

In Agrisolutions  
Since 1953



**Strengthening Farm Hygiene and  
Biosecurity Management Program**



**ULTRAXIDE™**  
**PROVEN AND RELIABLE  
DISINFECTANT**



Follow us on social media:



Scan to find out more  
using the QR-Reader



## INTRODUCTION

Pathogenic organisms present a major challenge to livestock health and productivity. It is difficult to vaccinate against all known infectious diseases, not to mention the added problem of identifying the causes of such diseases. Medication and vaccination have traditionally played a major role in preventing & treating diseases but it has now been widely accepted that they cannot, in isolation, prevent losses due to diseases. Modern farming methods demands an all-encompassing holistic approach. Unless the background challenges from disease organisms can be controlled, and good management practices strictly followed, medication and vaccination alone, are not capable of adequately protecting livestock. Livestocks must be given an environment in which disease and infection are controlled to the point where vaccination and medication can achieve beneficial effects. Biosecurity is one of the key elements in this triangle of disease control measures.

Biosecurity refers to a set of strategies and management practices that minimises biological risks. On a farm, attention to biosecurity is one of the most important measures to reduce and prevent the introduction of diseases or pests of animals. Biosecurity practices also minimize the spread of diseases or pests within a farm system. Many aspects of biosecurity are common sense, but if these strategies and practices are not enforced consistently, there is a greater risk of introducing animal diseases that could result in devastating economic costs. Biosecurity practices on livestock farms and ranches include sanitation, animal management, feed management, facility maintenance, manure handling, and disposal of dead animals.

Ultraxide™ high-performance disinfectant formulated with active ingredients of glutaraldehyde and quaternary ammonium compounds suitable for use on all types of farms, livestock buildings, hatcheries, slaughterhouses, processing plants and for disinfecting equipment. It is a potent disinfectant that provides control over pathogenic bacteria, viruses and fungi.

Ultraxide™ offers the advanced solution to overcome disease outbreaks. Independent tests have proven that the product acts as an effective deterrent against major diseases impacting humans and animals, thus making it an effective broad spectrum disinfectant.

## COMPOSITION

Glutaraldehyde 15% and quaternary ammonium compound 10%

### Ultraxide™ Recommended Dilution:

Activity	Dilution Rate
Hatching room, livestock building, wash room, equipments	1:100
Slaughterhouse and processing plants	1:100
Vehicle disinfection	1:100
General Purpose Disinfection	1:100

## BACTERIAL EFFECTIVITY OF ULTRAXIDE™

### Results:

Percent of kill rate:

Test Organism	Escherichia Coli		Staphylococcus aureus		Pseudomonas aeruginosa	
	5	15	5	15	5	15
Ultraxide™ 1% Ref No.: R307	> 99.999	> 99.999	> 99.999	> 99.999	> 99.999	> 99.999
Ultraxide™ 0.5% Ref No.: R308	> 99.999	> 99.999	> 99.999	> 99.999	> 99.999	> 99.999
Ultraxide™ 0.3% Ref No.: R309	99.999	> 99.999	99.999	> 99.999	99.999	> 99.999
Ultraxide™ 0.2% Ref No.: R310	99.999	99.999	99.999	99.999	99.999	> 99.999

Table 1. shows that in different Ultraxide™ dilution rates. It will only need 5-10 minutes contact time to kill 99.99% of *E.coli*, *Staphylococcus aureus* and *Pseudomonas aeruginosa*. UGENE Laboratory Services, PTE.LTD, 2005

### Recommendation

*E.coli*, *Staphylococcus* and *pseudomonas* are organisms that infects poultry and livestock animals when general immunity of the population is compromised. To keep diseases from transforming into a complex infection, Zagro recommends: General purpose dilution of 1:100

## Bactericidal and Fungicidal Activity of Ultraxide™

Bacteria & Fungus	Effective Dilution
<i>Psuedomonas aeruginosa</i>	1:100
<i>Salmonella typhimurium</i>	1:100
<i>Staphylococcus aureus</i>	1:100
<i>Streptococcus faecalis</i>	1:100
<i>Salmonella choleraesuis</i>	1:100
<i>Bacillus cereus</i>	1:100
<i>E.coli</i>	1:100
<i>Listeria monocytogenes</i>	1:200
<i>Candida albicans</i>	1:200
<i>Trichophyton mentagrophytes</i>	1:300
<i>Aspergillus fumigatus</i>	1:400
<i>A.flavus</i>	1:400
<i>Penicillium sp.</i>	1:400
<i>Scopulariopsis sp.</i>	1:400

## Ultraxide™ - Biosecurity Measures to be Taken

It is advisable that farms should adopt a proactive approach in developing their own biosecurity program that focuses on developing a comprehensive set of disinfection protocols, minimizing potential disease outbreaks, ringfence suspected cases, and proceed to an adaptive early intervention stance before actual infections start to spread.

