



VERICIDE BRONOPOL SOLUTION EPA REGISTRATION NO. 67869-38

DESCRIPTION	<p>VERICIDE BRONOPOL SOLUTION is a liquid microbiocide for use in controlling the growth of slime forming, spoilage, odor causing and corrosion inducing bacteria and algae in industrial application. Vericide Bronopol Solution can be dosed directly either by open pouring (not cooling water treatment) or by metered pump. For product preservation Vericide Bronopol Solution is best added after any heating stage or when the product has cooled below 40° C. Not for the control of algae in the State of California. Chemically, VERICIDE BRONOPOL SOLUTION is a 10% solution of 2-Bromo-2-Nitro-1, 3-Propanediol (CAS# 52-51-7) and 1,2-Propanediol (CAS# 57-55-6) and water.</p> <p>SYNONYMS:..... 2-Bromo-2-Nitro-1, 3-Propanediol CHEMICAL FAMILY:N/A MOLECULAR FORMULA:.....MIXTURE MOLECULAR WEIGHT:.....N/A</p>
TYPICAL PROPERTIES	<p>APPEARANCE AND ODOR:.....Colorless to light yellow liquid with a characteristic odor. BOILING POINT:Similar to water MELTING POINT:.....Not Applicable VAPOR PRESSURE:.....55 mmHg @ 40°C SPECIFIC GRAVITY:.....1.1 VAPOR DENSITY:.....(air=11) Similar to water PERCENT VOLATILE (BY WEIGHT):72 pH:.....4-7 SATURATION IN AIR (PERCENT BY VOLUME):...Unknown EVAPORATION RATE:.....Unknown SOLUBILITY IN WATER:.....0.22g/100ml (active)</p>
REGISTRATION & APPROVALS	<p>VERICIDE BRONOPOL SOLUTION is registered by the U.S. Environmental Protection Agency (EPA Registration No. 67869-38) as a product to inhibit the growth is a liquid microbiocide for use in controlling Industrial Recirculating Water Cooling Towers and Evaporative Condensers, Industrial Process Water, Oil and Gas Fluids, Oil Process Waters, Oil and Gas Pipeline and Tank Maintenance, Metal working Fluids, Paper Mill Process Water Systems, Paper Mills – Bulk Pulp, Industrial and/or Commercial Air Washers, Air Conditioners and Humidifying Systems, Adhesives, Absorbent Clays, Starch, Pigment and Mineral Slurries, Paints and other Emulsion Systems, Water Based Printing Inks and Fount Solutions.</p> <p>VERICIDE BRONOPOL SOLUTION (2-Bromo-2-Nitro-1, 3-Propanediol; CAS# 52-51-7) has FDA approval under 21 CFR 175.105, 176.170, 176.300.</p>

REACTIVITY DATA	<p>Stability Data: Stable</p> <p>Incompatibility Data: Amines, Metals, Strong Alkalies</p> <p>Conditions/Hazards to Avoid: Alkalies, Heat</p> <p>Hazardous Decomposition/Polymerization: Hazardous polymerization will not occur</p> <p>Corrosive Properties: Corrosive to metal.</p> <p>Oxidizer Properties: Not an oxidizer</p> <p>Hazardous decomposition Products: Formaldehyde, bromine, oxides of carbon, oxides of nitrogen</p>
-----------------	--

HMIS RATINGS	<p>HMIS Ratings: Health - 3 Flammability - 1 Reactivity - 1</p> <p>Personal Protective Equipment = B</p> <p>Hazard rating scale: 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe</p>
--------------	---

