure is similar to other 'enveloped viruses' which in this case means that the COVID-19 capsid containing the nucleic acid essential to viral replication is surrounded by a lipid membrane, similar to other enveloped viruses such as influenza. In the hierarchy of microbial resistance to disinfectants and sterilants, enveloped viruses are relatively easy to kill. However, like most viruses and pathogens they are hard to locate and invisible hence our wraparound full coverage Specialist Electrostatic spraying methodology.

The lipid based membrane 'envelope' of all enveloped viruses (including COVID-19) contains lipids and proteins and it is these proteins which bind to receptors on host cells and enable the virus to 'infect' the host cells [i.e. result in a human infection]. Performing the deep clean process, steam cleaning and subsequently spraying an effective and safe product electrostatically provides the best chance of reducing the risk of infection. Our process provides optimum coverage and protection essentially by: disrupting the lipid envelope, changing the shape and structure of the virus binding proteins, and denaturing the proteins of the virus capsid. Our process effectively dismantles the physical structure of enveloped viruses and renders them ineffective and therefore unable to cause infection (Figure 1).

CAPSID

Exposure of the CAPSID to suitable chemical results in the structure being physically pulled apart. The disintegration of the protein capsid prevents the entry of non-enveloped viruses into host cells.



ENVELOPE PROTEINS GLYCOPROTEINS

Are essential for enveloped viruses to gain entry into host cells. Our chemical denatures these proteins rendering them unable to bind with specific host cell receptors. Inability to bind to host cell receptors prevents the virus gaining entry into host cells.

LIPID ENVELOPE

Assist with the entry of enveloped viruses into host cells by fusing with the host cell membrane and depositing the viral capsid into the host cell cytoplasm. The application effectively strips away the lipid envelope thereby inhibiting entry into the host cell.

VIRUS GENETIC MATERIAL

(DNA or RNA) material contains the instructions for making new copies of the virus.

SAFETY

1. QUAT, Paraben, Aldehyde, Perfume and Alcohol free - suitable for hard surfaces and soft furnishings.
2. Can be safely sprayed, misted, dipped, or fogged.
3. No COSHH or REACH implications for handling or transporting
4. Food Safe: - Used as part of the M & S food supply chain - disinfecting fruit and vegetables for human consumption safely and economically



5. Fully compliant with the European BPR - vigorously tested and clinically proven to the following BS EN standards: - 1276 (bacteria), 13697 (bacteria and spores), 13704 (spores), 14476 (viruses), 1275 (fungi and yeast), 14204 (mycobacteria) and ISO 16954 (biofilm)

6. No PPE required to handle

7. Containers are widely recyclable; product can be safely disposed of to STP & Drains

8. No hazard label warnings - unlike traditional disinfectants, TyroSan20 presents no risk to the environment, animal or human health.

9. No toxic residues.

HIERARCHY OF MICROBIAL RESISTANCE TO DISINFECTANTS & STERILANTS

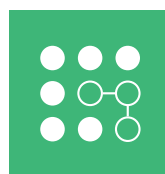
	Micro-organism	TyroSan20 BS EN TEST
Most resistant (Hardest of micro-organisms to kill)	Spores (eg C. difficile)	BS EN 13704:2002 BS EN 13727:2003
	Mycobacteria (eg M. tuberculosis)	BS EN 14204:2012 BS EN 14348:2005
	Non-Enveloped Viruses (eg norovirus, polio)	BS EN 14476:2013
	Fungi (eg Candida albicans)	BS EN 13697:2001 BS EN 1275:1997
	Bacteria (eg MRSA, VRE, Acinetobacter)	BS EN 1040:2005 BS EN 1276:2009 BS EN 13697:2001 BS EN 1656:2009
Most susceptible (Easiest of micro-organisms to kill)	Enveloped Viruses (eg HIV, influenza) (2019-nCoV is an enveloped virus and falls into this group)	BS EN 14476:2013

TOTAL

TyroSAN²⁰
TOTAL HYGIENE CONTROL

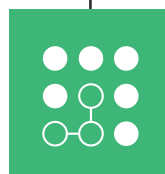
TyroSan20 TOTAL for Domestic Environments

