



Vehicle Disinfectants

Used at Zoological Society

of San Diego Facilities

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BIO-QUAT 20™

- Odorless Disinfectant - No Rinse Sanitizer
- Bio-Quat 20™ is an odorless disinfectant of high germicidal and bacteriostatic potency. It is recommended for disinfecting general poultry and farm premises, vehicles, coops, crates, utensils and tools. Used for sanitizing egg shells and food contact surfaces.

BENEFITS

- Fast acting Bactericide, Fungicide and Virucide
- Residual bacteriostat and fungistat
- Odorless disinfectant and deodorizer
- Non-staining use solutions
- Safe to use on all wettable surfaces
- Kills citrus canker disease bacterium
- Effective in 400 ppm hard water (Germicidal and Detergent sanitizer Test)
- Effective disinfectant in 5% organic soil load (blood serum)
- EPA Registered/ USDA Authorized

Manufacturer's Website:

<http://www.antecint.co.uk/main/biosentry-products24.htm>

Bio-Quat 20™ is supplied in liquid form and is diluted before use. This disinfectant will primarily be used in automatic spraying systems.

BIO-QUAT 20™

USE RATE

Surface Disinfection	1 ounce per 2 gallons of water
Shell Egg Sanitizing	1 ounce per 8 gallons of water
Food Surface Sanitizing	1 ounce per 8 gallons of water

PROPERTIES

Physical Form	Liquid
Color	Light yellow to amber
Odor	Slightly musty
pH	10-11
Specific Gravity	1.00
Viscosity	25 cps

Packaging	Shipping Weight	Product Code
4 x 1 Gallons/ Case	37 lbs	40520
55 Gallon Drum	504 lbs	40523



The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont
Material Safety Data Sheet

Page 1

BioQuat 20
BIO30 Revised 19-OCT-2005

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Tradenames and Synonyms

Quaternary Disinfectant

Company Identification

MANUFACTURER/DISTRIBUTOR

BioSentry
1481 Rock Mountain Boulevard
Stone Mountains, GA 30083
USA

PHONE NUMBERS

Product Information : (770) 723-9211
Medical Emergency : (800) 535-5053

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
N-Alkyl(C12-16)-N,N-dimethyl-N-benzylammonium Chloride	68424-85-1	
Sodium Carbonate	497-19-8	
Ethyl Alcohol	64-17-5	

HAZARDS IDENTIFICATION

Potential Health Effects

Inhalation may cause irritation of the nose, throat and lungs with sneezing, cough, sore throat or runny nose, difficult breathing, or shortness of breath. Repeated or excessive overexposure may cause central nervous system depression with dizziness, confusion, incoordination, drowsiness or unconsciousness and non-specific effects such as headache, nausea and weakness.

Moderately toxic by ingestion. Repeated/prolonged exposure may cause damage to throat and esophagus. May cause central nervous system depression with dizziness, headache, confusion, incoordination, drowsiness or unconsciousness; irritation of the digestive tract with stomach pain, heartburn, nausea, vomiting or diarrhea.

Eye contact causes severe irritation with tearing, pain or

(HAZARDS IDENTIFICATION - Continued)

blurred vision. Prolonged or repeated contact is corrosive to eyes; corneal damage possible.

Skin contact may cause irritation and/or defatting of the skin with itching, redness or rash. Prolonged or repeated contact may be corrosive to skin.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

INHALATION: Not likely to occur. Inhalation of spray mist will cause irritation.

INGESTION: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

EYE CONTACT: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.

SKIN CONTACT: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes.

Notes to Physicians

Probable mucosal damage may contraindicate the use of gastric lavage.

FIRE FIGHTING MEASURES

Flammable Properties

Not a fire or explosion hazard.

Extinguishing Media

Use media appropriate for surrounding material.

Fire Fighting Instructions

Evacuate personnel to a safe area. Wear self-contained breathing apparatus (SCBA) and full protective equipment.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Initial Containment

Small spills may be flushed to sewer with large amounts of water. Absorb large spills onto inert material and place in plastic or plastic-lined containers for proper disposal.

Spill Clean Up

Soak up with sawdust, sand, oil dry or other absorbent material. Shovel or sweep up.

HANDLING AND STORAGE

Handling (Personnel)

Avoid inhalation. Do not get in eyes, on skin or clothing. Wash thoroughly after handling. Wash clothing after use.

Handling (Physical Aspects)

Do not contaminate water, food or feed by storage or disposal. Keep container closed when not in use. Keep out of reach of children.

Storage

Store in original container. Do not store on side. Avoid creasing or impacting of side walls.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use only with adequate ventilation.

Personal Protective Equipment

EYE/FACE PROTECTION

Wear safety glasses. Where splash potential exists, wear chemical splash goggles.

RESPIRATORS

Wear NIOSH approved respiratory protection, as appropriate.

(EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

PROTECTIVE CLOTHING

Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants and jacket.

Exposure Guidelines

Applicable Exposure Limits

Sodium Carbonate

PEL (OSHA) : None Established
TLV (ACGIH) : None Established
AEL * (DuPont) : 5 mg/m³, 8 Hr. TWA

Ethyl Alcohol

PEL (OSHA) : 1,000 ppm, 1,900 mg/m³, 8 Hr. TWA
TLV (ACGIH) : 1,000 ppm, 1,880 mg/m³, 8 Hr. TWA, A4
AEL * (DuPont) : 1000 ppm, 8 & 12 Hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

% Volatiles : >69 %
Evaporation Rate : 1 (Water=1.0)
Solubility in Water : 100 %
pH : 11-11.5
Odor : Musty.
Form : Liquid.
Color : (light), Straw, Clear, White.
Specific Gravity : 1
Density : 8.33 lb/gal

STABILITY AND REACTIVITY

Chemical Stability

Stable.

