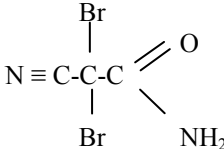


**VERICHEM****TECHNICAL
DATA SHEETS**

DBNPA DISPERSION

EPA Registration No. 67869-22

DESCRIPTION	Chemical Name: 2,2-Dibromo-3-nitrilopropionamide CAS #: 10222-01-2 Empirical Formula: C ₃ H ₂ Br ₂ N ₂ O Molecular Weight: 242 Structure: 
TYPICAL PROPERTIES	Appearance: Clear, light yellow to amber with a light, disinfectant odor Specific Gravity: 1.1 @ 25° C Vapor Pressure: Similar to water Boiling Point: N/A Flash Point: Not Flammable Solubility: Complete
GOVERNMENT APPROVALS	FDA: 21 CFR 175.105 ADHESIVE 21 CFR 176.170 PAPER 21 CFR 176.300 SLIMICIDES EPA: 67869-22
HANDLING AND PRECAUTIONS	Refer to DBNPA DISPERSION Material Safety Data Sheet
PACKAGING	DBNPA DISPERSION is available in 55 gallon (500 LBS NET) drums, 275 gallon (2645 LBS NET) totes, bulk load

**RECOMMENDED
USES AND
APPLICATIONS**

DBNPA DISPERSION controls bacteria, fungi, and yeasts in Industrial Process and Water Systems including: paper mills, industrial cooling water systems and in once-through fresh and sea water industrial cooling water systems; controls slime-forming in air washer systems. Controls the growth of microorganisms in preservation applications including; adhesives, glues and tackifiers preservation; construction products and household products; metal working fluids containing water; enhanced oil recovery; paints, coatings and stains; pigments, dyes and fillers suspensions; polymer dispersion and emulsions.

DIRECTIONS FOR USE

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

NOTE: ADD DBNPA DISPERSION SEPARATELY TO THE SYSTEM. DO NOT MIX IT WITH OTHER ADDITIVES, IN ORDER TO AVOID DECOMPOSITION OF DBNPA DISPERSION DUE TO THE HIGH pH OF MANY ADDITIVE FORMULANTS.

INDUSTRIAL PROCESS AND WATER SYSTEMS

FOR CONTROL OF BACTERIA

Add 0.00095-0.0095 gallon DBNPA Dispersion per 1,000 gallon of water in system, depending on severity of contamination.

Intermittent or Slug Method

Initial Dose: When system is noticeably fouled, add 0.0048-0.0095 gallon DBNPA Dispersion per 1,000 gall of water in the system every 4 days, or as needed to maintain control.

Subsequent Dose: When microbial control is evident add 0.0024-0.0095 gallon DBNPA Dispersion per 1,000 gallon 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 gallon DBNPA Dispersion per 1,000 gallon of water to the system. **Subsequent Dose:** Maintain this level by pumping a continuous feed of 0.00095-0.0048 gallon DBNPA Dispersion per 1,000 gallon of water to the system per day. Badly fouled Systems must be cleaned before treatment is begun.

FOR CONTROL OF FUNGI AND ALGAE

Add 0.0029-0.095 gallon DBNPA Dispersion per 1,000 gallon of water in system, depending on severity of contamination.

Intermittent or Slug Method

Initial Dose: When system is noticeably fouled, add 0.0048-0.0095 gallon DBNPA Dispersion per 1,000 gallon of water in the system every 4 days, or as needed to maintain control.

Subsequent Dose: When microbial control is evident add 0.0024-0.0095 gallon DBNPA Dispersion per 1,000 gallon 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 0.048-0.095 gallon DBNPA Dispersion per 1,000 gallon of water to the system. **Subsequent Dose:** Maintain this level by pumping a continuous feed of 0.029-0.095 gallon DBNPA Dispersion per 1,000 gallon of water to the system per day. Badly fouled Systems must be cleaned before treatment is begun.

INDUSTRIAL AIR-WASHER SYSTEMS

Add 0.0015-0.095 gallon DBNPA Dispersion per 1,000 gallon of water in the system, depending upon the severity of the contamination of control slime-forming bacteria and fungi in industrial air-washer systems.

Intermittent or Slug Method

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

INDUSTRIAL RECIRCULATING WATER COOLING TOWERS

Add DBNPA Dispersion to the basin (or ant other point of uniform mixing). Additions should be made with a metering pump; it may be continuous intermittent, depending on the severity of the contamination when treatment is begun, and the retention time of the system. Optimum performance with this product is attained by continuous or intermittent treatment. If "shock" treatment is used, the blowdown should be discontinued for 24-48 hours.

ONCE THROUGH INDUSTRIAL COOLING WATER SYSTEMS

For controlling microbiological growth in once through and closed cycle fresh and sea water cooling systems, cooling ponds, canals, and lagoons, add DBNPA Dispersion to the systems inlet water or before any other contaminated area in the system. Intermittent addition should be made with a metering pump at a level dependent on the severity of the contamination in the system.

Initial Dose: When the system is noticeably fouled, add 6-12 ppm DBNPA Dispersion based on the flow rate through the system. Additions should be for durations of at least 15 minutes, but with additions not being made for more than a total 4 hours per day.