PH Neutral – our own white blood cells produce Hypochlorous within our bodies to fight infection



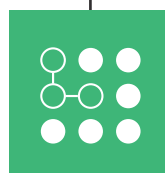
Disinfectant

Destroyed household disinfectant (Dettol) in recent trial – in terms of efficacy and contact time. Sanitise shopping – bag, fruit & veg etc
Sanitise mobile phone, computer keyboards, mouse & tablets etc



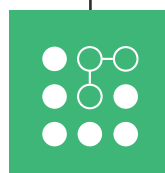
Power

80-120 times more powerful than bleach against germs & bacteria etc. Works immediately – no prolonged contact time required



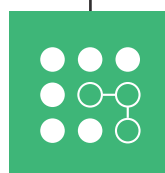
Gentle For Kids & Pets

Suitable for use around pets – harmless if licked or accidentally ingested
Can be used to prevent wound infections in humans and pets and aids recovery



Natural Ingredients

Hypochlorous Acid (HOCl) is the active ingredient in TyroSan20 Total. Made with three simple ingredients, salt, water and electricity. Increases shelf life of flowers in vase (1:10 mix)
Sanitise face masks, Toothbrush – leave overnight in cup



Safe

Biodegradable – returns to salt and water
Non-flammable & no PPE required to handle (NO COSHH)
Green – Refill not Landfill: buy trigger sprays once and refill from 5l jar (save money and plastic)

SECTORS INCLUDE HOSPITALITY & EDUCATION

Multipurpose High Level Surface Disinfectant/Sanitiser/Antiseptic spray trusted by Major Hotel Groups, schools, Bars & Restaurants – can be used on hard surfaces, soft furnishings, food preparation areas and is non-sensitising to skin, eyes, and respiratory tract.



Available in the following sizes:

- 50ml Atomiser Spray
- 150ml Atomiser Spray
- 750ml Trigger Spray
- 5L Refil Jar
- 20L Refil Jar
- 1000L IBC

PH Neutral – our own white blood cells produce Hypochlorous within our bodies to fight infection. Deodorises naturally without added perfumes, essential oils etc – creates a comforting sea air smell that dissipates quickly. Suitable for trainers, kit bags, gum shields/helmets, toilets etc.

Hypoallergenic and dermatologically compatible on the most delicate skin - suitable for use around small children/babies and our more mature citizens' skin Skin infections/issues – athlete's foot, dermatitis, eczema etc

One year shelf life opened or unopened

Kills:

Bacteria – 99.9999% (6 log reduction)

Viruses – 99.99%

Spores – 99.9%

Save money & the environment - REFILL NOT LANDFILL

GALGORM
SPA & GOLF RESORT

TyroSAN²⁰
TOTAL HYGIENE CONTROL

**PREMIUM
FACILITIES
REQUIRE
PREMIUM
PROTECTION**

Galgorm Hotel, Spa & Golf Resort are delighted to have received their first 1000l delivery of TyroSan20. Guests can relax safe in the knowledge that management are doing all in their power to provide a safe and healthy environment for everyone.

dk

dk.serviceglobal.com
028 8262 2022

“We use TyroSan20 on a daily basis across the entire school estate. It is eco-friendly & non-sensitising enabling us to provide a safe environment for all our school community”

Catherine McHugh
Principal St. Patrick's College

SPORTS

TyroSan20 is a versatile disinfectant, steriliser and topical antiseptic spray that should be a key component of every sport facility, gym and sports kit bag. This naturally derived, non-corrosive and eco-friendly product is highly effective in the sports arena with broad spectrum efficacy in terms of environmental, equipment & changing area terminal disinfections in order to prevent/control infection outbreaks and avoid cross-contamination. TyroSan20 is strong enough to kill all the harmful pathogens yet gentle enough to effectively and safely sanitise personal equipment – eg gumshields for immediate use. TyroSan20 Sport kills all known pathogens in the sport environment – bacteria, viruses, fungal infections and yeast (eg athlete's foot) including C.Diff spores, MRSA, Pseudomonas, Staph infections and COVID-19.



