UCARCIDE™ 50 Antimicrobial Solution

A MICROBIOCIDE FOR USE IN CONTROLLING BACTERIA INCLUDING SLIME-FORMING BACTERIA, SULFATE-REDUCING BACTERIA, FUNGI, YEAST AND ALGAE IN PAPER MILLS AND PAPER MILL PROCESS WATER SYSTEMS, PIGMENTS AND FILLER SLURRIES FOR PAPER AND PAPERBOARD. WATERBASED COATINGS FOR PAPER AND PAPER BOARD, AIR WASHERS AND INDUSTRIAL SCRUBBING SYSTEMS, RECIRCLATING COOLING AND PROCESS WATER SYSTEMS INCLUDING THOSE THAT CONTAIN NON-MEDICAL REVERSE OSMOSIS MEMBRANES, HEAT TRANSFER SYSTEMS, AQUEOUS METAL WORKING FLUIDS AND WATER BASED CONVEYOR LUBRICANTS AND IN OIL WELL DRILLING, OIL FIELDPROCESSING APPLICATIONS, AND OIL FIELD WATER SYSTEMS, GAS PRODUCTION AND TRANSMISSION PIPELINES AND SYSTEMS, AND GAS STORAGE FIELDS AND EQUIPMENT: SUCH AS, STEAM-INJECTION WATER HOLDING TANKS, FLOOD WATER, INJECTION WATER, HOLDING POND WATER, DISPOSAL-WELL WATER, WATER HOLDING TANKS, FUEL STORAGE TANKS, AND RELATED REFINERY AND OIL FIELD CLOSED, INDUSTRIAL RECIRCULATING WATER HANDLING SYSTEMS AND FOR USE BY MANUFACTURERS AND FORMULATORS AS A PRESERVATIVE IN FORMULATING PRODUCTS FOR OIL FIELD APPLICATIONS AND FOR USE BY MANUFACTURERS AS A PRESERVATIVE IN INDUSTRIAL AND CONSUMER PROCESSES AND PRODUCTS.

REGISTRATION NO: 27868

PEST CONTROL PRODUCTS ACT

ACTIVE INGREDIENT: Glutaraldehyde......50%

COMMERCIAL

DANGER

POISON {Poison Logo}

READ THE LABEL BEFORE USING CORROSIVE (Corrosive Logo)

LANXESS Corporation 111 RIDC Park West Drive Pittsburgh, PA 15275-1112 1-800-LANXESS

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EMERGENCY TELEPHONE NUMBERS

TRANSPORTATION EMERGENCIES ONLY:

CANUTEC (Canada): 1-613-996-6666

CHEMTREC: 1-800-424-9300 (USA); 1-703-527-3887 (International)

ALL OTHER EMERGENCIES:

LANXESS: 1-800-410-3063 (USA); 1-866-673-6350 (Canada)

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Net contents: Made in USA

PRECAUTIONS

HAZARDS TO HUMANS

DANGER

KEEP OUT OF REACH OF CHILDREN

Corrosive. Causes irreversible eye damage. Causes skin burns. Harmful if inhaled. May be fatal if swallowed. Harmful if absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Causes asthmatic signs and symptoms in hyper-reactive individuals. Do not get in eyes, on skin, on clothing. Avoid breathing vapor. Do not swallow.

Wear face shield, coveralls over a over long-sleeved shirt and long pants, chemical-resistant gloves, socks and chemical-resistant footwear and eye protection during mixing, loading, application, clean-up and repair. Wash thoroughly with soap and water after handling. Use only in well ventilated area. Remove contaminated clothing and shoes and wash them before reuse.

ENVIRONMENTAL HAZARDS

This product is toxic to aquatic organisms. It is not to be used in circumstances that would cause or allow it to enter lakes, streams, ponds, estuaries, oceans or other waters in contravention of federal or provincial regulatory requirements. The requirements of applicable laws should be determined before using the product. DO NOT discharge effluent containing this product into sewer systems, lakes, streams, ponds, estuaries, oceans or other waters.

FIRST AID

IF SWALLOWED: Contact a poison control centre or doctor immediately for treatment advice. If the person is fully alert and cooperative, have the person rinse mouth with plenty of water. In cases of ingestion have the person drink 120 - 240 mL (4 to 8 ounces) of water. Do not induce vomiting. Do not attempt mouth rinse if the person has respiratory distress, altered mental status, or nausea and vomiting.