Incompatibility with Other Materials

Incompatible with anionics.

Decomposition

Decomposition will not occur.

(STABILITY AND REACTIVITY - Continued)

Polymerization

Polymerization will not occur.

 DISPOSAL CONSIDERATIONS

Waste Disposal

Incinerate material in accordance with Federal, State/Provincial and Local requirements. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

RCRA Number: D002

 REGULATORY INFORMATION

U.S. Federal Regulations

Discarded material is a RCRA Hazardous Waste.

 OTHER INFORMATION

NFPA, NPCA-HMIS

NPCA-HMIS Rating
 Health : 2
 Flammability : 0
 Reactivity : 0

Personal Protection rating to be supplied by user depending on use conditions.

Additional Information

EPA Reg. No.: 65020-9

 The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsible for MSDS : MSDS Coordinator
 > : DuPont Chemical Solutions Enterprise
 Address : Wilmington, DE 19898
 Telephone : (800) 441-7515

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS

Virkon /S

This chemical disinfectant Virkon S is diluted from its powder form and mixed so that it can be easily sprayed on vehicles for disinfection purposes. This disinfectant is primarily used in hand or manual sprayers; as well as foot dips. The attached MSDS sheets are for the product in its undiluted powder form. When used for spaying, the product has been diluted significantly with water. The materials in this information packet are to provide additional information and to assure you of its safe use in the disinfection process for motor vehicles. Please consult the manufacturer's website noted in this document if you wish additional information beyond the scope of this document.

Manufacturer's Website:

<http://www.antecint.co.uk/MAIN/virkons.htm>



THE ULTIMATE BROAD SPECTRUM VIRUCIDAL DISINFECTANT

- **Powerful - independently proven effective against all virus families affecting man and animals**
- **Friendly - to man, animals and the environment**
- **Complete control - aerial, surface and water system disinfectant**

GENERAL PROPERTIES

- Unique product - patented in over 20 countries and used worldwide.

Powerful

- The most proven livestock disinfectant in the world.
- Fast acting- 1% solution independently proven to kill bacteria and fungi in less than 5 minutes and parvovirus in less than 10 minutes.
- Independently proven effective on porous surfaces such as wood, against organic challenge, in hard water and at low temperature.
- High levels of surfactancy with acidic and oxidising power provide superior destruction of biofilms.
- UK MAFF approved at exceptionally high dilutions:-
Foot & Mouth Disease 1:1300 and General Orders 1:120
Swine Vesicular Disease 1:200, Diseases of Poultry Order 1:280.

Friendly and Convenient

- Friendly to man, animals and the environment.
- Non-tainting, [no environmental residue problems](#), of exceptionally low toxicity.
- A powder for easy storage and transportation and accurate dilution - readily soluble in tepid water.

Versatile

- Complete control - aerial, surface and water system disinfectant.
- Can be applied to surfaces and equipment to clean and disinfect in a one step operation - passes AOAC detergent sanitizer test at 1:200 dilution.
- Suitable for use in all types of poultry and animal housing, fish farms, greenhouses and veterinary surgeries.

CHEMICAL AND PHYSICAL PROPERTIES

- **COMPOSITION:** A balanced, stabilised blend of peroxygen compounds, surfactant, organic acids, and an inorganic buffer system.
- **APPEARANCE:** Pink/grey powder (yellow/orange in US). **ODOUR:** Faint lemon odour.
- **ACTIVITY:** Strong oxidising system.
- **STABILITY:** Powder: 2.3% average loss of initial activity after 36 months at 20°C. 1% solution: 10% loss of initial activity after 7 days in 350ppm hard water.

- **SOLUBILITY:** Readily soluble in tepid water giving a clear pink solution (yellow in US).
- **CORROSIVITY:** No corrosive effects on mild or stainless steel when used as directed.
- **HYDROGEN ION CONCENTRATION:** 1% solution - pH2.6.

ENVIRONMENTAL IMPACT

- **Ecotoxicity:** "Non toxic" according to EU standards for soil toxicity; lower aquatic toxicity than peracetic acid and will not present a threat to sewage treatment facilities when used as directed. **Water Research Council UK.**
- **Environmental effect:** "In the dilution normally encountered all of the Virkon S ingredients are either decomposed and/or biodegraded and are comparatively harmless. The triple salt of potassium monopersulphate will decompose into harmless by-products. In the aqueous environment the product will eventually degrade and should pose no problem to sewage treatment processes" **Anglian Water, August 1994**
- **Biochemical Oxygen Demand:** In a 5 day Biochemical Oxygen Demand test carried out by Anglian Water a 1% solution of Virkon S (subsequently diluted to a level typically found in effluent streams) did not inhibit the BOD test. From this it can be concluded that Virkon S was degradable under the conditions of test and as such would not affect the functioning of sewage treatment plants.
- **Biodegradability:** Virkon S consists mainly of inorganic salts which decompose into harmless by-products. The surfactant is a salt of a straight chain alkyl benzene sulphonate complying with EEC directive 82/243, giving more than 90% biodegradability under OECD test conditions.

SAFETY

- **Exposure:** No occupational exposure limits are specified for Virkon S components according to the requirements laid down in Health and Safety Executive Guidance Note EH 40/95 under the Control of Substances Hazardous to Health, (COSHH) Regulations, 1994.
- **Irritancy:** At 1% in use dilution Virkon S is classified as:- Non-irritant to skin, Non-irritant to eyes, when tested according to EU Directive 67/548/EEC.



INVESTOR IN PEOPLE

**WORLD CLASS
MANUFACTURING**

Independent report puts Antec's Virkon® S in the clear on the question of vehicle corrosion

Antec International's Virkon® S has been put through its paces by MIRA (the Motor Industry Research Association) - the UK's official vehicle engineering and testing body - and been shown to have "no significant long-term effects on the common materials used in vehicle applications".

