

# Virkon® S

**POWERFUL BROAD SPECTRUM  
MULTIPURPOSE VIRUCIDAL DISINFECTANT**

**Unique patented formulation**  
**Effective against a broad spectrum of disease causing pathogens**  
**Highly versatile – surface, equipment, water and aerial disinfection**

Virkon® S, the premier broad spectrum virucidal veterinary disinfectant, is recognised by industry and governments worldwide as a disinfectant of choice for livestock disease prevention and control.

Virkon® S' patented formulation is unique. No other disinfectant has the same powerful composition. In terms of efficacy Virkon® S has been proven highly effective against 65 strains of virus in over 19 viral families, 400 strains of bacteria and over 100 strains of fungi. This list of proven efficacy includes the major OIE List A diseases of concern; Avian Influenza (H5N1), Newcastle Disease, Classical Swine Fever (Hog Cholera) and Foot and Mouth Disease.

Virkon® S' versatility provides the flexible solution for; surface, water and aerial disinfection, in hard water, on porous surfaces, at low temperatures and in the presence of organic challenge.



*The miracles of science™*

# Virkon® S

Virkon® S combines greater application flexibility and broad spectrum activity with efficacy against viruses, bacteria and fungi at low temperatures, in hard water, on porous surfaces and against organic challenge.

## General Properties

- **UK DEFRA Approved** - Foot and Mouth Disease, Swine Vesicular Disease, Diseases of Poultry and General Orders
- **Powerful** - independently proven effective against viral, bacterial and fungal disease causing organisms including the lethal H5N1 Avian Influenza Virus.
- **Fast-acting** - a one percent solution of Virkon® S is independently proven to kill bacteria with contact times as low as five minutes and the tough to kill parvovirus in ten minutes or less.
- **Versatile** - surface, equipment, vehicle, footdip, water delivery system and aerial disinfection.
- **Independently proven effective** on porous surfaces, in hard water, at low temperatures and in the presence of organic challenge.
- **Readily soluble in tap water**, Virkon® S dissolves into a pink solution.
- **An environmentally acceptable product** with an **exceptional safety profile** towards man and animals when used and disposed of as instructed on the label.
- **Transport and storage** - being a powdered disinfectant formulation Virkon® S can be swiftly transported by air and can be stored for long periods making it the ideal choice for stockpiling in bulk.

## Mode of Action

Virkon® S oxidizes sulphur bonds in proteins and enzymes disrupting the function of the cell membrane causing rupturing of the cell wall.

There is no evidence to suggest that bacterial disease causing organisms develop resistance towards Virkon® S as opposed to other disinfectant types.

## Composition

Virkon® S is meticulously controlled during the manufacture process to be a balanced, stabilized blend of peroxygen compounds, surfactant, organic acids and an inorganic buffer system.

## Safety, Health and Environmental Issues

### Environmental Profile

Virkon® S is an oxygen based disinfectant chemistry containing simple organic salts and organic acids. The active ingredient in Virkon® S, decomposes by a variety of routes within the environment, in soil and water, breaking down to form the harmless substances, potassium salts and oxygen.

Three-quarters of the ingredients of Virkon® S are inorganic, which decompose in the physical environment to naturally occurring simple inorganic salts. The remaining, organic components, are classified as readily biodegradable according to standard OECD and EU tests.

Virkon® S is not classified as R53, persistent in the environment, according to the standard European process for the classification and labelling of chemical preparations.

Independent studies have shown that diluted Virkon® S should not, when used as directed, pose any threat to sewage treatment facilities.

### User Safety

The results of independent studies carried out in accordance with OECD and EU guidelines indicated that Virkon® S powder concentrate does not display effects of acute toxicity by exposure to skin or by ingestion. As a result Virkon® S is not classified as harmful or toxic according to the standard European process for the classification and labelling of chemical preparations.

When tested in accordance with OECD and EU test guidelines a 1%, in-use dilution, of Virkon® S does not cause irritation to eyes or skin.

Virkon® S, powder and in-use dilution (1%) does not cause effects of sensitisation when tested to OECD and EU guidelines.



## Applications

Virkon® S has a unique formulation, broad spectrum of activity and exceptional safety profile towards man and animals, when used as directed, making it the disinfectant choice for; general surface, equipment, vehicle, footdip, water delivery system and aerial disinfection.

### Surface Disinfection

The level of disease causing organisms present after basic cleaning can remain high enough to offer a serious disease challenge to livestock. Using a disinfectant proven to be effective against viruses, bacteria, fungi and moulds, such as Virkon® S, is essential.