PLACE A PROTECTIVE SHIELD AROUND
ATHLETES, CLIENTS & YOUR ENVIRONMENT

ODOUR-ELIMINATOR

Odour-Eliminator at 150 PPM: TyroSan20 Sport is the result of an advanced production technology that produces Hypochlorous Acid (HOCl). HOCl has been used for nearly 200 years and has been shown to be an effective deodorizer and disinfectant, especially with its 150 ppm concentration.

GENTLE

TyroSan20 Sport provides super strong disinfecting and deodorizing abilities, without exposing you and your families to strong odors and harsh chemicals.

CONVENIENT

TyroSan20 Sport comes in ready-to-use bottles or for more wide-area applications.



DISINFECTANT/SANITIZER

It is imperative that proper hygiene protocols are in place especially where there is high human traffic and where there is contact between people on a regular basis eg martial arts and contact sports training.

TyroSan20 Sport can be safely and effectively used for the following purposes:

- Environmental terminal disinfections – suitable for use on all surfaces including soft furnishings
- Training equipment disinfection – machines & weight bars
 - Treatment tables
- Personal equipment – shoes, mouthguards, helmets and gloves etc.
 - Kit Bags – Deodorises & Disinfects

“TyroSan is an essential part of my own kit bag for personal and equipment sanitising. PHitness use TyroSan on a daily basis in the Gym environment to disinfect equipment between users and for total environmental spraydowns at the end of every shift. Infection control is a part of our everyday life here and we are delighted to have this product that ticks all the boxes for us in terms of effectiveness and client health and safety.”

Padraig Hampsey
All Star GAA Captain of Tyrone Senior Team
PHitness Gym Owner

ANIMAL WELFARE

VETERINARY ANTISEPTIC SPRAY

TyroSan is a revolutionary, clinically proven antiseptic spray and disinfectant utilising the natural power of hypochlorous, the super effective biocide produced by all mammalian white blood cells to fight infection inside the body. TyroSan20 should be an essential part of your veterinary toolkit. This advanced Hypochlorous antiseptic can be used safely and effectively on the animal for skin disinfection, cuts & grazes, minor wounds, post surgical sites, insect bites and much more. Furthermore it is the ideal environmental disinfectant and sanitiser for all surfaces including soft furnishings. TyroSan is skin friendly, pH neutral and contains NO alcohol, steroids, preservatives, or essential oils. Can be used safely in and around mouth, ears, nose and on sensitive areas.



ANTIBACTERIAL, ANTIFUNGAL, ANTIVIRAL & SPORICIDAL

TyroSan is highly effective in killing all types of pathogens, on contact, both directly on the animal and for terminal disinfections of housing units. Can also be used to treat animal drinking water safely and effectively. TyroSan is a multi-purpose product that simultaneously improves environmental Biosecurity and animal health. Independently tested and clinically proven to EN Standards including EN1276 (Bactericidal), EN 14476 (Yirucidal), EN 13697 (Fungicidal) and EN 13704 (Sporicidal). Approved for Parts 1- 5 use by ECHA as part of the European Biocidal Products Regulations. Widely used within the University of Edinburgh Veterinary Hospital, The Roslin Institute & The Horsepital Madrid.

KEY BENEFITS

- Safe if licked or ingested
- Safe for use around mouth, nose, eyes, and ears
- Antimicrobial wound & skin care that reduces chances of infection & scarring
- Suitable for use on Hard Surfaces & Soft Furnishings
- Will not cause stinging, irritation, or burning
- Non-Toxic, All-Natural, Steroid-Free
- No harmful legacy issues
- Safe to use on horses, cows, dogs, cats, chickens, and small pets
- Promotes the healing process minimizing the risk of complications
- Environmentally friendly & Biodegradable



HORSEPITAL



THE UNIVERSITY
of EDINBURGH



PETS & VETS

Versatile All-in-One Disinfectant, Antiseptic & Sanitiser

TyroSan20 Pets n Vets - Is an essential part of your veterinary toolkit. This advanced Hypochlorous antiseptic can be safely and effectively used on the animal for skin disinfection, cuts & grazes, minor wounds, post surgical sites, insect bites and much more. Furthermore it is the ideal environmental disinfectant and sanitiser for all surfaces including equipment & soft furnishings. Can be sprayed, dipped, misted or fogged.