Commissioned by Antec, the MIRA study compared Virkon® S with salt solution (sodium chloride), which is routinely used in winter for road de-icing and is the most common chemical affecting vehicle systems and materials during normal operation. In the study, it was found that the tread compounds of tyres were similarly affected by Virkon® S and sodium chloride. However, in a series of long-term immersion tests on vehicle metalwork - using a range of real vehicle components - prolonged immersion in Virkon® S appeared to have "little or no effect" on these materials while sodium chloride exposure was corrosive.

"In these experiments, genuine vehicle components were exposed to Virkon® S at its recommended dilution for 1,000 hours - which equates to approximately 3,000 vehicle sprays" comments Tom Chatterley, MIRA's Head of Materials Engineering Department. "Our conclusions are that, under realistic conditions, we would not expect Virkon® S to significantly affect common vehicle materials" he confirms.

The MIRA report also establishes that regular rinsing of tyres - or exposure to rainwater - will substantially reduce any long-term effects of Virkon® S on rubber compounds. Similarly, washing down vehicles after exposure to Virkon® S - as would be done routinely in the winter when salt is used on roads - will minimise any possible long-term corrosion effects on any class of vehicle.

Mark Blackwell, Antec's Director of Marketing & International Sales, comments "We know from the UK's foot-and-mouth crisis of 2001 that stock vehicles play a major role in the spread of livestock diseases. However, with the routine use of disinfectants, concerns have been raised about the possibility of corrosion to vital vehicle metalwork. The independent MIRA report on Virkon® S - and its favourable conclusion - should therefore encourage animal transporters to conscientiously disinfect their vehicles, both during disease outbreaks and in the interests of preventative biosecurity."

[Click here](#) to download a copy of the original summary letter on the independent test report. The summary letter is in Adobe Acrobat format and an [Adobe Acrobat viewer](#) can be downloaded free from the Adobe web site. These documents must not be altered or modified in any way.



MIRA Report Number 01-550630/02

“A Study of the Possible Effects on Vehicles and Vehicle Systems of a Disinfectant Associated with the Control of Foot & Mouth Disease and other Potential Foreign Animal Diseases”.

Antec International Limited contracted MIRA Limited to carry out a programme of experiments to show the effects of their product Virkon “S”, on various vehicle materials and components, in relationship to the possible effects of the disinfectant on similar materials and components when vehicles were exposed to Virkon “S” during the Foot and Mouth disease crisis. In all the experiments, Virkon “S” was compared with salt solution (sodium chloride), as would be used in winter service for road de-icing purposes, and the most common chemical substance that affects vehicle systems and materials during normal operation.

The first experiments, which used simple, small rectangular, metal coupons (the various metals representing those metals commonly used in vehicle components) determined that, under the laboratory conditions selected, Virkon “S” was more reactive than sodium chloride in the same situation, when acting as the electrolyte in a galvanic corrosion cell between two dissimilar metal coupons. Most metals showed a varying degree of reactivity but the magnesium metal coupons were the most reactive in this experiment, and magnesium is being used in increasing volumes in modern vehicles for such components as gearbox castings, differential casings and cross-car beams.

Long-term immersion corrosion tests, lasting 1000 hours, which equates to approximately 3,000 vehicle sprays, were also carried out using both the same standard metal coupons in the laboratory situation, and a selection of real vehicle materials and components. The results of this experiment confirmed that in the specific laboratory conditions, the small metal coupons immersed in Virkon “S” tended to corrode more than similar coupons immersed in the sodium chloride solution. However, in the case of the long-term exposure of the realistic vehicle materials and components to both Virkon “S” and sodium chloride solutions, the disinfectant appeared to have little or no effect on the components and materials examined, whilst those exposed to the sodium chloride solution showed some corrosion.

Another limited experiment studied the possible effects of Virkon “S” and sodium chloride on samples of tyre rubber compounds, tested in sheet form. This experiment found that tread compounds were generally affected in a similar manner when exposed to both the disinfectant and sodium chloride solutions, recording increases in hardness and reduction in tensile strength values of the rubber during the exposure period. However, sidewall rubber compounds were affected slightly differently, recording increases in both the hardness and tensile strength of the compound when exposed to the disinfectant solution. Increases in hardness may affect the long-term durability of the compounds. Regular rinsing of tyres or exposure to rain water after exposure to Virkon “S” will significantly reduce any possible long-term effects of this chemical solution on any class of tyre rubber compounds.

The report considers that the various laboratory experiments using the small metal coupons should be taken as “the worst case scenario”. In other words, what might happen in controlled conditions when bare metal was exposed to the test solutions. The experiment that used genuine vehicle components was less conclusive as to the effects of long-term corrosive to Virkon “S” and would indicate a more pragmatic approach to the findings would be appropriate.

In all the various experiments the reactivity of Virkon “S” and the sodium chloride can easily be reduced, or effectively eliminated by simple dilution, exposure to rain water or air drying. In other words, washing down your car regularly during the winter period when salt is used to de-ice the roads will significantly reduce the likelihood of corrosion taking place. Similarly, washing down vehicles after exposure to Virkon “S” will also significantly reduce any possible long-term effects of this chemical solution on any class of vehicle affected.

In general, the report considers that Virkon “S” should have no significant long-term effects on the common materials used in vehicle applications.

MIRA Limited
Materials Engineering Department
Watling Street
NUNEATON
Warwickshire
CV10 0TU

Tom Chatterley, Head of Materials Engineering Department

Master Label

Virkon[®] S
BROAD SPECTRUM DISINFECTANT

For Use in Cleaning and Disinfecting Industrial, Animal and Agricultural Facilities (OPT.)