**Stage 1: Undertake Pre-disinfection**

**Stage 2: Final Disinfection Process**

**Stage 3: Return the equipment back to its original placings**

## Ensure Continuity in maintaining a comprehensive biosecurity practice

- For foot dips and wheel dip, ensure that the Ultraxide™ is being diluted at 1:100, followed by changing them completely twice a week.
- Continue to repeat Step 1 whenever a new batch of livestock is introduced.

## GUIDANCE FOR USE

How to use Ultraxide™ for surface disinfection

### Step 1

Remove all animals and litter



### Step 2

Clean the area with an appropriate cleaning product to remove gross soiling



### Step 3

Remove or raise feeder & drinking equipment. Do not use on feeding troughs, drinking equipment or in drinking water



### Step 4

Wear Personal Protective Equipment (PPE)



### Step 5

Prepare a working solution by diluting the product in water to the appropriate concentration and stir until the solution is completely mixed



### Step 6

Use the solution immediately after preparation. If not used immediately, stir the solution prior to use. The solution can be used up to 5 days after preparation.



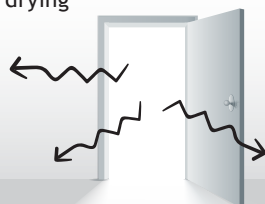
### Step 7

Apply solution to dry floor and walls using a pressure washer at an application rate of 300ml/m<sup>2</sup>



### Step 8

Keep the area well ventilated during application and drying



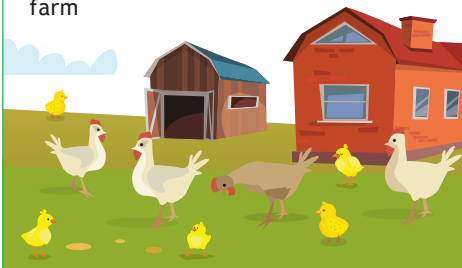
### Step 9

Persons not wearing the recommended PPE should not enter the barn for 24 hours after application



### Step 10

Introducing litter and animals to the farm



### Step 11

To clean spray equipment after use (e.g. pumps and sprayers), an alkaline cleaner followed by a water rinse is recommended



## ULTRAXIDE™ USAGE IN VEHICLE DISINFECTION & FOOT DIP

Vehicles traveling between farms, livestock markets, and processing or rendering plants provide an excellent vector for spreading disease from one site to another. This fact is recognized as a main biosecurity threat. To prevent the spread of diseases at the entrance during the cleaning and disinfecting process of vehicles, the process will also require the vehicles to undergo thorough sanitization procedures to reduce the risk of spreading diseases from one farm to another as well. Humans walking in to protected areas in the farms from unclean areas with contaminated footwear is a main source of germs coming in to the livestock buildings & bio secured areas.

Ultraxide™, potent disinfectant to be used in disinfecting Vehicles & in foot dips to protect livestock from the germs.

- Effective against broad spectrum of pathogens
- Effective at the presence of organic challenge.
- Non-Corrosive
- Non staining
- Long residue activity
- Safe to use

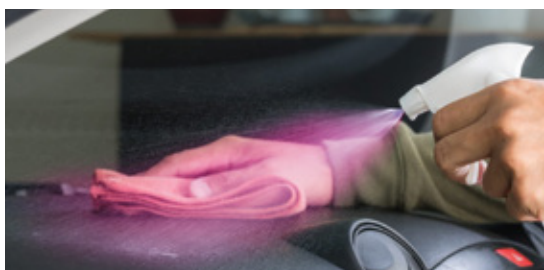
### Cleaning and Disinfection of Vehicles/Equipment

Recommended procedures for cleaning and disinfecting vehicles involve the following principles:



#### Exterior of the Vehicle

- Remove any deposits of mud, straw, or dirt from the wheels, wheel arches, mudguards, and exposed chassis of the vehicle.
- Remove all food, bedding, and dung from the trailer bed with brushes, scrapers, or shovels.
- Clean the exteriors of the vehicle by starting at the top of the vehicle and working down each side, paying special attention to the wheel, wheel arches, and mudguards.
- Wash using power washer after using detergent.
- After washing is complete, a high-pressure rinse should follow to clean all surfaces with clean water and to check to make sure there is no muck or debris. Once dried, spray Ultraxide™ at 1:100 Dilution rate or send the vehicle through the disinfection spraying arch for thorough disinfection of all the exteriors including the undersides.