DIRECTIONS FOR USE	<p>To control the growth of slime forming, spoilage, odor causing and corrosion inducing bacteria and algae in industrial applications. Vericide Bronopol Solution can be dosed directly either by open pouring (not cooling water treatment) or by metered pump. For product preservation Vericide Bronopol Solution is best added after any heating stage or when the product has cooled below 40° C.</p> <p>ADHESIVES: Add 1 to 5 pt of Vericide Bronopol Solution per 100 lb total formulation weight to any water to be incorporated into the formulation.</p> <p>ABSORBENT CLAYS: Impregnate absorbent clays by spraying or pouring 250 to 2000 ppm of Vericide Bronopol Solution (0.4 to 3.2 oz. av. per 100 pounds of clay).</p> <p>INDUSTRIAL AND/OR COMMERCIAL AIR WASHERS, AIR CONDITIONERS AND HUMIDIFYING SYSTEMS: For the control of bacterial and algal growth and to remove built up slime deposits. Shocks dosing is preferred and should be carried out into the water sump on a routine basis once per week or month. Heavily fouled systems may require twice weekly treatment. The initial dose of Vericide Bronopol Solution should be 45-ml/cubic meter or 3.8 pints/1000 gallons (equivalent to 50 ppm active ingredient). Subsequent dosing can be reduced by half. Intermittent treatment during regular maintenance and cleaning at a level to 100-ppm active ingredient is also recommended with a contact time of at least one hour.</p> <p>INDUSTRIAL RECIRCULATING WATER COOLING TOWERS AND EVAPORATIVE CONDENSERS: Vericide Bronopol Solution may be dosed directly into the sump or basin or added by a suitable chemical pump. Where metering pumps are used, these must be set to deliver the required dose within 1 hour. The dosing point should be located close to the outlet from the basin to insure rapid dispersal around the system. Do not apply by open pouring of the liquid. Shock dose Vericide Bronopol Solution once or twice weekly as a normal routine or more frequently where contamination is heavy. In heavily fouled systems, the tower should be drained and cleaned before treating. Vericide Bronopol Solution should be shocked dosed at 250 to 1000 ppm (2 pt to 8 pt per 1000 gallons) depending on the condition of the tower, the quality of raw water input and the amount of bleed off.</p> <p>INDUSTRIAL PROCESS WATER: For use in closed circuit machine cooling (injection moldings etc.) and stored (non-potable) water. To reduce the biofouling of pipework, heat exchangers, condensers tubes and minimize microbially produced corrosion. Shock dosing in the sump/tank of the process water system is preferred. In open systems shock dose once weekly to once monthly depending on the degree of contamination. Closed circuit systems require less frequent dosing. Dose initially at 500 ppm Vericide Bronopol Solution (4 pt/1000 gallons), when successful, lower to a</p>
--------------------	--

Cont. on page 3

minimum of 100 ppm. For intermittent treatment during routine maintenance use Vericide Bronopol Solution at 1000 ppm and a contact time of at least one hour.

METALWORKING FLUIDS: For use in soluble oils, semi-synthetic and synthetic fluids. Add directly to the sump and circulate for about one hour before shutdown. Vericide Bronopol Solution may be incorporated in metalworking fluid concentrate by the manufacturer who should ensure that any incompatibility will not affect efficacy. In diluted fluids 2500 to 10,000 ppm of Vericide Bronopol Solution is sufficient to control microbial growth (5 gallons of Vericide Bronopol Solution in 1000 gallons will give a dose level of 5000 ppm). For maintenance, add 1000-4000 ppm of Vericide Bronopol Solution loop system). Dose Vericide Bronopol Solution once to three times daily at 10 to 250 ppm in the process water depending on the complexity of the system, quality of raw paper and type and degree of contamination. This equates to 100 to 2500 ml (0.2 to 5 pt) per ton of finished paper or paperboard.

OIL AND GAS FLUIDS: For use in both terrestrial and offshore drilling muds and packer fluids, for the control of contamination and degradation of a wide range of gels and fluids including fracturing, enhanced oil recovery, injection, well squeezing, drilling, workover and completion fluids. Add Vericide Bronopol Solution at 500 to 1000 ppm (4 to 8 pt/1000 gallons or 0.18 to 0.36 pt per barrel). For well-squeezed fluids add Vericide Bronopol Solution at 250 to 2000 ppm (2 to 16 pt / 1000 gallons).

OIL PROCESS WATERS: For use in oil and gas well injection and formation waters. Vericide Bronopol Solution should be injected as a slug dose at any convenient point at 250 to 1000 ppm (2 pt to 8 pt /1000 gallons). A slug dose should be applied from once per week to once per month depending on the severity of contamination.

OIL AND GAS PIPELINE AND TANK MAINTENANCE: For use in water bottoms in crude and refined hydrocarbon storage tanks, piping and transportation systems. Inject Vericide Bronopol Solution directly into the water bottoms or pipeline, or add to the hydrocarbon phase. Treat once daily for pipeline maintenance to once every one to two months for both storage and transportation systems. Vericide Bronopol Solution should be applied to achieve 250-2000 ppm in the aqueous phase. Add higher concentrations to the hydrocarbon phase which will result in longer term protection by the gradual diffusion into the water. Dose will depend on the volume of crude or oil and the expected water fraction.

PAPER MILLS -BULK PULP: Add Vericide Bronopol Solution directly into the hydropulper, machine chest or stock chest. Apply Vericide Bronopol Solution once weekly to once daily at 500 to 2000 ppm (500 to 2000 ml per ton of stock or 4 to 16 pt / 1000 gallons) depending on the type and degree of contamination.