Effective against Viruses
(including CANINE PARVOVIRUS) ! Bacteria ! Fungi

For Use in Emergency Disease Control (OPT.)

For use in Cleaning and Disinfecting Institutional and Service Facilities including stores, factories, schools, hotels, offices, ships, planes, transportation terminals, supermarkets and food warehouses. (OPT.)

For Use in Emergency Response and On-site Cleanup (emergency response calls, crime scenes, traffic accidents, fires, flood, natural and other disasters) e.g. cars, trucks, ambulances, and similar emergency apparatus, tires, wheels, floors, walls, ceilings, paved surfaces; and equipment such as SCBA, coats, boots, hats, masks, gloves, axes, Jaws of Life and similar emergency equipment.(OPT.)

For Use in Greenhouses, Horticulture, and Aquaculture (OPT.)

ACTIVE INGREDIENTS:

Potassium peroxymonosulfate.....	20.4%
Sodium Chloride.....	1.5%
OTHER INGREDIENTS.....	<u>78.1%</u>
TOTAL.....	100.00%

Equivalent to 9.75% Available Chlorine

<p>KEEP OUT OF REACH OF CHILDREN</p> <p>DANGER</p> <p>See [Back] [Side] Panel[s] [Inside Booklet] for Additional Precautions</p>
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Front Panel Continued

FIRST AID

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

If Swallowed:

- Call Poison Control Center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to do so by the poison control center or doctor
- Do not give anything by mouth to an unconscious person

If Inhaled:

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.
- Call a Poison Control Center or doctor for further treatment advice.

If in Eyes:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present after 5 minutes, then continue rinsing eye.
- Call a Poison Control Center or doctor for further treatment advice.

If on Skin:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a Poison Control Center or doctor for further treatment advice.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

___ lbs. (__) Net Weight

EPA Reg. No. 62432-1

EPA Est. No. 62432-EN-001

Antec

International

LEADERS IN BIOSECURITY

Manufactured By:

ANTEC INTERNATIONAL LTD.

Windham Road, Chilton Industrial Estates

Sudbury Suffolk C010 2XD, England

Virkon[®] S is a registered trademark of and manufactured by Antec International Limited
US Patent No. 4822512

[Comment: The list of claims (sites) under “EFFECTIVE AGAINST” may be placed in any order as long as each subheading and its contents remains intact.]

EFFECTIVE AGAINST THE FOLLOWING PATHOGENS:

ANIMAL AND ZOOONOTIC PATHOGENS

BACTERIA

Actinobacillus pleuropneumonia
 Bordetella avium
 Bordetella bronchiseptica
 Campylobacter pyloridis
 Clostridium perfringens
 Dermatophilus congolensis
 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

Avian Influenza Virus
 Avian Laryngotracheitis Virus
 Bovine Adenovirus Type 4
 Bovine Polyoma 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 Infectious Anemia Virus (Swamp
 Fever)
 Equine Arteritis Virus
 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

VIRUSES

Adenovirus Pneumonia
 African Horse Sickness Virus
 African Swine Fever Virus

Infectious Canine Hepatitis Virus
 Infectious Pancreatic Necrosis Virus
 Infectious Salmon Anaemia Virus
 Infective Bovine Rhinotracheitis Virus
 Leptospira Canicola Virus
 Maedi- Visna Virus
 Marek's Disease 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

PLANT PATHOGENS

Alternaria solani
 Botrytis cinera
 Colletotrichum coccodes
 Didymella bryoniae
 Fusarium oxysporum
 Fusarium solani
 Penicillium oxalicum
 Phomopsis sclerotioides
 Pyrenochaeta lycoopersici
 Pythium aphanidermatium
 Rhizoctonia solani
 Sclerotinia sclerotiorum
 Thielaviopsis basicola
 Verticillium dahliae

FUNGI

Aspergillus fumigatus
 Candida albicans
 Fusarium moniliforme
 Microsporum canis
 Trichophyton spp. (Ringworm)
 Trichophyton spp. (Mud Fever)

EFFECTIVE AGAINST THE FOLLOWING HUMAN HEALTH PATHOGENS

Human Immuno-Deficiency Virus (HIV) Type 1 (on hard, non-porous surfaces), Streptococcus pyogenes, Campylobacter pyloridis, klebsiella pneumoniae, Escherichia coli, Salmonella typhimurium, Salmonella choleraesuis, Pseudomonas aeruginosa, Staphylococcus aureus, Staphylococcus epidermidis, and Candida albicans.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER. Powder is corrosive. Causes skin burns and irreversible eye damage. Harmful if swallowed, absorbed through skin, or inhaled. Do not get in eyes, on skin, or on clothing. Wear protective clothing and rubber gloves. Avoid breathing dust. Wear goggles, face shield, or safety glasses. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse. **Corrosive statement refers to powder only not in use solution.**

[Comment: The instructions under “DIRECTIONS FOR USE” may be placed in any order as long as they remain a continuous section on the label.]

