



WATER SCIENCE TECHNOLOGIES LLC
5520 PARKWOOD CIRCLE
BESSEMER, AL 35022

K-BAC® 1020

DBNPA

A MICROBIOCIDAL BACTERICIDE, FUNGICIDE, ALGAECIDE AND SLIMICIDE, USED IN TREATING RECIRCULATING COOLING WATER IN INDUSTRIAL COOLING SYSTEMS, PAPER MILLS, BREWERY PASTEURIZER WATER, METALWORKING CUTTING FLUIDS, NON-POTABLE REVERSE OSMOSIS SYSTEMS, ENHANCED OIL RECOVERY SYSTEMS, AIR-WASHER SYSTEMS, INDUSTRIAL PRESERVATION APPLICATIONS AND PUBLICLY-OWNED TREATMENT WORKS.

ACTIVE INGREDIENT:	2,2-Dibromo-3-nitropropionamide.....	20%
OTHER INGREDIENTS:	80%
TOTAL:	100%

10 pounds K - BAC 1020 liquid per gallon.

KEEP OUT OF REACH OF CHILDREN DANGER

FIRST AID

If in eyes:

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. Call a poison control center or doctor for treatment advice.

If inhaled:

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

If swallowed:

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.

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

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage.

See side panels for additional precautionary statements and first aid.

MANUFACTURED FOR:
WATER SCIENCE TECHNOLOGIES LLC
5520 PARKWOOD CIRCLE
BESSEMER, AL 35022
PHONE: 866-284-9244

EPA Reg. No. 88714-2
EPA Est. No. 74922-GA-01

NET CONTENTS: ___ GALS.

Transportation Emergency (Spill) Tel: 800-255-3924 ChemTel

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

CORROSIVE
CAUSES IRREVERSIBLE EYE DAMAGE
MAY BE FATAL IF SWALLOWED
HARMFUL IF INHALED OR ABSORBED THROUGH SKIN
CAUSES SKIN BURNS
PROLONGED OR FREQUENTLY REPEATED SKIN CONTACT MAY CAUSE ALLERGIC REACTIONS IN SOME INDIVIDUALS

Do not get in eyes, on skin, or on clothing. In case of contact immediately rinse skin with plenty of water. Get medical attention if irritation persists. Use with adequate ventilation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and wash clothing before reuse.

PERSONAL PROTECTION EQUIPMENT (PPE):

- Applicators and other handlers must wear:
- Coveralls worn over long sleeved shirt and long pants.
- Chemical resistant footwear plus socks.
- Goggles or face shield.
- Chemical-resistant gloves (such as barrier laminate, butyl rubber, neoprene rubber, nitrile rubber, polyvinyl chloride (PVC and Viton).
- For mixing/loading: Wear a chemical resistant apron
- For cleaning equipment: Wear a chemical resistant apron

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions exist for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should wash hands before drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove personal protective equipment immediately after handling this product. Wash outside of gloves before removing. As soon as possible wash thoroughly.

General Precautions and Restrictions

Do not apply this product in a way that will contact workers or other persons.

ENVIRONMENTAL HAZARDS

This product is toxic to fish and aquatic organisms. Do not contaminate water by cleaning of equipment or disposal of waste. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

CHEMICAL AND PHYSICAL HAZARDS

Reaction with strong reducing agents may be explosive. Avoid misting

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE

Store in a dark, cool, dry, well-ventilated area, not above 104°F (40°C), in well-closed original containers, away from energy sources, combustible organic materials, oxidizers and moisture.

DISPOSAL

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER HANDLING AND DISPOSAL

{For containers 50 pounds or less}

Container Handling: Nonrefillable container. Do not reuse or refill this container. Triple rinse (or equivalent) promptly after emptying. Triple rinse as follows: Empty remaining contents into application or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Then offer for recycling, if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

{For containers greater than 50 pounds}

Container Handling: Nonrefillable container. Do not reuse or refill this container. Triple rinse (or equivalent) promptly after emptying. Triple rinse as follows: Empty remaining contents into application or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Then offer for recycling, if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

SPILLS

When handling or dealing with spills, use impact-resistant goggles with side shields, or face shield; wear body-covering clothes, including impervious rubber gloves and boots; use a respirator if misting occurs. Cover wet spills with 10% sodium bicarbonate solution, water and then an inert absorbent before sweeping up and disposing as described for pesticide disposal. If drum contents are contaminated or decomposing, isolate unsealed drum in the open or in a well-ventilated area: flood with 10% sodium bicarbonate solution and large volumes of water if necessary.

KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE TO MAINTAIN PRODUCT QUALITY, STORE IN THE DARK AT TEMPERATURES BELOW 104°F (40°C). DO NOT SHIP WITH FOOD, FEEDS, DRUGS, OR CLOTHING DO NOT SMOKE, DRINK, OR EAT WHEN HANDLING

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. **Read entire label and use strictly in accordance with precautionary statements and directions.**

DIRECTIONS FOR TREATING INDUSTRIAL RECIRCULATING COOLING WATER IN INDUSTRIAL COOLING SYSTEMS

NOTE: Add K - BAC 1020 separately to the system. Do not mix it with other additives, so as to avoid decomposition of K - BAC 1020 due to the high pH of many additive formulations.

Add K - BAC 1020 to the basin (or any other point of uniform mixing). Addition should be made via a metering pump; it may be continuous or intermittent, depending on the severity of the contamination when treatment is begun, and the in-system retention time. Optimum performance with this product is achieved by continuous or intermittent treatment. If "shock" treatment is used, the blow down should be discontinued for 24-48 hours.

FOR CONTROL OF BACTERIA

Add 0.00095-0.0095 gallons of K - BAC 1020 / 1000 gal. of water in the system depending on the severity of contamination.

INTERMITTENT OR SLUG METHOD

Initial Dose: When the system is noticeably fouled, add 0.0048-0.0095 gal. of K - BAC 1020 / 1000 gal. of water in the system. Repeat until control is achieved.

Subsequent Dose: When microbial control is evident, add 0.0024-0.0095 gal. of K - BAC 1020 / 1000 gal. of water in the system every 4 days, or as needed to maintain control. Badly fouled systems must be cleaned before treatment is begun.

CONTINUOUS FEED METHOD

Initial Dose: When the system is noticeably fouled, add 0.0048-0.0095 gal. of K - BAC 1020 / 1000 gal. of water in the system.

Subsequent Dose: Maintain this level by pumping a continuous feed of 0.00095-0.0048 gal. of K - BAC 1020 / 1000 gal. of water in the system lost by blow down. Badly fouled systems must be cleaned before treatment is begun

FOR CONTROL OF FUNGI AND ALGAE

Add 0.029-0.095 gallons of K - BAC 1020 / 1000 gal. of water in the system, depending on the severity of contamination.

INTERMITTENT OR SLUG METHOD

Initial Dose: When the system is noticeably fouled, add 0.048-0.095 gal. of K - BAC 1020 / 1000 gal. of water in the system. Repeat until control is achieved.

Subsequent Dose: When microbial control is evident, add 0.029-0.095 gal. of K - BAC 1020 / 1000 gal. of water in the system daily, or as needed to maintain control. Badly fouled systems must be cleaned before treatment is begun.

CONTINUOUS FEED METHOD

Initial Dose: When the system is noticeably fouled, add 0.048-0.095 gal. of K - BAC 1020 / 1000 gal. of water in the system.

Subsequent Dose: Maintain this treatment level by pumping a continuous feed of 0.029-0.095 gal. of K - BAC 1020 / 1000 gal. of water in the system per day. Badly fouled systems must be cleaned before treatment is begun.

DIRECTIONS FOR TREATING PULP AND PAPER MILL SYSTEMS

NOTE: Add K - BAC 1020 separately to the system. Do not mix it with other additives, so as to avoid decomposition of K - BAC 1020 due to the high pH of many additive formulations. For the control of slime-forming bacterial, fungal, and yeast growth in pulp, paper and paperboard mills add K - BAC 1020 at levels of 0.15-0.50 lb./ ton (dry) of pulp or paper produced. Addition can be continuous or intermittent, depending upon the type of system and the severity of contamination. Addition is via a metering pump at a point in the system that will ensure uniform distribution of K - BAC 1020 in the mass of fiber and water, such as the beaters, Jordan inlet or discharge, broke chests, furnish chests, save-alls and white-water tanks. **Heavily fouled systems** must first be boiled out, then treated with 0.15-0.35 lb. of K - BAC 1020 / ton (dry) of paper or pulp as necessary for control. **Moderately fouled systems** should be treated continuously with 0.35-0.50 lb. of K - BAC 1020 / ton (dry) of paper or pulp until the slime accumulation is controlled. Subsequent rates can then be reduced to 0.15-0.35 lb. of K - BAC 1020 / ton (dry) of paper on a continuous or intermittent basis as needed for control. Dislodged slime may cause breaks in the paper and a clean-up of the paper machine may be advisable.

Slightly fouled systems should be treated continuously with 0.15-0.35 lb. of K - BAC 1020 / ton (dry) of paper or pulp, until the slime is controlled, then added on an intermittent basis to maintain control.