#### Interior of the Vehicle

- Take out all removable items from the and brush any debris or mud into a bucket or dustpan.
- Wash the floor of the vehicle floor mats, and vehicle pedals with detergent.
- Use a piece of clean cloth soaked in a disinfectant solution such as Ultraxide™ 1:100 to disinfect the cab floor, mats, and foot pedals or spray Ultraxide™ at 1:100 solution.
- All items removed from the vehicle must also be cleaned and disinfected in a similar manner.



#### Wheel Dips

- Treat all vehicles as potentially contaminated, no matter how clean they seem to be when arriving.
- Set up a separate area for pick-up and delivery of livestock.
- Make all vehicles pass through a wheel dip (which must cover enough length to make the entire wheel wet with Ultraxide™ at 1:100 dilution rate.
- The wheel dip solution must be changed weekly or at higher frequency in cases of heavy soiling.
- Wheel dip should be protected from direct sunlight and rainwater.



#### Foot Dip

- First soil & dirt should be well clean by using a brush & with clean water.
- Should make walk through the foot dip which is having Ultraxide™ at 1:100 dilution rate.
- Foot bath should be cleaned and filled with fresh disinfectants one in every 5 days or depending on contamination level.
- Foot bath should be protected for direct sunlight & from rain water.



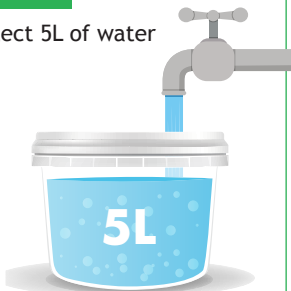
Prepare the Ultraxide™ solution, at a 1:100 dilution rate, directly in the vehicle disinfectant wheel dip bath ensuring that any old solution is suitably disposed. Replace the disinfectant solution bath once soiled.

## HOW TO PREPARE ULTRAXIDE™ FOR BOOT DIP

Prepare a fresh solution directly in the boot dip container, at a rate of 1:100 routine dilution rate, ensuring that any old solution is disposed of before commencing.

### Step 1

Collect 5L of water



### Step 2

Fill suitable container with the water and Ultraxide™



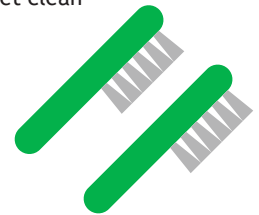
### Step 3

Stir thoroughly until the solution is completely mixed



### Step 4

Provide 2 brushes to dry and wet clean



## HOW TO USE

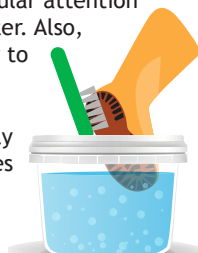
### Step 1

Remove organic matter from boots and soles



### Step 2

Pay particular attention to the water. Also, remember to pay close attention particularly to the soles



### Step 3

Apply Ultraxide™ solution by covering the foot of the boot for 1 minute



### Step 4

Replace Ultraxide™ solution once soiled, or every 5 days if unused



## DISINFECTANTS ARE NOT ALL THE SAME

### Choose Something To Work

There are six classes of chemicals used for disinfection: phenols, chlorine-based compounds, iodine-based compounds, quaternary ammonia substances (QACs) and aldehydes. The ideal disinfectant should be active quickly against a wide range of viruses, bacteria and fungi; safe to handle for the operators; active in the presence of dust or organic matter; have a long period of activity; non-irritant, non-staining, non-toxic and non-corrosive.

Selection of the disinfectant to be used is important as some of the disinfectants are adopted because of the broad-spectrum activity of destroying microorganisms in order to accomplish effective disinfections. The efficacy of disinfectants depends on various factors including concentration, contact duration, temperature, pH, the presence of organic matters and metal ions.