BROAD SPECTRUM DISINFECTANT

Virkon® S is effective against numerous microorganisms affecting animals: viruses, gram positive and gram negative bacteria, fungi (molds and yeasts), and mycoplasma. Efficacy of the 1% solution was determined in the presence of 400 ppm AOAC hard water and 5% organic material. Virkon® S passes the AOAC germicidal and detergent sanitizer test at a concentration of 0.5% (1:200) in the presence of 200 ppm hard water. Apply a 0.5% (1:200) solution for routine sanitation.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling

GENERAL INSTRUCTIONS—POULTRY AND FARM PREMISES

1. Remove all poultry or other animals and feeds from premises, trucks or other vehicles, coops, crates or other enclosures.
2. Remove all litter droppings and manure from floors, walls and surfaces of barns pens, stalls, chutes and other facilities and fixtures occupied or traversed by poultry or other animals.
3. Empty all troughs, racks, and other feeding and watering appliances.
4. Thoroughly clean all surfaces with soap or detergent and rinse with water.
5. Saturate surfaces with the recommended disinfecting solution for a period of 10 minutes.
6. Immerse all halters, ropes, and other types of equipment used in handling and restraining animals, as well as forks, shovels, and scrapers used for removing litter and manure.
7. Ventilate buildings, cars, boats, coops, and other closed spaces. Do not house poultry or livestock or employ equipment until treatment has been absorbed, set, or dried.
8. Thoroughly scrub treated feed racks, mangers, troughs, automatic feeders, fountains, and waterers with soap or detergent, and rinse with potable water before reuse.

This powder formula is easily diluted for use in manual or machine operations.

Virkon® S DILUTION CHART

Fill container with desired amount of water and add Virkon® S powder to achieve recommended solution concentration.

Quantity of Water	0.5% Solution	1% Solution	2% Solution
1 Quart	0.15 ounces	0.3 ounces	0.7 ounces
1 Gallon	0.65 ounces	1.3 ounces	2.7 ounces
10 Gallons	6.7 ounces	13.4 ounces	26.7 ounces
50 Gallons	33.4 ounces	66.8 ounces	133.5 ounces

Measuring cup provided.

Solutions are stable for 7 days. Do not soak metal objects in Virkon® S for long periods - 10 minutes is maximum necessary contact time. One gallon of solution is sufficient to treat 135 sq. ft.

POULTRY [PRODUCTION] [AND RATITE PRODUCTION]

[CONTROLS: Viruses of Newcastle Disease, Infectious Bronchitis, Infectious Bursal Disease, Avian Laryngotracheitis, Marek's Disease, Egg Drop Syndrome, Avian Influenza, Turkey Herpes Virus and Duck Viral Enteritis. Fungi (molds and yeasts) - Aspergillus flavus, Aspergillus fumigatus and Candida albicans. Bacteria - Streptococcus pyogenes, Campylobacter pyloridis, Klebsiella pneumoniae, Escherichia coli, Salmonella typhimurium, Salmonella choleraesuis, Pseudomonas aeruginosa, Staphylococcus aureus, Staphylococcus epidermidis, Bordetella avium and Mycoplasma gallisepticum.] (OPT.)

HATCHERIES: Virkon® S at 1% solution can be used for cleaning and disinfecting hatchers, setters, evaporative coolers, humidifying systems, ceiling fans, chicken houses, transfer trucks, trays, and plastic chick boxes.

Virkon® S at 1-2% solution is recommended for use in fogging (wet misting) operations as a supplemental measure, either before or after regular cleaning and disinfecting procedures. Fog (wet mist) until the area is moist using automatic foggers according to manufacturer's use directions.

BROILER/BREEDER HOUSES: Follow General Instructions to remove poultry and pre-clean area to be treated. Spray floors and walls with Virkon® S at 1% solution. Thoroughly wash waterers and feeders with a 1% solution of Virkon® S. After contact for 10 minutes, rinse with water. Do not house poultry or use equipment until treatment has dried.

FOR AIR SANITIZING: Use Virkon® S at 0.5-1% solution, and fog until surfaces are moist. Allow at least 2 hours before entering treated area. Rinse foggers and sprayers with water following use.

PROCESSING PLANTS: Spray Virkon® S at 1% solution to disinfect and clean walls, ceilings and floors.

SWINE PRODUCTION

[CONTROLS: Viruses of Hog Cholera, Swine influenza, Porcine Parvovirus, Pseudorabies, Porcine Reproductive and Respiratory Syndrome (PRRS), Rotoviral Diarrhea, African Swine Fever and Foot and Mouth Disease. Bacteria of Pleuropneumonia, Treponema hyodysenteriae, and Clostridium perfringens. Fungi: Fusarium moniliforme.] (OPT.)

Follow General Instructions to remove swine and preclean area to be treated. Virkon® S at 1% solution is recommended for cleaning and disinfecting farrowing units, nurseries, finisher houses, processing plants, and agricultural production equipment such as trucks, waterproof footwear (such as rubber boots), and associated livestock equipment and instruments.

Virkon® S at 0.5-1% solution is recommended for use in fogging (wet misting) operations or as a supplemental measure either before or after regular cleaning and disinfecting procedures. Fog (wet mist) until the area is moist using automatic foggers according to manufacturer's use directions. Rinse foggers and sprayers with water following use.

EQUINE PRODUCTION

BROAD SPECTRUM EQUINE DISINFECTANT/DETERGENT/WASH FOR CLEANING AND DISINFECTING STABLES, EQUIPMENT, AND AERIAL DISINFECTION

[CONTROLS: Viruses of African Horse Sickness, Equine Viral Arteritis (Pink Eye), Coital Exanthema, Myeloencephalopathy, Rhinopneumonitis, Equine Contagious Abortion, Equine Papillomatosis, Equine Infectious anemia (Swamp Fever), Adenovirus Pneumonia, Equine Influenza (The Cough) and Rhinitis. Bacterial: Clostridial Diarrhea, Fistulous Withers (Poll Evil), Taylorella equigenitalis, Bordetella bronchiseptica, Streptococcus equi (Strangles) and Pseudomonas mallei (Glanders). Fungi: Dermatophytosis (Ringworm), Dermatophylosis (Mud Fever), and Fusarium moniliforme.] (OPT.)

APPLICATIONS: For cleaning and disinfecting all surfaces, equipment, utensils and instruments in Veterinary practices, kennels, stables, catteries, etc.