DIRECTIONS FOR TREATING NON-POTABLE REVERSE OSMOSIS SYSTEMS

For controlling bacteria, fungi and algae slimes in non-potable Reverse Osmosis systems and peripheral equipment, add K - BAC 1020 to the system inlet water or before any other contamination area ahead of the Reverse Osmosis unit. K - BAC 1020 should be added with a metering pump on an intermittent basis depending on the severity of contamination and the guidelines specified by the membrane manufacturer for K - BAC 1020.

Add K - BAC 1020 at the rate of 0.01 to 1.0 lbs. (1 to 120 ppm) per 1000 gal. of feed water. During use of K - BAC 1020 both permeate and reject waters should be directed to the drain. Once treatment is completed, rinsing with feed water should continue until conductivity values in the permeate are at or below values before treatment with K - BAC 1020. Badly fouled systems must be cleaned before treatment is begun.

FOR CONTROL OF BACTERIA

Initial Dose: When the system is noticeably fouled, add K - BAC 1020 at the rate of 0.05 to 0.1 lb. (6 to 12 ppm) per 1000 gal. of feed water. Minimum treatment intervals should be 15 minutes. Repeat until control is achieved or as specified by guidelines recommended by the membrane manufacturer.

Subsequent Dose: When microbial control is achieved, add K - BAC 1020 at the rate of 0.025 to 0.1 lb. (3 to 12 ppm) per 1000 gal of feed water as needed to maintain control or as specified by guidelines recommended by the membrane manufacturer.

Subsequent Dose: When microbial control is achieved, add K - BAC 1020 at the rate of 0.025 to 0.1 lb. (3 to 12 ppm) per 1000 gal of feed water as needed to maintain control or as specified by guidelines recommended by the membrane manufacturer.

FOR CONTROL OF FUNGI AND ALGAE

Initial Dose: When the system is noticeably fouled, add K - BAC 1020 at the rate of 0.5 to 1.0 lb. (60 to 120 ppm) per 1000 gal of feed water. Minimum treatment intervals should be 15 minutes. Repeat until control is achieved or as specified by guidelines recommended by the membrane manufacturer.

Subsequent Dose: When microbial control is achieved, add K - BAC 1020 at the rate of 0.3 to 1.0 lb. (36 to 120 ppm) per 1000 gal of feed water as needed to maintain control or as specified by guidelines recommended by the membrane manufacturer.

DIRECTIONS FOR TREATING METALWORKING FLUIDS CONTAINING WATER

K - BAC 1020 is effective in metalworking fluid concentrates which have been diluted in water at ratios of 1:100 to 1:4. For controlling (or inhibiting) the growth of bacteria, fungi and yeasts that may deteriorate metalworking fluids containing water, add this product to the fluid in the collection tank. Additions should be made with a metering pump.

Initial or Slug Dose: When the system is noticeably fouled, add K - BAC 1020 at the rate of 0.25 gal (2.65 lbs.) per 1000 gal. of metalworking fluid in the system. Repeat until control is achieved.

Subsequent Dose: When microbial control is evident, add K - BAC 1020 at the rate of 0.1 to 0.2 gal. (1.06 to 2.12 lbs.) per 1000 gal. of metalworking fluid per day, or as needed to maintain control. Additions of K - BAC 1020 product can be made continuously or intermittently. Slug the system as required.

DIRECTIONS FOR TREATING BREWERY PASTEURIZER WATER

For controlling (or inhibiting) the growth of bacteria, fungi and yeasts in brewery pasteurizing water systems, add K - BAC 1020 at a point in the system to ensure uniform mixing.

Initial or Slug Dose: When the system is noticeably fouled, add K - BAC 1020 at the rate of 0.25 gal. (2.65 lbs.) per 1000 gals of water in the system. Repeat until control is achieved.

Subsequent Dose: When microbial control is evident, add K - BAC 1020 at the rate of 0.1 to 0.2 gal. (1.06 to 2.12 lbs.) per 1000 gals of water per day, or as needed to maintain control. Additions of K - BAC 1020 product can be made continuously or intermittently. Slug the system as required. Badly fouled systems must be cleaned before treatment is begun.

DIRECTIONS FOR TREATING ENHANCED OIL RECOVERY SYSTEMS

NOTE: Add K - BAC 1020 separately to the system. Do not mix it with other additives, so as to avoid decomposition of K - BAC 1020 due to the high pH of many additive formulations. Addition of K - BAC 1020 may be made at the free water knockouts, before or after the injection pumps and injection well headers. For controlling slime-forming bacteria, sulfide-producing bacteria, yeasts, and fungi in oil field water, polymer or micellar floods, water-disposal systems, or other oil field water systems, add 1-80 ppm K - BAC 1020 (0.1-6.4 gal. of K - BAC 1020 per 2400 barrels of water) depending on the severity of contamination. Additions should be made with a metering pump either continuously or intermittently.