### Ultraxide™ Vs Other Disinfectant Chemicals

(Table A)

Type of Application	Bleach	Iodine	Peracetic Acid	Formaldehyde	QACS	Phenolic Compounds	Peroxy Compounds	Ultraxide™
Wide Antimicrobial Coverage	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Weather Resistant	No	No	No	Yes	Yes	Yes	Yes	Yes
Non-Tainting	Yes	Yes	Yes	No	No	Yes	No	Yes
Non-Corrosive	Yes	Yes	Yes	No	No	Yes	No	Yes
Residual Efficacy	No	Yes	No	Yes	No	Yes	No	Yes
Environmentally Safe	Yes	No	No	No	Yes	No	Yes	Yes
Easily Decomposable	Yes	No	No	No	Yes	No	Yes	Yes
Ease of Use	No	No	No	No	Yes	No	Yes	Yes

(Table B)

Pathogen/Disinfectant	Hypochlorites (Chlorine)	Iodine/Iodophors	Alcohols	Aldehydes	Quaternary Ammonia	Phenol	Proxigen	Ultraxide™
Bacteria Vegetative	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes*
Bacterial Spores	Yes	Variable*	No	Yes	No	No	Yes	Yes*
Mycobacteria	Yes	No	No	Yes	No	No	Yes	Yes*
Non-enveloped Viruses	Yes	No	No	Yes	No	No	Yes	Yes*
Enveloped Viruses	Yes	Variable*	Variable*	Yes	Variable*	Variable*	Yes	Yes*
Fungi	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes*
Protozoa				Yes		Yes	Yes	Yes*

\* Highly Recommended



## CONCLUSION

More importantly, Zagro would hope that farmers should not only merely adapt the 3-stage disinfecting programme using Ultraxide™ as one of the key disinfecting tools, they must also proactively monitor the results. More often than not, proactive monitoring is one of the key elements that has not been actively incorporated into the biosecurity plans and this could turn around and bite. With the lack of or no active monitoring of the results, or supervision, farm workers would naturally be complacent over time, thus compromising the entire disinfecting program.

For farmers who have chosen to use and adopt Ultraxide™ as one of the key disinfecting solutions, Zagro does provide a comprehensive service package that would also include deploying technical specialists to go down to the cattle and ruminant farms to conduct farm surveys and spot any potential areas that farm hygiene practices can further be improved. While farmers might assume that their farms are thoroughly disinfected say every week, the part on active monitoring, and putting into practice needs to be reinforced as well in order to ensure that potential disease outbreaks do not inevitably result in cross infections or worst widespread disease outbreaks in other surrounding farms.

Therefore, farmers need to be aware that the actions that they have put in place as they go about setting up a comprehensive biosecurity plan need to also take into account the impacts on other nearby farms. At Zagro, we highly encourage farmers to not only be adopting the best practices on the implementation of their biosecurity plans, but to also try to encourage active involvement of other farmers from nearby farms who may be facing similar challenges in keeping up with their own respective hygiene practices. Through co-operation and active understanding of each farm's challenges, farmers might also keep tabs on each other, ensuring that everyone is on the right page when it comes to making sure that biosecurity plans are being planned concurrently while also taking into account each farm's unique circumstances.

## Advantages of Ultraxide™

- ✓ Excellent activity against a wide range of micro-organisms.
- ✓ Applicable on most surfaces, and equipment as a complete disinfectant.
- ✓ Environmentally friendly and safe.
- ✓ Lasts longer than any other disinfectants.
- ✓ Most economical solution.
- ✓ Non-corrosive, non-staining, no environmental residue problems.
- ✓ Exceptional low toxicity.
- ✓ Pleasant smell and residual activity up to 1 week.

# SOME ARTICLES, ADVERTISEMENTS IN VARIOUS ANIMAL HUSBANDRY MAGAZINES GLOBALLY

**PRESS RELEASE**

**Zagro : Fight Bird Flu Spread with Ultraxide H5N1 Disinfectant!**

Bird flu is an infection caused by avian (bird) influenza (flu) viruses. Bird flu is very contagious among birds and can make some domesticated birds, including chickens, ducks, and turkeys, very sick and kill them. Unfortunately bird flu infection has been transferred to humans. Symptoms of bird flu in humans have ranged from typical flu-like symptoms (fever, cough, sore throat, muscle aches) to eye infections, pneumonia, acute respiratory distress, and other complications.