SAFE TO USE ON HORSES, COWS, DOGS, CATS, CHICKENS & SMALL PETS.

Can be used for all pet health and hygiene requirements from washing cuts and grazes to keeping drinking water clean.

TyroSan20 eliminates bacteria, viruses, spores, fungi & mould. It contains the active ingredient Hypochlorous Acid which is produced within in the mammalian body immune system to fight infection. TyroSan20 works in seconds with no toxic residue issues.



TyrosAN[®] 20 PETS & VETS

TOTAL HYGIENE CONTROL



Gentle to Animals

Kills 99.9999% of germs. Contains no alcohol, harmful chemicals, antibiotics or preservatives.



AGRI

DKSG IS THE ACTIVE LEADER IN THE SUPPLY AND APPLICATION OF HYPOCHLOROUS ACID, PROVEN TO PROTECT AGAINST INFECTION AND CROSS-CONTAMINATION SAFELY AND EFFECTIVELY.

Utilising ground-breaking technology, DKSG are the only suppliers of stable packaged hypochlorous acid (HOCl) that remains stable once the bottle is opened.

Our biocides have been tested in independent UK laboratories and leading academic and commercial research facilities. We are fully compliant with the rigorous European biocide regulations (EU 528/2012) and own the approved active substance dossiers.



WE ARE LEADING POSITIVE CHANGE IN HEALTH AND HYGIENE WITH PRODUCTS PROVEN TO KILL 99.9999% OF BACTERIA AND VIRUSES, INCLUDING E. COLI AND C. DIFFICILE.



WHAT IS HYPOCHLOROUS ACID?

Hypochlorous acid is one of the most effective known biocides.

This weak acid with the chemical name HClO or HOCl is the same chemical produced by the mammalian immune system to kill invasive organisms and fight infection.

It is commercially produced using water, salt and electricity and is sometimes referred to as “electrochemically activated water”.

Hypochlorous acid an effective, environmentally friendly biocide which represents a monumental step forward in animal welfare and biosecurity.


BENEFITS OF **HYPOCHLOROUS ACID**



**Proven to achieve
kill rates of
99.999% against
viruses & bacteria**



**Works in seconds,
unlike traditional
disinfectants that
take 10 minutes to
act**



TyrosAN²⁰

TOTAL HYGIENE CONTROL

**Completely alcohol
free and non-irri-
tating to skin**



**Effective for hu-
man health, food
production, and the
environment**



TECHNOLOGY

The technology behind our products generates hypochlorous acid via unique designed electro-dialysis process to produce a stable, fast-acting biocide for many different uses.

Stable Once Opened

The science allows for manufacturing the biocide that keeps it stable once the bottle is opened, without compromising its effectiveness. Unlike conventional ECA hypochlorous acid, our packaged products can be produced over a wide pH range, are genuinely stable and have a shelf-life of 12 months once open - compared with less than 48 hours of non-stable hypochlorous acid.

EU Biocides Regulation

We have achieved full compliance with the EU biocides regulation 528/2012.

Widely Used

Widely used within the Edinburgh University Veterinary Hospital & The Roslin Institute.



DKSG TECHNOLOGY

- Combination of electrolysis and ion exchange technology
- Softened water plus salt (NaCl)
- Ability to buffer to any pH (within reason)

- Only stable Hypochlorous Acid product available on the market with a 12-month shelf life
- Can be produced in-situ or packaged



Available as a bottled product for small requirements or produced on-site and on-demand, tyrosan20 - agri technology is able to meet the most demanding requirements of enhanced animal welfare, biosecurity and agriculture.