USES:

Stables, Horse Boxes, Box Stalls, Tack, Equipment, and Feed Rooms: Thoroughly clean and dry [dry clean] surfaces, then wash the area manually or with pressure washer with a 1% Virkon® S solution. Rinse with clean water.

Blankets, Saddle Pads and Rugs: Shampoo by hand or spray lightly with a hand-sprayer and leave to dry. Shake or vacuum to remove residue.

Aerial Spraying to control airborne diseases: Use a hand or knapsack sprayer with fine setting, or an automatic spraying system. Spray a 1% Virkon® S solution for 2-3 minutes twice daily, first thing in the morning and last thing at night. Rinse sprayers with water after use.

BOVINE PRODUCTION

[CONTROLS: Viruses of Calf rotavirus, Infectious Bovine Rhinotracheitis, Bovine Adenovirus Type 4 and Pseudorabies and Foot and Mouth Disease; Bacteria of *Maraxella bovis*, *Haemophilus somnus* and *Mycobacterium bovis*; Fungi of *Fusarium moniliforme*.] (OPT.)

Follow General Instructions to remove livestock and pre-clean area to be treated. A 1% solution of Virkon® S is recommended to clean and disinfect areas associated with bovine housing stabling, hospital quarantine pens, feedlot facilities, and agricultural production equipment such as trucks, water-proof footwear (such as rubber boots), and associated livestock equipment and instruments.

COMPANION ANIMALS

[CONTROLS: Viruses of Canine Parvovirus, Distemper, *Leptospira canicola*, Feline parvovirus, Feline herpes and Feline calicivirus. Bacteria of *Staphylococcus aureus*, *Streptococcus pyogenes*, *Klebsiella pneumoniae*, and *Pseudomonas aeruginosa*; Fungi of *Microsporium canis*.] (OPT.)

[APPLICATIONS] A 1% solution of Virkon® S is recommended as a “one step” cleaning and disinfecting procedure for all surfaces, equipment, instruments, utensils and cages [caging systems] within [associated with] Veterinary Medical Hospitals, infectious disease wards, quarantine areas, Humane Society facilities, laboratory animal quarters, grooming and boarding facilities, kennels, catteries and animal transportation vehicles.

Do not immerse metal objects in Virkon® S for long periods - 10 minutes is maximum contact time.

GREENHOUSES AND HORTICULTURE

Virkon® S is intended to disinfect inanimate environmental surfaces, glasshouse structures, equipment, utensils, trays, containers, and vehicles in greenhouses and other horticultural settings prior to introduction or reintroduction of plants, seeds, or soil. It is not intended to directly affect agricultural production and must not be applied to plants, seeds, or soil. If necessary, remove or cover these items prior to use of the product.

Remove all crop debris, strings and other deposits from structures, empty trays and pots. Power wash all the dust off the covering and superstructure and let dry. Using a sprayer or fogger saturate all surfaces with a 1% solution of Virkon® S. Let air dry.

Virkon® S may also be used to disinfect irrigation tanks and lines. Run a 1% solution through the system or soak equipment in a 1% solution. Let stand for ten minutes and flush system with clean water after treatment.

Virkon® S at 0.5-1% solution is recommended for use in fogging (wet misting) operations or as a supplemental measure either before or after regular cleaning and disinfecting procedures. Fog (wet

mist) until the area is moist using automatic foggers according to manufacturer's use directions. Rinse foggers and sprayers with water following use.

AQUACULTURE

Virkon® S is intended to disinfect inanimate environmental surfaces associated with aquaculture including vehicles, nets, boots, waders, dive suits, hoses, brushes and other similar equipment. Virkon® S may also be used in foot dips. Virkon® S must not be applied directly to water.

Equipment used in separate sites, tanks, ponds in aquacultural settings should be disinfected before each new use by soaking for 20-30 minutes in a 1% Virkon® S solution followed by a water rinse.

Virkon® S at 0.5-1% solution is recommended for use in fogging (wet misting) operations or as a supplemental measure either before or after regular cleaning and disinfecting procedures. Fog (wet mist) until the area is moist using automatic foggers according to manufacturer's use directions. Rinse foggers and sprayers with water following use.

EMERGENCY DISEASE CONTROL (ANIMAL HEALTH)

CONTROLS: OIE List A Disease organisms including Foot and Mouth Disease Virus, African Horse Sickness Virus, Vesicular Stomatitis Virus, Classical Swine Fever Virus (Hog Cholera Virus), African Swine Fever Virus, Newcastle Disease Virus, and Highly Pathogenic Avian Influenza Virus. (OPT.)

A 1% solution of Virkon® S is recommended to clean and disinfect agricultural facilities and equipment, military facilities and equipment; airport facilities and equipment, port facilities and equipment, rail facilities and equipment, quarantine facilities and equipment, slaughter facilities and equipment, and other shipping facilities and equipment where animals or soils suspected of harboring foot and mouth disease virus might have been previously present.

Within these facilities, treated objects include but are not limited to vehicles, farm equipment (including tractors, ploughing shares, cars and trucks, farm engines, harvesters, loaders, mowers, tillers and slaughter machinery), military equipment (including tanks and troop carriers), and shipping equipment (pallets, bins, and containers).

Spray Virkon® S at 1% solution to disinfect and clean walls, ceilings, floors, decks, container surfaces, vehicles, wheels, water proof footwear (such as rubber boots), livestock equipment, utensils and instruments.

Do not immerse metal objects in Virkon® S for long periods - 10 minutes is maximum contact time.