Among poultry (domesticated chicken), risk to people who have contact with them is low. However, if they have been contaminated with excretions of avian influenza A (H5N1) among samples of a bird flu outbreak that has spread to humans.

Currently available vaccine to protect humans from bird flu in Asia and Europe. In progress, the best methods to fight to prevent the virus from thriving in the field and biosecurity measures. Control and fight H5N1 from spreading as come up with a potent disinfectant combining both Glutaraldehyde and a disinfectant manufactured and cultural country with bird flu free status. Vaccinate animal disease which has spread to humans.

**The Synergistic effect of glutaraldehyde and QAC.**  
 Glutaraldehyde has the property to bind itself to the proteins through their amine groups.

- It has a very strong virucidal activity obtained by the cross-linking of the proteins of the naked (or hydrophilic) viruses capsid.
- It also combines with the nucleic acids contained in viruses DNA/RNA. Bactericidal and fungicidal activities are due to the combination of glutaraldehyde with the proteinic parts of metabolic enzymes, and with the amino-acids.
- Being strictly hydrophilic, glutaraldehyde cannot cross the cell's lipid membrane or the coating of lipophilic viruses. By itself it cannot cross the lipid barrier, but with a stabilised combination technique with QAC, Ultraxide formula allows glutaraldehyde to kill germs from the inside due to synergistic blend with highly tensio-active Quaternary Ammonium Chloride (QAC).
- Quaternary Ammonium Chloride agents.
- QAC's are cationic tensio-active agents. At low concentration they have cidal properties on a wide spectrum of micro-organisms (Gram+ & Gram- bacteria, fungi, viruses).
- Their major site of action is the cell membrane, where they create a dissolution of phospholipids (cell membranes) and cause changes in permeability that allow the escape of cell constituents and cause cell disorientation. These changes in permeability allow glutaraldehyde to penetrate inside the microorganisms.

Until such time that the virus can be effectively contained and eradicated by vaccine development for both avians and humans, the observation of strict and viable biosecurity is the only option. For more information, and technical support contact Zagro Asia (Singapore).

Zagro Global Hub, 5 Woodlands Terrace, Singapore 738430  
 Tel +65 6759 1811; Fax +65 6759 1855/66/77  
 E-mail: info@zagro.com, www.zagro.com

Poultry Times of India Vol 11 - November 2005

## Zagro develops H5N1 disinfectant against bird flu



SINGAPORE-based Zagro has come up with a wide-spectrum disinfectant Ultraxide, which the company says prevents the spread of bird flu by combining both glutaraldehyde and Quaternary Ammonium Chloride (QAC) compounds. Glutaraldehyde has the property of binding itself to proteins and possesses very strong virucidal activity. Being strictly hydrophilic, glutaraldehyde cannot cross the cell's lipid membrane or the coating of lipophilic viruses. However, with a stabilised combination technique with QAC, Ultraxide's formula allows glutaraldehyde to kill germs from the inside. This is possible because of a synergistic blend with highly tensio-active QAC, which are cationic tensio-active agents.

While the animal nutrition community is currently developing vaccines for bird flu, the best method to fight its spread and infection would be to implement disinfection and bio-security measures which prevent the virus from thriving, said Zagro. Until such time when the virus can be effectively contained and eradicated by vaccines for both birds and humans, observing strict bio-security is the only option.

Zagro is a manufacturer and distributor of healthcare products for livestock, poultry, aquatic animals and crops.



Jan/Feb 06 FEED Business Asia

## Fight influenza spread with Ultraxide H5N1 disinfectant



Bird flu is an infection caused by avian (bird) influenza (flu) viruses. Bird flu is very contagious among birds and can make some domesticated birds, including chickens, ducks, and turkeys, very sick and kill them. Unfortunately bird flu infection has been transferred to humans. Symptoms of bird flu in humans have ranged from typical flu-like symptoms (fever, cough, sore throat and muscle aches) to eye infections, pneumonia, severe respiratory distress (such as acute respiratory distress), and other severe and life-threatening complications.

Currently available vaccine to protect humans from bird flu in Asia and Europe. In progress, the best methods to fight to prevent the virus from thriving in the field and biosecurity measures. Control and fight H5N1 from spreading as come up with a potent disinfectant combining both Glutaraldehyde and a disinfectant manufactured and cultural country with bird flu free status. Vaccinate animal disease which has spread to humans.