PAINTS AND OTHER EMULSION SYSTEMS: For the preservation of acrylic, styrene acrylic, polyvinyl acetate and other latex emulsion, latex emulsion based paints, photographic emulsion, silicone and other antifoam emulsion systems. Add Vericide Bronopol Solution at 1000 to 5000 ppm based on the final formulation volume (8 to 40 pt/1000 gallons).

STARCH, PIGMENT AND MINERAL SLURRIES: Apply Vericide Bronopol Solution to water based suspension concentrates at 1000 to 5000 ppm based on the final formulation volume (8 to 40 pt / 1000 gallons). Not for use in pigments in the State of California.

WATER BASED PRINTING INKS AND FOUNT SOLUTIONS: During the use of fountain solutions, shock dose Vericide Bronopol Solution at 500 to 1000 ppm (4 to 8 pt / 1000 gallons) depending on the contamination. Apply once weekly in the fount as a normal routine, or more frequently if required. For in-can preservation dose Vericide Bronopol Solution at 1000 to 5000 ppm based on the final formulation volume (8 to 40 pt / 1000 gallons).

ENVIRONMENTAL HAZARDS	<p>This pesticide is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or 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 sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA. Do not apply in marine and/or estuarine oil fields. Do not contaminate water by cleaning of equipment or disposal of waste.</p> <p>In Case of Chemical Emergency: Call CHEMTREC day or night for assistance and information concerning spilled material, fire, exposure and other chemical accidents. 800-424-9300.</p>
-----------------------	--

STORAGE	<p>Do not contaminate water, food or feed by storage or disposal. Keep away from heat.</p> <p>PESTICIDE STORAGE: Store in a cool dry place in tightly closed original containers. Store away from incompatible materials and separate from other pesticides, fertilizers, food and feed. Keep container tightly closed when not in use.</p>
---------	---

DISPOSAL	<p>CONTAINER DISPOSAL: Empty residue into application equipment. Triple rinse (or equivalent) then offer for recycling or reconditioning, or puncture. Dispose of container in a sanitary landfill, or by incineration, if allowed by State and local authorities. If burned, stay out of smoke.</p> <p>PESTICIDE 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 Environment Control Agency, or the Hazardous Waste Representative at the nearest EPA regional office for guidance.</p>
----------	---

PRECAUTIONARY STATEMENTS	<p>HAZARDS TO HUMANS AND DOMESTIC ANIMALS</p> <p>Corrosive. Causes eye and skin damage. Do not get in eyes, on skin or on clothing. Avoid breathing spray mists. Wear long sleeve shirt and long pants, socks plus shoes. Wear goggles or face shield and chemical resistant rubber gloves when handling. Do not apply this product in a way that will contact workers or other persons. Harmful or fatal if swallowed. May cause allergic skin reactions in certain individuals. Wash thoroughly with soap and water after handling. Discard clothing or other absorbent materials that have been heavily contaminated with this product's concentrate. Do not reuse them. Remove lightly contaminated clothing and wash separately from other laundry using detergent and hot water before re-use.</p> <p>Users should wash hands before eating, 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 PPE immediately after handling this product. Wash the outside of the gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.</p>
--------------------------	---

FIRST AID	<p>If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.</p> <p>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 for treatment advice.</p> <p>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.</p> <p>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 treatment advice. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p> <p>NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of</p>
-----------	--

PACKAGING	VERICIDE BRONOPOL SOLUTION is available in 540 pound drums and 2200 pound totes.
-----------	--

SHIPPING	Proper Shipping Name: Corrosive Liquid, Acidic, Organic, N.O.S. (Bronopol) Class/Division: 8 ID Number: Not applicable Packing Group: III
----------	--

NOTICE

Seller makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk of use and/or handling of this material when such use and/or handling is contrary to label instruction.

The information of this Data Sheet is offered solely for your information, consideration, and investigation and represents our current data and best opinion as to the proper use of this product under normal conditions. Any use of the product which is not in conformance with this Data Sheet or which involves using the product in combination with any other product or any other process is the responsibility of the user. This information is provided without warranties, either express or implied, and we assume no responsibility for the accuracy or completeness of the data contained herein.



For more information call: 1 800 778-5462 • FAX 1 412 331-7884
 Or write VERICHEM, 3499 Grand Avenue, Pittsburgh, Pennsylvania 15225

CHEMICAL SOLUTIONS FOR MICROBIOLOGICAL PROBLEMS