CONTINUOUS FEED METHOD

When the system is noticeably fouled, add 10-80 ppm K - BAC 1020 (0.8-6.4 gal. of K - BAC 1020 per 2400 barrels of water) continuously until the desired degree of control is achieved. Subsequently, treat with 1-15 ppm K - BAC 1020 (0.1-1.2 gal. of K - BAC 1020 per 2400 barrels of water) continuously or as needed to maintain control.

INTERMITTENT OR SLUG METHOD

When the system is noticeably fouled or to maintain control of the system, add 10-80 ppm K - BAC 1020 (0.8-6.4 gal. of K - BAC 1020 per 2400 barrels of water) intermittently for 4-8 hours per day and from 1-4 times per week, or as needed depending on the severity of contamination.

NOTE: For control of bacteria, yeast, and fungi in aqueous solutions of biopolymer used in flooding operations, add 15-80 ppm K - BAC 1020 (1.2-6.4 gal. of K - BAC 1020 per 2400 barrels of water). Additions of K - BAC 1020 should be made with a metering pump immediately after preparation of the aqueous biopolymer solution to reduce loss of viscosity.

DIRECTIONS FOR TREATING AIR-WASHER SYSTEMS

Add 0.0015-0.095 gallons K - BAC 1020 / 1000 gal of water in the system, depending on the severity of contamination, to control slime-forming bacteria and fungi in industrial air washing systems.

Intermittent or Slug Method

Initial Dose: When the system is noticeably fouled, add 0.003-0.095 gal. K - BAC 1020 / 1000 gal. of water in the system. Repeat until control is achieved.

Subsequent Dose: When microbial control is evident, add 0.0015-0.047 gal K - BAC 1020 / 1000 gal. of water in the system every 2 days, or as needed to maintain control. Badly fouled systems must be cleaned before treatment is begun.

CONTINUOUS FEED METHOD

Initial Dose: When the system is noticeably fouled, add 0.003-0.095 gal K - BAC 1020 / 1000 gal. of water in the system.

Subsequent Dose: Maintain this level by pumping a continuous feed of 0.0015-0.047 gal. K - BAC 1020 / 1000 gal. of water in the system per day. Badly fouled systems must be cleaned before treatment is begun.

NOTE: For use only in industrial air-washer systems that maintain effective mist eliminating components.

DIRECTIONS FOR INDUSTRIAL PRESERVATION APPLICATIONS

K - BAC 1020 may be used to reduce microbiological contamination in raw materials and/or products such as: aqueous paints and coatings, polymers, slurries, adhesives, latex and resin emulsions, sizing, caulk, process water, along with specialty industrial products including: inks, polishes, waxes, detergents, and cleansers.

TO REDUCE MICROBIOLOGICAL CONTAMINATION

Add K - BAC 1020 to the material or product at a concentration of 25 to 2,000 ppm by weight. This concentration is equivalent to 2.8 to 224.0 fluid ounces K - BAC 1020 per 1,000 gal. or 21.4 to 1,712.0 milliliters K - BAC 1020 per 1,000 liters. The required concentration will depend on the material being treated and the level of contamination present.

DIRECTIONS FOR TREATING PUBLICLY-OWNED TREATMENT WORKS TO CONTROL COLIFORM AND OTHER BACTERIA

Add K - BAC 1020 at a concentration of 1.0 to 10.0 ppm by weight of water being treated, depending on the severity and contamination in the system. Addition should be CONTINUOUS and should be made with a metering pump at a point in the system where mixing will be rapid and thorough. Add K - BAC 1020 to the system in a location where contact time will be 30 minutes or greater before reaching the outfall.

TO USE AS A CO-TREATMENT WITH CHLORINE

Add 0.4 - 1.5 ppm K - BAC 1020 by weight of water treated. Chlorination should result in a minimum detectable residual (i.e., greater than zero but less than the NPDES permit level) Addition should be CONTINUOUS and made at a point just after initial chlorine mixing. Rapid mixing is necessary for maximum effectiveness. K - BAC 1020 should be added at a location where a contact time of 10 minutes or longer will be provided before reaching the outfall.

DIRECTIONS FOR TREATING OILFIELD AND PETROCHEMICAL SYSTEMS

K - BAC 1020 may be used either in slug treatment or in continuous application. Dosages may vary from as much as 200 ppm of K - BAC 1020 in slug application to 10 to 50 ppm of K - BAC 1020 in continuous treatment (1/4 pint K - BAC 1020 per 1,000 gal. of water equals approximately 30 ppm).

A typical slug treatment is to add 1 pint of K - BAC 1020 per 1,000 gal. at intervals as needed to prevent growth of microbial slime. Badly fouled systems may be slug treated to establish control, followed by continuous treatment to maintain control.