Ideal Uses:

- Viral, bacterial & fungal issues in both crops and animals
- Crop protection
- Dairy cow sanitation and welfare
- Calf mortality
- Poultry biosecurity and health
- Wound infection control
- Animal drinking water
- Cut flowers



BENEFITS

ONE PRODUCT FOR:

1

DRINKING AND
PROCESS WATER

2

CROP TREATMENT
AND INCREASING
SHELF LIFE

3

BIOSECURITY AND
HYGIENE

4

ALL WOUND
CONTROL

5

SAFER, MORE
ENVIRONMENTALLY
FRIENDLY

6

MORE COST
EFFECTIVE

7

POTENTIAL TO
MOVE TO GROUND
SOURCE WATER

8

POTENTIAL TO
REDUCE USE OF
ANTIBIOTICS

9

AVAILABLE IN
BOTTLE FORMAT

HYPOCHLOROUS – A DAIRY COW CASE STUDY IN THE UK

- Historically calf mortality on this farm has been very high due to a combination of *Cryptosporidium* and E-coli contamination in the water source
- Hypochlorous was used to treat the drinking water to ensure complete pathogen kill
- Hypochlorous was used to clean the calf milk and water buckets and to disinfect the calf housing area.



TYROSAN20 AGRI – DRINKING WATER - 2PPM (13ML PER 1TR)

- Dosed into animal drinking water to control bacteria and bio-film
- Good for field troughs, as it also controls algae
- Can reduce calf mortality
- Main benefit is improved lactating cow health, reducing the need to boost immune systems leading to improved milk yield



PARLOR HYGIENE - NEAT

- Calf Stalls
- Feed buckets and pails
- Disinfect housing area
- Use while animals in-situ



TEATS - NEAT

- Pre and Post wash
- Can help with increased milk production
- Reduced mastitis
- Reduced wounds



FEET2OPPM - MAINTENANCE

- Can be washed manually during Milking
- Integration of the technology into automatic foot sprays
- Digital dermatitis control
- More milk yield



CLUSTERS - NEAT

- Can be used in both manual and auto back flush systems
- No impact on rubbers and liners supporting optimum life
- Effective in controlling cross contamination

WATER QUALITY CAUSED CALF MORTALITY



- Historically calf mortality on this farm had been very high due to a combination of Cryptosporidium and E-coli contamination in the water source
- TyroSan20 AGRI was used to treat the drinking water to ensure complete pathogen kill
- TyroSan20 AGRI was used to clean the calf milk and water buckets and to disinfect the calf housing area

DK SERVICE GLOBAL LTD

01. Proven to achieve kill rates of 99.9999% against viruses and bacteria
02. Completely alcohol free and non-irritating to skin
03. The only supplier of stable Hypochlorous Acid
04. Used as part of the M&S Supply Chain

IN SUMMARY

05. One product for a wide range of applications, solutions and sectors
06. Exclusive partnership with the Owners of the approved active substance dossiers
07. Fully compliant with the rigorous European Biocide Regulations (EU 528/2012)

EQUINE

Equine Antiseptic Spray

TyroSan is a revolutionary, clinically proven antiseptic spray and disinfectant utilising the natural power of hypochlorous, the super effective biocide produced by all mammalian white blood cells to fight infection inside the body. TyroSan is skin friendly, pH neutral and contains NO alcohol, steroids, preservatives, or essential oils. Can be used safely in and around mouth, ears, nose and on sensitive areas.

TyroSAN [®]
TOTAL HYGIENE CONTROL
20
EQUINE

ANTIBACTERIAL, ANTIFUNGAL, ANTIVIRAL & SPORICIDAL

TyroSan is highly effective in killing all types of pathogens, on contact, both directly on the animal and for terminal disinfections of housing units. Can also be used to treat animal drinking water safely and effectively. TyroSan is a multi-purpose product that simultaneously improves environmental Biosecurity and animal health. Independently tested and clinically proven to EN Standards including EN1276 (Bactericidal), EN 14476 (Virucidal), EN 13697 (Fungicidal) and EN 13704 (Sporicidal). Approved for Parts 1 - 5 use by ECHA as part of the European Biocidal Products Regulations.