INSTITUTIONAL AND SERVICE FACILITIES (HUMAN HEALTH)

CONTROLS: Human Immuno-Deficiency Virus (HIV) Type 1 (on hard, non-porous surfaces), Streptococcus pyogenes, Campylobacter pyloridis, klebsiella pneumoniae, Escherichia coli, Salmonella typhimurium, Salmonella choleraesuis, Pseudomonas aeruginosa, Staphylococcus aureus, Staphylococcus epidermidis, and Candida albicans. (OPT.)

With Virkon® S, only one product is needed to clean and disinfect all surfaces except acid-sensitive surfaces such as copper, brass, or aluminum. Do not use Virkon S on these acid-sensitive surfaces. Avoid splashing Virkon® S solution on textiles or carpets. Virkon® S may be used on carpeting or other textiles only if area is tested for color fastness before use and treated area vacuumed when dry.

Cleaning and Disinfecting Non-Food Contact Surfaces: Remove gross dirt and use 1.0% Virkon® S solution prepared according to the Dilution Chart below. Apply to surface using a mop, sponge, brushes or spray device until the surface is visibly clean. Air dry. In cases of fungal or viral contamination of non-food contact surfaces, follow these instructions substituting a 2.0% Virkon® S solution.

Sanitizing Toilet Bowls: After flushing, sprinkle 1 oz. Virkon® S powder around the bowl, scrub with a brush, and leave for 10 minutes. Flush.

Cleaning and Disinfecting Manikins Used in CPR Training: Manikins should be cleaned as soon as possible at the end of each class to avoid drying of contaminants on surfaces. Disassemble the manikin as directed by the manufacturer's instructions. Thoroughly wash all internal and external surfaces and reusable protective face shields with a brush using a 1% Virkon® S solution. Let stand for 10 minutes and rinse with potable water.

Cleaning and Disinfecting Hard, Non-porous Surfaces Suspected of HIV Type 1 Contamination: Cover heavy spillage of body fluids with Virkon® S powder. Let stand for 10 minutes, and then scoop into plastic bag. Treat bag and its contents as infectious medical waste. Prepare 2% Virkon® S solution according to the Dilution Chart. Apply to surface to be treated using a mop, sponge, brush or spray device until the surface is visibly clean. Air dry.

EMERGENCY RESPONSE AND ON-SITE CLEANUP

Cover heavy spillage of body fluids with Virkon® S powder. Let stand for 10 minutes, and then scoop into plastic bag. Treat bag and its contents as infectious medical waste.

Prepare 2% Virkon® S solution according to the Dilution Chart. Apply to surface to be treated using a mop, sponge, brush or spray device until the surface is visibly clean. Air dry.

STORAGE AND DISPOSAL

STORAGE: Store in a cool, dry place in tightly closed container away from children. Always replace lid after use.

DISPOSAL: Wash empty container thoroughly and dispose in trash. Do not mix this product with other chemicals

MATERIAL SAFETY DATA SHEET

Pharmacal Research Laboratories Inc. • 562 Captain Neville Drive, Waterbury CT 06705
(203) 755-4908 • 800-243-5350 • FAX (203) 755-4309
www.pharmacal.com

ISSUE DATE: Aug. 16, 2004

I. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

PRODUCT: VIRKON-S EPA REG # 62432-1

MSDS HSD/US41

IMPORTER: Pharmacal Research Laboratories

562 Captain Neville Drive Waterbury CT 06705

Tel: 800-243-5350

Supplier: Antec International Limited

Sudbury Suffolk CO10 2XD

Tel: 44-(0)1787-377305

All information provided in this Material Safety Data Sheet refers specifically to the Virkon S powder, as supplied, & **not** the in-use solutions, unless otherwise stated.

II.COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical</u>	<u>% Concentratio n</u>	<u>CAS</u>	<u>Exposure</u>
Potassium peroxomonosulfate	40-60	70693-62-8	1mg/m ³ , total dust, 8 & 12 hr. TWA – manufacturer's recommendation.
Sodium Dodecylbenzene-sulphonate	10-20	25155-30-0	None assigned.
Sulfamic Acid	1-10	5329-14-6	0.5mg/m ³ , 8 & 12 hr. TWA – manufacturer's recommendation.

III.HAZARDS INFORMATION

Potential Health Effects

Danger: Powder is corrosive. Causes skin burns & irreversible eye damage. Harmful if swallowed, absorbed through skin or inhaled. Do not get into eyes, on skin, or on clothing.

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACCIH as a carcinogen.

HMIS

Health-3 Fire-0 Reac- 0

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IV. FIRST AID

INHALATION

Symptom: - Inhalation of this powder in sufficient quantities may cause irritation of the upper respiratory passages, nose & throat. Gross over exposure may cause ulceration of mucous membranes.

Treatment: - Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

Symptom: - If allowed to become moist the dry powder may cause severe irritation and in cases of prolonged contact may cause burns or ulceration. Contact with the dry powder may cause skin irritation with discomfort or rash, or allergic skin reactions in sensitive individuals.

Treatment: - Flush skin with plenty of water. Remove contaminated clothing & shoes after use. Call a physician. Wash contaminated clothing before reuse.

EYE CONTACT

Symptom: - Eye contact with the powder may cause eye corrosion or ulceration; eye irritation with discomfort, tearing or blurring of vision. Severe eye damage may result if not treated immediately.

Treatment: - In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

Symptom: - Ingestion of this product in sufficient quantities may cause gastritis, with stomach pain, nausea, vomiting, diarrhoea, headache or weakness; possibly progressing to necrosis or haemorrhage with gross overexposure.

Treatment: - If swallowed, do not induce vomiting. Give 2 glasses of water immediately. Never give anything by mouth to an unconscious person. Call a physician.

V. FIRE FIGHTING MEASURES

Flammable properties: Not applicable

Extinguishing media: Water, dry powder (sand or Met-L-X), CO₂.

