LANXESS BIOSECURITY SOLUTIONS

Virkon® H

Broad Spectrum Virucidal, Bactericidal, and Fungicidal Disinfectant for Building Biosecurity & Hygiene

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- Disinfection of surfaces, equipment in buildings, sheds, food storage areas and vehicles
- Independently proven effective against a wide range and broad spectrum of viral, bacterial and fungal disease-causing organisms
- Effective at low temperatures, in hard water and in the presence of organic challenge
- Suitable for use in depopulated greenhouses, food storage areas, and farm buildings

Applications

Surfaces equipment & within water lines, in buildings, such as greenhouses and food storage facilities, can harbour infectious organisms that can affect the health of staff operating within them and be spread to other areas where they may contaminate stored materials, including foods such as fruit, vegetables and animal feed.
Virkon® H is effective against many families of viruses and bacteria of interest to hygiene, including Norovirus, E. coli, Listeria, Campylobacter, Salmonella and MRSA.

Building biosecurity & hygiene – an investment not a gamble

Biosecurity involves the 'good hygiene practices' of terminal and continuous cleaning and disinfection of all building surfaces, movable equipment, footwear, vehicles and tools.

The implementation of biosecurity hygiene best practices will help reduce the risks posed by infectious organisms from being introduced into a given working

environment, help prevent the spread of disease-causing pathogens between personnel and their introduction into the food chain. Thus, providing a safer more biosecure working environment within which to operate.

Virkon® H – an excellent disinfectant solution for building biosecurity & hygiene

- Broad spectrum efficacy
- Application versatility
- Good environmental profile
- Suitable for use in organic farming

Proven chemistry. Proven results.

Virkon® H broad spectrum disinfectant has a powerful formulated composition and extensive portfolio of performance and safety testing data. It combines application flexibility with broad spectrum efficacy, on hard surfaces, equipment and vehicles, in the face of organic challenge and varying temperatures, reflecting the real on site conditions in which it will be applied.

These qualities make Virkon® H the disinfectant of choice for use in depopulated greenhouses, food packing and storage areas and other buildings where hygiene is of concern.

Proven Broad Spectrum Efficacy

Independently proven highly effective against:

- over 100 strains of virus in 22 viral families
- over 400 strains of bacteria (antibiotic resistant strains)
- over 60 strains of fungi and yeast

using a wide variety of contact times, temperatures and organic challenge levels.

Environmental Profile

The oxygen-based chemistry of Virkon® H contains simple inorganic salts, organic acids and a surfactant.

The active ingredient decomposes by a variety of routes within the environment, in soil and in water, breaking down to form the naturally occurring substances including potassium salts and oxygen.

The major organic components are classified as readily biodegradable, according to OECD and EU test methods.

Suitable for organic farming

Virkon® H' formulation has been reviewed and recognised by the UK Government Advisory Committee on Organic Standards (ACOS) and supported by DEFRA, the UK's Department for Environment, Food and Rural Affairs, as suitable for use in organic farming applications for the cleaning and disinfection of buildings.

Building terminal biosecurity programme

Disease prevention in six simple stages

1. Removal of equipment and dry cleaning

The removal of all gross organic matter is essential because debris contains high levels of contamination and is a major source of infection.

- Remove trays, pots, containers and equipment from the area to be disinfected and put to one side for cleaning.
- Using a stiff brush, fork, shovel, etc., remove all gross organic matter and debris from the building.

2. Pre-cleaning surfaces & equipment

Following any dry cleaning process, use a multipurpose heavy-duty cleaner (Biosolve® E for degreasing and Biofoam® for descaling surfaces) to remove soiling from all surfaces and to ensure deposits of organic matter do not remain.