KEY BENEFITS

- Safe if licked or ingested
- Safe for use around mouth, nose, eyes, & ears
- Antimicrobial wound and skin care that reduces chances of infection and scarring
- Will not cause stinging, irritation, or burning
- Non-Toxic, All-Natural, Steroid-Free
- No harmful legacy issues
- Promotes the healing process minimizing the risk of complications

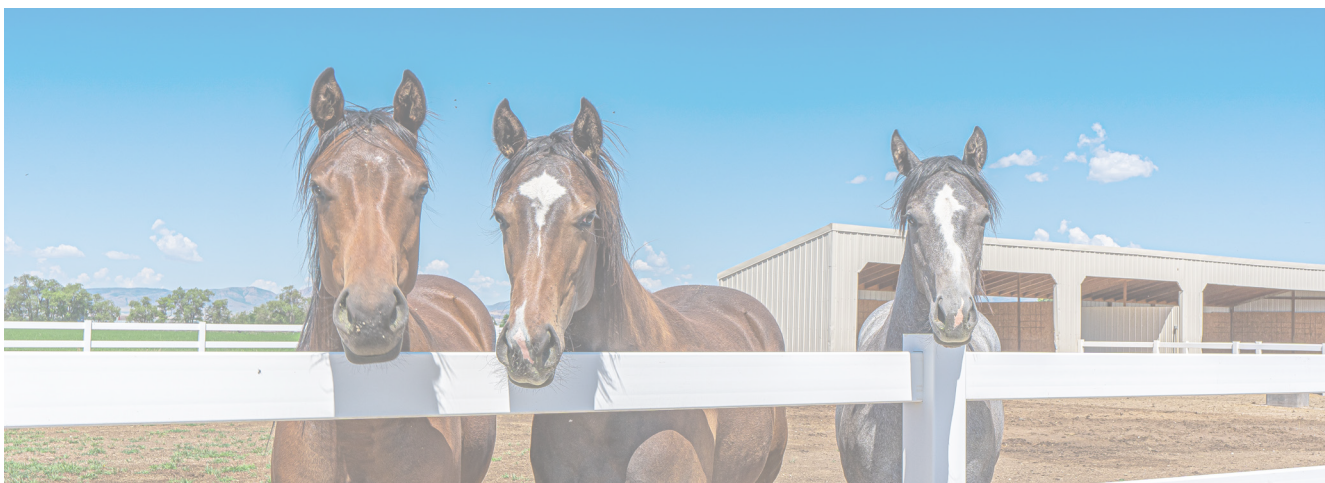
**SAFE TO USE ON HORSES,
COWS, DOGS, CATS,
CHICKENS, & SMALL PETS**



On Farm Uses of TyroSan Include but are not Limited to Below:

Issue	Recommended TyroSan Dosage Instructions	Outcomes/Benefits
Contaminated Drinking Water	13ml per 1Litre (1no IBC of TyroSan treats 76,923 Litres of Water)	<ul style="list-style-type: none"> • Controls Bacteria & Biofilm • Algae control for Field Troughs • Reduces Foal Mortality • Reduce antibiotic use & Immune boosting medicines • Possible use of ground source water
Stable & Housing Hygiene/Disinfection	Use Neat - As supplied in containers	<ul style="list-style-type: none"> • Can be used with animals in-situ with no deleterious effects • Prevents and Controls pathogens, bacteria and infections throughout the environment • More cost effective • No harmful legacy issues - no toxic residues • Safe for use around humans, animals and the environment - can be safely disposed of to STP, manure and soil • Suitable for Stalls, feed buckets, pails & drinking butts • Odour Control
Equipment	Use Neat - As supplied in containers	<ul style="list-style-type: none"> • No impact on rubbers and liners supporting optimum life • Suitable as Equipment Disinfectant • Cross contamination control
Feet Care	<p>Maintenance - 133ml per 1litre of water (20 Litre jar treats 150Litres of Water)</p> <p>Infection Outbreak - Use Neat Pour TyroSan into a suitable plastic container & submerge the hoof for two minutes. Repeat Twice daily. Alternatively spray onto a clean up-turned frog.</p>	<ul style="list-style-type: none"> • Less lameness • Lower mortality rate • Can be sprayed manually • Can be integrated with automatic foot sprays