Surface Disinfection	Dilution Rate	Application
Routine disinfection for all surfaces, earth, wood and concrete	1:100 (10 grams of Virkon® S to every 1 litre of water)	Using a pressure washer or other mechanical sprayer, apply Virkon® S solution at an application rate of 300ml/m <sup>2</sup>

### Surface Application Usage Chart

To estimate the total surface area to be disinfected, including walls and ceilings, multiply the total floor area by 2.5.

Surface area to be disinfected	Total volume of Virkon® S solution	1:100	1:200	1:280 UK DEFRA Diseases of Poultry Orders	1:120 UK DEFRA General Orders
50m <sup>2</sup>	15 litres	150g	75g	54g	125g
100m <sup>2</sup>	30 litres	300g	150g	107g	250g
500m <sup>2</sup>	150 litres	1.5kg	750g	536g	1.25kg
1000m <sup>2</sup>	300 litres	3kg	1.5kg	1.071kg	2.5kg
2500m <sup>2</sup>	750 litres	7.5kg	3.75kg	2.68kg	6.25kg

### Equipment Disinfection

Equipment Disinfection	Dilution Rate	Application
Routine cleaning and disinfection of movable equipment	1:100 (10 grams of Virkon® S to every 1 litre of water)	Spray all equipment with Virkon® S solution at an application rate of 300ml/m <sup>2</sup>

### Disinfectant Footdips and Wheeldips

Disinfection Foot & Wheeldips	Dilution Rate	Application
Disinfection Foot & Wheeldips	1:100 (10 grams of Virkon® S to every 1 litre of water)	Replace solution once it has either become soiled or after a period of 4-5 days. The dilution of the disinfectant solution can be checked for potency at the time of preparation using a Virkon® S dilution test kit.





### Water System Disinfection

All water systems can potentially contain some viral and bacterial contamination, especially header tanks where dust and debris can accumulate. Disinfection will clean the system and eliminate viruses, bacteria and fungal growth.

Water System Disinfection	Dilution Rate	Application
Terminal Disinfection	1:200 – 1:100 (0.5% – 1%)	Isolate header tank at the mains and drain off to drinker points farthest from tank. Clean out any gross soiling and debris. Refill with water and add the appropriate volume of Virkon® S powder, thoroughly stir and leave for 10 minutes. Flush system through to all drain-off points and leave for a further 50 minutes before draining system and refilling with clean water.
Continuous Disinfection	1:1000 (0.1%)	Dose header tank as required or apply through water system dosing equipment.

### Virkon® S - Water System Disinfection Usage Chart

Litres of water to be disinfected	Terminal Cleanout		Continuous Water Disinfection
	1:200	1:100	1:1000
100 litres	500g	1kg	100g
250 litres	1.25kg	2.5kg	250g
500 litres	2.5kg	5kg	500g
1000 litres	5kg	10kg	1kg

### Aerial Disinfection

To control organisms that can be introduced into a livestock house or farm building during the setting up procedure, and to disinfect the air and other inaccessible areas of the building, use either a fine mist sprayer or thermal fogging machine to apply Virkon® S disinfectant solution evenly.

Aerial Disinfection	Dilution Rate	Application
Misting/Aerial Spray	1:200 (0.5%)	Using either a pressure washer or knapsack sprayer on its finest mist setting and apply at 1 litre of Virkon® S solution per 10m <sup>2</sup> of floor space.
Cold Fogging	1:100 (1%)	Use a mechanical mister to apply the Virkon® S solution at a rate of 1 litre per 10m <sup>2</sup> of floor space
Thermal Fogging	1:25 (4%) solution of Virkon® S in an 85:15 water Virkon® S Fog Enhancer mixture.	Using a thermal fogging machine apply the prepared solution at 1 litre per 40m <sup>2</sup> of floor space

### Aerial Disinfection Application Usage Chart

Floor space of building	Misting / Aerial Spray	Cold Fogging	Thermal Fogging
	1:200	1:100	1:25
50m <sup>2</sup>	25g	50g	50g
100m <sup>2</sup>	50g	100g	100g
500m <sup>2</sup>	250g	500g	500g
1000m <sup>2</sup>	500g	1kg	1kg

### Aerial Disinfection in the Presence of Livestock

Spraying a fine disinfectant mist or fog in premises, even in the presence of livestock can help reduce cross infection and secondary infection during outbreaks of respiratory and other diseases. Using a mechanical or plumbed in misting system,

# Virkon® S

## The Premier Broad Spectrum Veterinary Livestock Disinfectant

The tables below summarise independent efficacy data for important livestock pathogens. For a complete list, including horticulture and aquaculture pathogens, please see our website [www.virkons.com](http://www.virkons.com). Dilutions do not necessarily represent the lowest effective concentration of Virkon® S. All test reports available on request.