- Depending on the degree and type of soiling prepare either a 1:200 (0.5%) or 1:100 (1%) solution of either Biosolve® E or Biofoam®.
- Apply with a knapsack sprayer or pressure washer. The pressure washer should be set on a low pressure setting 500psi (35 bars) using a 45° angle jet. The application rate should be 500 mls per m^2 of surface area.
- Start at the apex of the roof and work down the walls to the floor, paying particular attention to corners and other areas where dirt accumulates. Caked soiling should be brushed if necessary to aid removal.
- Allow at least 15 minutes for the detergent to penetrate and loosen soiling from all surfaces before rinsing at high pressure with clean water. Where possible, allow surfaces to dry before disinfection.

3. Movable equipment & tools

Equipment removed from buildings can carry heavy pathogenic contamination if not thoroughly cleaned and disinfected. This can lead to carry over of infection from one building to another, or could reintroduce infectious organisms back into the building or contaminate food produce being packed.

Pre-cleaning of moveable equipment & tools

- Using a stiff brush, remove all gross organic matter from equipment, tools and utensils.
- Depending on the degree of soiling, prepare a 1:200 (0.5%) or 1:100 (1%) solution of either Biosolve® E or Biofoam® to wash or dip equipment including trays, pots and containers allowing time for the solution to penetrate and loosen dirt before rinsing with clean water.
- Allow to dry.

Disinfection of moveable equipment & tools*

- Using Virkon® H at a dilution of 1:100 (1%) wash or dip equipment in the disinfectant solution.
- Leave for up to 30 minutes before rinsing with clean water and then allow to dry.
- Store equipment away where it will not be contaminated.

4. Water delivery & irrigation systems disinfection

All water systems can contain some infectious contaminants, especially header tanks where dust and dirt can accumulate.

To combat infectious micro-organisms and break down biofilms and algae that may cause blockages in the water delivery and irrigation system pipes, use Virkon® H at a dilution of 1:100 (1%) when carrying out the terminal biosecurity program. Add the appropriate amount of Virkon® H powder to the header tank, then run the solution through the pipes until it fills the entire water delivery / irrigation system. After 4 hours, drain the entire system and then flush through thoroughly with clean water.

* Do not dip tools for longer than 30 minutes

At the terminal disinfection stage, biofilm build-up within irrigation lines is a known issue of concern, we recommend a longer contact time to address this challenge.

5. Disinfection of pre-cleaned surfaces

The level of infectious micro-organisms present after precleaning could still be high enough to offer a disease challenge to personnel. The use of a broad spectrum disinfectant active against viruses, bacteria, yeasts, moulds is essential to help break the chain of infection.

- For routine disinfection of depopulated greenhouse structures, farm, food packing or storage building surfaces, apply Virkon® H at a dilution of 1:100 (1%) and apply at a rate of 300-400 ml/m^2 of surface area.
- Use a knapsack sprayer or pressure washer at 35 bars (500psi) with a 45° spray head.

6. Cold misting & thermal fogging disinfection

When the depopulated greenhouse or farm building has been thoroughly cleaned and disinfected, all moveable equipment and tools should be returned. To disinfect inaccessible areas that might have been overlooked, the building should either be aerial misted or thermally fogged.

Cold misting

Use Virkon® H at a dilution rate of 1:100 (1%) and spray into the apex of the depopulated building using a very fine mist from a suitably pre-set pressure washer or mechanical misting machine.

Thermal fogging

Use Virkon® H at a dilution rate of 1:25 (4%, dissolved in 90:10 water: Virkon® Fog Enhancer) and apply using a thermal fogging machine (suitable for application of aqueous based solutions).

Fogging with Virkon® H is safer and more effective than traditional methods with aldehydes for personnel, as the building can be entered soon after, once mist has fully dispersed, keeping downtime to a minimum.

Continuous biosecurity for disease introduction, prevention & control

In between applications of the terminal disinfection programme, the possibility of reintroducing infectious disease-causing organisms back into buildings is high.

Therefore, continuous biosecurity procedures must be put in place to help reduce the risk of exposing operatives to disease-causing organisms.