Issue	Recommended TyroSan Dosage Instructions	Outcomes/Benefits
Sheath Care	Apply with a suitable cloth or sponge	<ul style="list-style-type: none"> • Removes smegma buildup • and risk of infection
Cuts & Wounds	<p>Use Neat - Spray liberally onto area at least twice daily & allow to dry naturally. Try to prevent animal licking the area for one minute after application. Can also be applied to dressing</p> <p>For eye care spray or pour gently into eye or alternatively use cotton balls</p>	<ul style="list-style-type: none"> • Antiseptic and disinfecting properties • Reduce Anti-biotic use • Minimise risk of complications • Cleanse, irrigate, debride and moisturise wounds to aid faster healing
Workers	Use Neat	<ul style="list-style-type: none"> • Safe to use on human skin/hands for disinfection • Helps prevent cross contamination • No need for PPE to handle • Non Irritant to skin, eyes & respiratory tract



HYDRO

TYROSAN20 HYDRO IS 99.9999% EFFECTIVE AGAINST ALL STAGES OF BACTERIAL COLONISATION ON ROOTS, EQUIPMENT, & EVEN WATERLINES.

TyroSan20 Hydro

is a versatile and fast acting root steriliser. Proven to work on the widest spectrum of pathogens, including Pythium. FREE from chemicals like aldehyde, alcohol, bleach and QACs, TyroSan20 Hydro quickly kills bacteria and removes established biofilm in a single treatment.

is a versatile and fast acting root steriliser. Proven to work on the widest spectrum of pathogens, including Pythium. FREE from chemicals like aldehyde, alcohol, bleach and QACs, TyroSan20 Hydro quickly kills bacteria and removes established biofilm in a single treatment.

The active ingredient, Hypochlorous Acid (HOCl) is an effective biocide with incredible bactericidal, fungicidal, virucidal and sporicidal properties.



TyrosAN²⁰ HYDRO[®]

TOTAL HYGIENE CONTROL

- Versatile & Fast acting Root steriliser
- Work on widest spectrum of Pathogens inc. Pythium
- Immediately kills Bacteria & Removes established biofilm in a single treatment



Steriliser Solution / Antimicrobial

- PH Neutral
- Break down biofilm
- Roots Stay Healthy & White
- Inhibits biofilm regeneration
- Eliminates pythium

ECOLOGICAL SOLUTION



REFILL NOT LANDFILL - TYROSAN20 SAVES MONEY & THE ENVIRONMENT

With the recent publication of the IPCC report highlighting 'code red for humanity', the onus is on each individual and company to address climate change and reduce their carbon footprint.

Small changes can make a massive impact and you can play your part simply by making changes to your hygiene and cleaning policies, and refilling bottles instead of contributing to landfill and plastic waste!



Some of the benefits of TyroSan20 :



Ready to use

Reducing risk of operator dilution errors, reducing wastage and spillage ensuring the optimum concentration is used every time.



Safety

Can be disposed of safely to STP, soil, compost and manure ensuring no pollution risk.



Biodegradable

Made from the electrolysis of salt and water.



No hazard warnings

Unlike traditional disinfectants, TyroSan20 presents no risk to the environment, animal or human health.



Recyclable Containers

All bottles are refillable from larger containers. No toxic residues.



Packaging

Packaging is not classified as hazardous and does not need to be treated as hazardous/special waste.



ISO Standards

Manufactured to ISO 14001 & ISO 9001 standards.



No risk of mixing

versatile disinfectant, sterilant and sanitiser with viricidal, fungicidal, sporicidal and bacterial broad spectrum efficacy.

OUR CLIENTS INCLUDE:



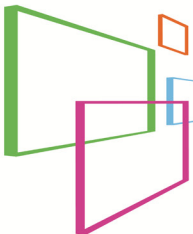
AIR AMBULANCE
NORTHERN IRELAND



THE UNIVERSITY
of EDINBURGH



HORSEPITAL



ROSLIN

TAYTOPARK®



GALGORM
SPA & GOLF RESORT



Waterways Ireland
Uiscebhealaí Éireann Watterweys Airlann



MARKS &
SPENCER