### Virucidal Activity over 100 independent studies

Virus Family	Poultry Disease/Dilution	Pig Disease/Dilution	Other Disease/Dilution
Adenoviridae	Egg drop syndrome - 1:100		Infectious canine hepatitis - 1:100
Arenaviridae			Lassa fever - 1:200
Asfarviridae		African swine fever - 1:800	
Astroviridae	Poultry enteritis mortality syndrome - 1:67		
Birnaviridae	Infectious bursal disease - 1:250		Infectious pancreatic necrosis - 1:100
Bunyaviridae			Rift valley fever - 1:400
Caliciviridae			Feline calicivirus - 1:100
Circoviridae	Chicken anaemia - 1:250	PMWS/PDNS - 1:100	
Coronaviridae	Infectious bronchitis - 1:100	TGE - 1:100	Feline infectious peritonitis - 1:100
Hepadnaviridae			Hepatitis B-1:100
Herpesviridae	Marek's disease - 1:200	Aujeszky's disease - 1:100	Equine herpes - 1:100
	TRT - 1:200		Infectious bovine rhinotracheitis - 1:600
	ILT - 1:100		Equine influenza - 1:100
Orthomyxoviridae			Bovine papillomatosis - 1:100
Papillomaviridae	Avian influenza - 1:280		Canine parainfluenza - 1:100
Paramyxoviridae			ISA - 1:200
Parvoviridae	Newcastle disease - 1:280		Canine parvoviral enteritis - 1:100
Picornaviridae		FMD - 1:1300 SVD - 1:200	Polio - 1:100
Polyomaviridae			Bovine polyoma - 1:100
Poxviridae	Fowl pox - 1:100		Pseudocowpox - 1:300, Cowpox - 1:100
Reoviridae	Avian reovirus - 1:100		Rotaviral enteritis - 1:100
Retroviridae	Myeloid leucosis - 1:200		Maedi visna - 1:1400
Rhabdoviridae			Rabies - 1:500
Togaviridae		PRRS - 1:700, CSF/Hog Cholera - 1:150	BVD - 1:100 Equine viral arteritis - 1:100

### Bactericidal Activity over 400 independent studies

Agent Tested	Dilution	Agent Tested	Dilution
Actinobacillus pleuropneumoniae	1:200	Ornithobacterium rhinotracheale	1:100
Bacillus cereus	1:100	Pasteurella haemolytica	1:100
Bordetella avium	1:100	Pasteurella multocida	1:150
Bordetella bronchiseptica	1:150	Proteus spp	1:200
Brucella abortus	1:100	Pseudomonas aeruginosa	1:100
Campylobacter coli	1:100	Pseudomonas mallei	1:200
Campylobacter jejuni	1:100	Salmonella arizona	1:100
Campylobacter pyloridis	1:100	Salmonella choleraesuis	1:120
Chlamydia psittaci	1:100	Salmonella enteritidis PT4	1:100
Clostridium perfringens	1:100	Salmonella thomasville	1:200
Dermatophilus congolensis	1:100	Salmonella typhimurium DT104	1:200
Enterobacter cloacae	1:200	Serpulina hyodysenteriae	1:400
Erysipelothrix rhusiopathiae	1:100	Serratia marcescens	1:200
Escherichia coli O157:H7	1:100	Shigella sonnei	1:100
Eubacterium suis	1:200	Staphylococcus aureus	1:100
Haemophilus somnus	1:100	Staphylococcus epidermidis	1:100
Klebsiella pneumoniae	1:200	Staphylococcus intermedius	1:100
Klebsiella oxytoca	1:100	Streptococcus equi	1:100
Lawsonia intracellularis	1:100	Streptococcus faecalis	1:100
Listeria monocytogenes	1:100	Streptococcus suis	1:150
Mycoplasma gallisepticum	1:100	Streptococcus zooepidemicus	1:100
Mycoplasma hyorhinis	1:800	Taylorella (Haemophilus)	1:400
Mycoplasma mycoides	1:200	equigenitalis	

### Fungicidal Activity over 75 independent studies

Agent Tested	Dilution	Agent Tested	Dilution
Aspergillus fumigatus	1:100	Microsporium canis	1:300
Aspergillus niger	1:100	Trichophyton gypseum	1:200
Candida albicans	1:100	Trichophyton mentagrophytes	1:300
Malassezia pachydermatis	1:100	Trichophyton rubrum	1:200

Use disinfectant safely. Always read and follow the product label instructions and information, including the precautionary statements before use.