Continuous Biosecurity Disease Prevention Procedures

- All vehicles must be cleaned and disinfected prior to arrival on site with only essential vehicles being allowed to enter. All other cars, staff, service vehicles etc. should be kept outside the site perimeter.
- On entry to the site, all visitors must use boot dips and vehicle wheel disinfection baths filled with Virkon® H at a dilution of 1:100. Replace solution once it has either become soiled or after a period of 4–5 days.

- Where possible, visitors should be provided with “facility-only” boots and overalls and a shower-in policy should be in place, along with hand-washing facilities.
- Provide hand washing/sanitizing facilities at the entrance of each building. Use either an antibacterial hand soap or instant hand sanitiser.
- Keep paths and areas around houses and buildings clear of organic matter and debris, as these are a potential potent source of infection which could be transferred from one building to another on the footwear of personnel.
- Spray these outside areas regularly with Virkon® H at a dilution of 1:100 (1%), at a rate of 300 mls per m^2.
- Rodent control - rats and mice may be responsible for assisting the spread of pathogens responsible for diseases such as salmonella and E.coli. An IPM (Integrated Pest Management) five-step programme provides effective routine control through; Inspection, Identification, Sanitation and Cleaning, Rodent Proofing and then Baiting, using proven effective rodenticide products.

Virkon® H biosecurity applications

Disinfection task	Dilution rate	Application
General Surfaces	1:100 (1%)	Using either a plastic watering can, knapsack sprayer or pressure washer on a low pressure setting, apply Virkon® H disinfectant solution to surfaces at a rate of 300ml per m^2. Leave for a minimum of 30 minutes and then rinse thoroughly with clean water and allow to dry.
Moveable Equipment & tools*	1:100 (1%)	Using either a plastic watering can, knapsack sprayer or pressure washer on a low pressure setting, apply Virkon® H disinfectant solution to all movable equipment and tools. Leave for a minimum of 30 minutes before rinsing with clean water and allowing to dry.
Pruning Knives	1:100 (1%)	Disinfect pruning knives at the end of each row of plants by either dipping in (not soaking), or wiping with a cloth or sponge soaked in Virkon® H disinfectant solution.
Trays, Pots & Containers (plastic)	1:100 (1%)	Submerge pre-cleaned containers in Virkon® H disinfectant solution for a minimum of 1 minute before removing and allowing to dry, prior to re-use.
Disinfectant Boot Dips	1:100 (1%)	Always remove gross soiling from footwear wherever possible before stepping into the Virkon® H disinfectant boot dip. Replenish daily, or when heavily soiled.
Vehicle Disinfection	1:100 (1%)	Using either a pressure washer or knapsack sprayer, starting at the top and working down, soak all internal and external surfaces of the vehicle with Virkon® H disinfectant solution. Pay particular attention to the load carrying parts of the cab. Ensure that the wheels, wheel arches, tyres, mud-guards and underside of the vehicle are all covered.
Water delivery & Irrigation system (Terminal Disinfection)	1:100 (1%)	Fill header tank and water delivery / irrigation pipes with Virkon® H disinfectant solution. Leave for four hours and then flush through with fresh clean water.
Thermal Fogging (Terminal Disinfection)	1:25 (4%)	1:25 (4%) solution of Virkon® H in an 90:10 water Virkon® H: Fog Enhancer mixture. Using a suitable thermal fogging machine, set up for use with aqueous solutions, apply the prepared solution at 10ml per m^3 of air space.

Biosolve® E & Biofoam® cleaning, and Virkon® H disinfectant solutions are not permitted for use in the presence of growing plants or their propagation media.

* Do not dip tools for longer than 30 minutes

LANXESS
Energizing Chemistry

LANXESS BIOSECURITY SOLUTIONS
Shaping the Future of Biosecurity

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Use biocides safely. Always read the label and product information before use.

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