IF IN EYES: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor immediately for treatment advice.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 – 20 minutes. Call a Poison Control Centre or a doctor for treatment advice.

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

Take MSDS and, if available, the container, label or product name and Pest Control Product Registration Number with you when calling a poison control centre or a doctor, or when seeking medical attention.

TOXICOLOGICAL INFORMATION

Aspiration may cause lung damage. Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsion may be needed.

STORAGE AND HANDLING

To prevent contamination store this product away from food and feed.

UCARCIDE™ 50 Antimicrobial solutions are incompatible with many commonly used materials of construction such as steel, galvanized iron, aluminum, tin, and zinc. These solutions can be stored and handled in baked phenolic-lined steel, polyethylene, stainless steel, or reinforced epoxy-plastic equipment. This product freezes at about - 21° C. Therefore, unless the storage tank is inside or underground, heating and insulation may be required. If heating is needed, exposure to high temperatures should be avoided. For short storage times (up to about 1 month), temperatures of up to 38°C can be tolerated but the preferred maximum storage temperature is about 27°C. A stainless steel centrifugal pump is suggested for transfer service. Spiral wound stainless steel with TEFLON® is suitable for gaskets and packing.

Handle in a well-ventilated area. If vapors are irritating to the nose or eyes, special ventilation or respiratory protection (MSHA/NIOSH approved air purifying respirator equipped with an organic vapor cartridge) may be required.

The product in its undiluted form must not be used in a spray or aerosol application.

DISPOSAL:

- 1. Triple- or pressure-rinse the emptied container. Add the rinsings to the treatment site.
- 2. Follow provincial instructions for any required additional cleaning of the container prior to its disposal.
- 3. Make the empty container unsuitable for further use.
- 4. Dispose of the container in accordance with provincial/ territorial requirements.
- 5. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial/territorial regulatory agency. Contact the manufacturer and the provincial//territorial regulatory agency in case of a spill, and for cleanup of spills.

NOTICE TO USER

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the Pest Control Products Act to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

DIRECTIONS FOR USE

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DO NOT open pour more than 20 L of concentrate per day. Use an automatic addition system if using more than 20 L of concentrate per day.

DO NOT contaminate irrigation or drinking water suppliers or aquatic habitats by cleaning of equipment or disposal of wastes.

DO NOT discharge effluent containing this product into sewer systems, lakes, streams, ponds, estuaries, oceans or other waters.

PAPER MILLS AND PAPER MILL PROCESS WATER SYSTEMS

UCARCIDE™ 50 Antimicrobial should be added to the paper-making system at a point of uniform mixing such as the beaters, broke chest pump, save-all tank, or white-water tank.

Initial Treatment: When the system is noticeably contaminated, add 0.25 kg to 1.5 kg of UCARCIDE™ 50 Antimicrobial per metric tonne of pulp or paper (dry basis) as a slug dose. Repeat until control is achieved. Heavily fouled systems should be boiled out prior to initial treatment.

Subsequent Dose: When microbial control is evident, add 0.15 kg to 1.0 kg of UCARCIDE™ 50 Antimicrobial per metric tonne of pulp or paper (dry basis) as a slug dose as necessary to maintain control.

PIGMENTS AND FILLER SLURRIES FOR PAPER AND PAPER BOARD

Use from 0.1 to 0.6 grams of UCARCIDE™ 50 Antimicrobial per Kg dry powder to produce a concentration of 100 to 600 ppm as product (based on slurry solids) in the mixed slurry.

WATER BASED COATINGS

Note: For use in non-food contact coatings only.

Use from 0.1 to 0.6 grams of UCARCIDE™ 50 Antimicrobial per Kg dry powder to produce a concentration of 100 to 600 ppm as product (based on slurry solids) in the mixed slurry. When used as an in-can preservative in which paints may be applied in a residential setting, the maximum application rate for paints is 100 ppm.