Fire Fighting instructions: Evacuate personnel to a safe area. Wear self-contained breathing apparatus (SCBA) & full protective equipment. When heated above 70°C, decomposes with evolution of corrosive gas (SO₂). Virkon S itself is not flammable or oxidizing, but may assist combustion of other materials under exceptional circumstances.

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VI. ACCIDENTAL RELEASE PROCEDURES

Safeguards (Personnel).

Review FIRE FIGHTING MEASURES & HANDLING sections. Use appropriate Personal Protective Equipment during clean-up.

Environmental precautions: Do not allow the powder concentrate to enter drains. Infrequent disposal of small quantities (<0.5kg) may be diluted to waste with large quantities of water, subject to local waste disposal regulations. Do not allow entry to surface waters.

Methods for clean up: Sweep up carefully, preferable with the aid of a suitable dry anti-dusting agent if available. Place in suitable containers for disposal. Prevent powder from becoming moist while awaiting disposal, if possible. Moist product awaiting disposal must be kept away from combustible material & stored in a manner that allows suitable ventilation of the waste.

VII. HANDLING AND STORING

Handling Personnel: Avoid inhalation. Do not get in eyes and avoid contact with skin. Wear Personal Protective Equipment in accordance with section 8.

Handle with sufficient care to prevent dust generation.

Storage: Keep containers tightly sealed & avoid coming into contact with moisture during storage. Keep containers tightly sealed. Keep away from combustible material. Avoid contamination of the product.

1% solution: Store in a clean, loosely capped plastic container at room temperatures, and away from direct sunlight. Do not allow solution to freeze. Discard any used or contaminated solution & dispose of any stock solutions after 7 days from date of preparation.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Appropriate Local Exhaust Ventilation may be necessary for handling the product where dust formation is a problem, i.e. product in bulk quantities, or operations in small and/or poorly ventilated areas. Not normally necessary for preparation of solutions from small pack sizes (10lb or less).

Personal Protection Equipment:

Respiratory: Where a Health and Safety assessment shows the dusting levels to be sufficiently high when handling the powder product, wear a NIOSH approved respiratory mask against fine particles. Respiratory protection is not normally considered necessary when handling solutions of diluted product. However, when working with spray mists of Virkon S, respiratory protection in the form of a NIOSH approved respirator unit in conjunction with an organic vapor – fine particle filter cartridge.

Protective clothing:

Eye: Chemical splash goggles.

Skin: Overalls.

Hand: Rubber gloves.

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Exposure Guidelines & Applicable Exposure Limits:

Potassium peroxomonosulfate

PEL (OSHA): None Established
TLV (ACGIH): None Established
AEL* (DuPont): 1 mg/m³, total dust, 8 & 12 hr. TWA

Sulfamic Acid

PEL (OSHA): None Established
TLV (ACGIH): None Established
AEL* (DuPont): 0.5 mg/m³, 8 & 12 Hr. TWA
1.5 mg/m³, 15 minute TWA

*AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Boiling point: Decomposes on heating
Solubility in water: Approximately 8.3oz/gal
Form: Free flowing powder
Color: Yellow
Specific gravity: ~1.07

X. STABILITY AND REACTIVITY

Chemical stability: Stable at normal temperatures & storage conditions.

Incompatibility with other materials: Incompatible with strong alkalis. In contact with halogen salts (e.g. KCl, KBr, KI, NaCl), Virkon S may react to release toxic halogen gases, such as chlorine, bromine & iodine. In exceptional cases Virkon S may support combustion; avoid contact with combustible materials.

Decomposition: Under certain extreme conditions sulphur dioxide & chlorine may be generated if the powder is allowed to become moist.

Polymerisation: Polymerisation will not occur.

XI. TOXICOLOGICAL INFORMATION (Animal Data- VIRKON-S POWDER)

Acute Dermal Toxicity: LD₅₀ >2.0g/kg (rabbit).

Acute Oral Toxicity: LD₅₀ = 1.70g/kg (male rats) & 1.16g/kg (female rats)

Acute Inhalation Toxicity: 4 hour LC₅₀ > 6.147mg/1 (male & female rats).

Guinea Pig Dermal Sensitisation: Virkon S displayed no fatiguing or sensitising effects.

Primary Skin Irritation: The powder is corrosive to the skin of rabbits with an irritation index of 7.00. A dilution of 5% results in an irritation index of 0.08 in rabbits.

Primary Eye Irritation: The powder is corrosive to rabbit's eyes. A dilution of 5% produces conjunctival irritation.

Effects of Overexposure: Inhalation of dust may cause choking, coughing or wheezing. A 1% solution is normally non-irritating.

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XII. ECOLOGICAL INFORMATION

Aquatic Toxicity:

Oxone Monopersulphate:

96 hour LC₅₀ – rainbow trout: 53 mg/L

48 hour EC₅₀ – daphnia magna: 3.5 mg/L

Sodium Dodecylbenzenesulfate:

96 hour LC₅₀ – rainbow trout: 1.7 mg/L

Sulphamic Acid:

96 hour LC₅₀ – fathead minnows: 7.650 mg/L

XII. WASTE DISPOSAL CONSIDERATIONS

Treatment, storage, transportation, & disposal must be in accordance with applicable Federal, State/Provincial, and Local Regulations.

XIV. TRANSPORT INFORMATION

Shipping Information:

Not Regulated as a hazardous material by DOT, IMO, or IATA.

XV. U.S. REGULATORY INFORMATION

TSCA Inventory Status: Listed

The following components are TSCA listed:

Oxone

Sodium Dodecylbenzenesulfonate

Sulphamic Acid

Those not stated are proprietary & non-hazardous. However, all components over 0.1% inclusion are TSCA listed.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge & experience is gained.