**The Synergistic Effect of Glutaraldehyde and QAC**

- It has a very strong virucidal activity obtained by the cross-linking of the proteins of the naked (or hydrophilic) viruses capsid.
- It also combines with the nucleic acids contained in viruses DNA/RNA. Bactericidal and fungicidal activities are due to the combination of glutaraldehyde with the proteinic parts of metabolic enzymes, and with the amino-acids.
- Being strictly hydrophilic, glutaraldehyde cannot cross the cell's lipid membrane or the coating of lipophilic viruses. By itself it cannot cross the lipid barrier, but with a stabilised combination technique with QAC, Ultraxide formula allows glutaraldehyde to kill germs from the inside due to synergistic blend with highly tensio-active Quaternary Ammonium Chloride (QAC).
- Quaternary Ammonium Chloride (QAC) is cationic tensio-active agents. At low concentration they have cidal properties on a wide spectrum of micro-organisms (Gram+ & Gram- bacteria, fungi, viruses).
- Their major site of action is the cell membrane, where they create a dissolution of phospholipids (cell membranes) and cause changes in permeability that allow the escape of cell constituents and cause cell disorientation. These changes in permeability allow glutaraldehyde to penetrate inside the microorganisms.

Until such time that the virus can be effectively contained and eradicated by vaccine development for both avians and humans, the observation of strict and viable biosecurity is the only option. For more information, and technical support contact Zagro Asia (Singapore).

Zagro Global Hub, 5 Woodlands Terrace, Singapore 738430  
 Tel +65 6759 1811; Fax +65 6759 1855/66/77  
 E-mail: info@zagro.com, www.zagro.com

Arab World Agribusines Vol.21 No. 9

## Zagro promotes Ultraxide H5N1 disinfectant against avian 'flu

Zagro says that it has developed "a potent disinfectant with unmatched spectrum range" against avian influenza by combining both glutaraldehyde and quaternary ammonium chloride (QAC), christened Ultraxide.

According to the company the two ingredients work together more effectively than either one alone.

Glutaraldehyde binds itself to proteins through their amine groups. It has very strong virucidal activity, obtained by cross-linking the proteins of the naked (or hydrophilic)

viruses' capsid. It also combines with nucleic acids in viruses DNA/RNA. Bactericidal and fungicidal properties are due to the combination of glutaraldehyde with the proteinic parts of metabolic enzymes.

Glutaraldehyde by itself cannot cross the cell's lipid membrane nor the coating of lipophilic viruses, but in a stabilised combination with QAC, Zagro says that its Ultraxide formula allows glutaraldehyde to kill organisms from the inside because QAC is a highly tensio-active cationic agent.

At low concentrations, QAC has cidal properties against a wide spectrum of micro-organisms - Gram-positive and Gram-negative bacteria, fungi and viruses.

The major site of action is the cell membrane, where QAC triggers dissolution of phospholipids (cell membranes) and causes changes in permeability that allow the escape of cell constituents and cause cell disorientation. These changes in permeability allow glutaraldehyde to penetrate the microorganisms.

Animal Pharm 2 December 2005

**Poultry International**

Are you making the most of your broiler business?

**Biosecurity Problems?**

Ultraxide disinfectant advertisement for Poultry International magazine.

**Pig International**

Competition meth...

**Biosecurity Problems?**

Ultraxide disinfectant advertisement for Pig International magazine.

**AVN Agro Veterinary News**

International Human Nutrition Conference held in March

**Biosecurity Problems?**

Ultraxide disinfectant advertisement for AVN magazine.

**Poultry World**

FOOD SAFETY FIRST!

**Biosecurity Problems?**

Ultraxide disinfectant advertisement for Poultry World magazine.





**Ultraxide™!!!**  
**A Wide Spectrum of Disinfectants Effective  
Against Virus, Bacteria and Fungi**

- Powerful Broad spectrum multipurpose disinfectant
- Excellent wetting and penetrating properties
- Comprehensive action against high organic challenge and even at low temperature
- Fast acting
- Safe to use
- Pleasant smell

Registered and Distributed in Australia by:  
ZAGRO AUSTRALIA PTY LTD  
7 Koojan Avenue, South Guildford  
Perth Western Australia 6055  
Tel: 1800 144 884  
Email: askzagro@zagro.com  
Website: www.zagro.com.au



Scan to find out more  
using the QR-Reader