AIR WASHERS AND INDUSTRIAL SCRUBBING SYSTEMS/RECIRCULATING COOLING AND PROCESS WATER SYSTEMS

This product may be used only in industrial air washers and air washer systems which have mist-eliminating components. UCARCIDE™ 50 Antimicrobialshould be added at the same application rates as described below, to a water treatment system at a convenient point of uniform mixing such as the basin area. Addition may be made intermittently (SLUG DOSE) or continuously. Badly fouled systems can be shock treated with UCARCIDE™ 50 Antimicrobial. Under these conditions, blowdown should be discontinued for up to 24 hours or more. UCARCIDE™ 50 Antimicrobial can be used in industrial process water systems that contain ultra filtration units and non-medical reverse osmosis membranes (where approved for compatibility by the membrane manufacturer) and associated distribution systems.

INTERMITTENT (SLUG DOSE) METHOD Badly fouled systems must be cleaned before treatment is begun.

Initial Dose: When the system is noticeably fouled, apply 100 to 400 ppm product of UCARCIDE™ 50 Antimicrobial or 100 to 400 mL of UCARCIDE™ 50 Antimicrobial per 1000 Litres of water in the system. Repeat until control is achieved.

Subsequent Dose: When microbial control is evident, add 30 to 100 ppm of UCARCIDE™ 50 Antimicrobial or 30 mL to 100 mL of UCARCIDE™ 50 Antimicrobial per 1000 Litres of water in the system weekly, or as needed to maintain control.

CONTINUOUS FEED METHOD Badly fouled systems must be cleaned before treatment is begun.

Initial Dose: When the system is noticeably fouled, apply 100 to 400 ppm product of UCARCIDE™ 50 Antimicrobial or 100 to 400 mL of UCARCIDE™ 50 Antimicrobial per 1000 Litres of water in the system.

Subsequent Dose: Maintain this treatment level by starting a continuous feed of 14 to 100 ppm of UCARCIDE™ 50 Antimicrobial or 14 mL to 100 mL of UCARCIDE™ 50 Antimicrobial per 1000 Litres of water in the system per day.

HEAT TRANSFER SYSTEMS

Evaporative Condensers, Hydrostatic Sterilizers and Retorts, and Warmers

UCARCIDE™ 50 Antimicrobial should be used at the same application rates, and in the same manner as described above. It should be added to the system at a point of uniform mixing such as a basin area, sump area or other reservoir or collecting area from which the treated water will be circulated uniformly throughout the system.

AQUEOUS METALWORKING FLUIDS

Compatibility of UCARCIDE™ 50 Antimicrobial with a sterile sample of metalworking fluid should be checked for background demand. UCARCIDE™ 50 Antimicrobial should be added to a metalworking fluid system at a point of uniform mixing such as the fluid collection tank. Additions may be made intermittently (SLUG DOSE) at intervals of one week or less.

Initial Dose: When the system is noticeably fouled, apply 1.8 to 5.4 Liters of UCARCIDE™ 50 Antimicrobial per 10,000 Litres of metalworking fluid to the system. Repeat until control is achieved.

Subsequent Dose: When microbial control is evident, add 0.7 to 3.6 Liters of UCARCIDE™ 50 Antimicrobial per 10,000 Litres of metalworking fluid to the system weekly or as needed to maintain control. Badly fouled systems must be cleaned before treatment is begun.

WATER BASED CONVEYOR LUBRICANTS

Avoid contamination of food in application of product. Compatibility of UCARCIDE™ 50

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Antimicrobial with a sterile sample of lubricant or metalworking fluid should be checked for background demand. Thoroughly clean all tracks and conveyors to remove gross soil. Rinse well. Use an automatic feed system as recommended by our

Dow representative to provide 100 to 600 mL (50 to 300 ppm active) UCARCIDE™ 50 Antimicrobial per 1000 Liters of diluted lubricant.

WATER FLOODS

UCARCIDE™ 50 Antimicrobial should be added to a water flood system at a point of uniform mixing. Initial Treatment: When the system is noticeably contaminated, add 100 to 5000 ppm UCARCIDE™ 50 Antimicrobial to the system (0.1 Liters to 5 Liters UCARCIDE™ 50 Antimicrobial per 1000 liters flood water). Repeat until control is achieved.

Subsequent dose: When microbial control is evident, add 20 to 5000 ppm UCARCIDE™ 50 Antimicrobial (0.02 Liters to 5 Liters UCARCIDE™ 50 Antimicrobial per 1000 liters flood water) to the system weekly, or as needed to maintain control.

DRILLING MUDS/DRILLING, COMPLETION, WORKOVER FLUIDS UCARCIDE™ 50 Antimicrobial should be added to a drilling fluid system at a point of uniform mixing such as the circulating mud tank.

Initial Treatment: Add 50 to 1000 ppm UCARCIDE[™] 50 Antimicrobial (0.8 Liters to 15.1 Liters UCARCIDE[™] 50 Antimicrobial per 100 barrels of fluid) to a freshly prepared drilling fluid, depending on the severity of contamination.

Maintenance Dosage: Maintain a concentration of 50 to 1000 ppm UCARCIDE[™] 50 Antimicrobial by adding 0.8 Liters to 15.1 Liters of UCARCIDE[™] 50 Antimicrobial per 100 barrels of fluid, as needed, depending on the severity of contamination.

PACKER FLUIDS

UCARCIDE™ 50 Antimicrobial should be added to a packer fluid at a point of uniform mixing such as circulating holding tank. Add 50 to 600 ppm UCARCIDE™ 50 Antimicrobial (0.8 Liters to 9.5 Liters UCARCIDE™ 50 Antimicrobial per 100 barrels of fluid) to a freshly prepared fluid, depending on the severity of contamination. Seal the treated packer fluid in the wall between the casing and production tube.

GAS PRODUCTION AND TRANSMISSION PIPELINES AND SYSTEMS

UCARCIDE™ 50 Antimicrobial should be added to a gas production or transmission line via direct injection. The application should be conducted to ensure maximum distribution of UCARCIDE™ 50 Antimicrobial through the entire internal surface of the pipeline by adding an amount of biocide which eventually comes out the other end of the pipeline. Criteria for success of the treatment will be reduction in bacterial count and/or corrosion rates. To facilitate application it may be desirable to dilute the UCARCIDE™ 50 Antimicrobial with the appropriate solvent immediately before use. The concentration in the solvent should not fall below the 500 to 5000 ppm range. Injections to the system should be made on a weekly basis, or as needed to maintain control.

GAS STORAGE WELLS AND SYSTEMS

Individual injection wells should be treated with sufficient quantity of UCARCIDE™ 50 Antimicrobial to produce a concentration of 500 to 5000 ppm UCARCIDE™ 50 Antimicrobial

when diluted by the water present in the formation. Injection should take place before gas is injected (during the summer). Injections should be repeated yearly, or as needed to maintain control.

Individual drips should be treated with a sufficient quantity of UCARCIDE™ 50 Antimicrobial to produce a concentration of 200 to 2000 ppm UCARCIDE™ 50 Antimicrobial when diluted by the water present in the drip. Injections should be repeated yearly, or as needed to maintain control.

HYDROTESTING

Water used to hydrotest pipelines or vessels should contain 100 to 4000 ppm v (0.1 Liters to 4 Liters UCARCIDE™ 50 Antimicrobial per 1000 liters water), depending on water quality and length of time the equipment will remain idle.

PIPELINE PIGGING AND SCRAPING OPERATION

Add UCARCIDE™ 50 Antimicrobial to a slug of water immediately following the scraper (ideally this water volume can be kept to a minimum and contained between the scraper and a trailing pig). Sufficient UCARCIDE™ 50 Antimicrobial should be added to produce a concentration of 0.1 to 1% (0.1 Liter to 1.0 Liter UCARCIDE™ 50 Antimicrobial per 100 liters water), depending on the length of the pipeline and the severity of biofouling.

GENERAL PRESERVATIVE USE

UCARCIDE™ 50 Antimicrobial is recommended for use in aqueous or water containing products and systems, including industrial, institutional and consumer pesticide products, in-can processes and products to control the growth of bacteria and fungi. For effective preservation, add UCARCIDE™ 50 Antimicrobial to the product formulation at a rate of 0.02% to 0.2% (200 to 2000 ppm) based on the water content of the product (0.2 to 2.0 grams UCARCIDE™ 50 Antimicrobial /Kg water content). Mixuniformly.

When used as an in-can preservative in which paints may be applied in a residential setting, the maximum application rate for paints is 100 ppm.

When used in diluted spray, full personal protective equipment is required.