Subsequent Dose: When microbial control is evident, add 3-12 ppm DBNPA Dispersion intermittently to maintain control. Addition intervals may vary but total time of additions should not exceed 4 hours per day. Badly fouled Systems must be cleaned before treatment is begun.

PAPER MILLS

For the control of bacterial, fungal, and yeast growths in pulp, paper and paperboard mills, add DBNPA Dispersion at the rate of 0.15-0.50 lb/ton of pulp or paper (dry basis).

Addition may be continuous or intermittent, depending upon the type of system and the severity of contamination. It should be made with a metering pump at a location that will insure uniform distribution of DBNPA Dispersion 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 should be boiled out, then treated with 0.15-0.35 lb DBNPA Dispersion per ton of paper (dry basis), as necessary for control. Moderately fouled systems should be treated continuously with 0.35-0.50 DBNPA Dispersion per ton of paper (dry basis) until the slime accumulation is controlled. Addition rates can then be reduces to 0.15-0.35 lb DBNPA Dispersion per ton 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 be advisable.

Slightly fouled systems should be treated continuously with 0.15-0.35 lb DBNPA Dispersion per ton of paper (dry basis) until the slime is controlled, then added on an intermittent basis to maintain control.

PAPER:

Use DBNPA Dispersion as a preservative for the control of bacteria and fungi in paper and paper additives. DBNPA Dispersion may be fed directly to the additive at the following recommended dosages.

Dose Ranges:	
Paper Auxiliaries/Additives	0.28 - 1.7%
Paper Slurries	0.4 - 0.6%

REVERSE OSMOSIS SYSTEM

DBNPA Dispersion may be used to control bacteria and reduce biofouling in industrial membrane systems (reverse osmosis, ultrafiltration, micro filtration). Acceptable applications include reverse osmosis for the production of boiler makeup water, rinsing of electric components, and industrial wastewater treatment. DBNPA Dispersion may be either slug fed or continuously fed to the feed streams of membrane systems. For slug feed, add between 50 and 70 ppm DBNPA Dispersion for 30 minutes to 3 hours. Frequency of addition should be every 5 days or as needed. When fed continuously, feed rate should be between 10 and 100 ppm DBNPA Dispersion. NOTE: For industrial systems in which DBNPA Dispersion residuals cannot be tolerated, DBNPA Dispersion must be slug fed. During and for 30 minutes to 1 hour following chemical addition, permeate and concentrate streams must be diverted to waste.

MATERIAL PRESERVATION

ADHESIVE, GLUES AND TACKIFIER PRESERVATION:

Add DBNPA Dispersion as an in-container preservative for the control of bacteria and fungi in water soluble and water dispersed adhesives. DBNPA Dispersion can be directly mixed homogeneous into dry glues before they are concentrated.

Dose Ranges (per 1000 gallons of material):	
Albumin Containing Glues.....	125-2000 ppm
Bone Glues	125-2000 ppm
Casein-Containing Adhesives	125-2000 ppm
Cellulose-Based Adhesives	125-2000 ppm
Dextrin-Based Adhesives	125-2000 ppm
Fish Glues	125-2000 ppm
Gelatin-Based Glues	125-2000 ppm
Leather Glues	125-2000 ppm
Plant Glues	125-2000 ppm
Polymer Dispersion-Based Adhesives	125-2000 ppm
Skin Glues	125-2000 ppm
Starch-Based Glues (Liquid)	125-2000 ppm
Starch-Based Glues (Solid)	125-2000 ppm

CONSTRUCTION PRODUCTS AND HOUSEHOLD PRODUCTS

Add DBNPA Dispersion for the control of bacteria and fungi in water soluble and water dispersed construction products. DBNPA Dispersion can be fed either directly to the finished construction or household product or to one of the raw materials used in the formulation of the construction and/or household product.

Dose Ranges (per 1000 gallons of material):	
Biopolymers (e.g. Xanthan).....	125-2000 ppm
Caulking Materials	125-2000 ppm
Mastics	125-2000 ppm
Ceramic Glazes.....	125-2000 ppm
Chemical Cleaning Solutions	125-2000 ppm
Cleaning Solutions	125-2000 ppm
Concrete and Masonry Additives	125-2000 ppm
Concrete.....	125-2000 ppm
Fire Extinguishing Medium.....	125-2000 ppm
Photographic Gelatins	125-2000 ppm
Plasters	125-2000 ppm
Polishes.....	125-2000 ppm
Rubber Systems.....	125-2000 ppm
Tints.....	125-2000 ppm
Wax Emulsions	125-2000 ppm

METAL WORKING FLUIDS CONTAINING WATER

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

Initial or Slug Dose: When the system is just noticeably fouled, add 0.25 gallon DBNPA Dispersion per 1,000 gallon of metalworking fluid to the system. Repeat until control is achieved. **Subsequent Dose:** When microbial control is evident, add 0.1-0.2 gallon DBNPA Dispersion per 1,000 gallon of metal working fluid per day, or as needed to maintain control. Additions can be made continuously or intermittently. Slug the system as required.

ENHANCED OIL RECOVERY SYSTEMS

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 DBNPA Dispersion (0.1-6.4 gallon DBNPA Dispersion 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 DBNPA Dispersion (0.8-6.4 gallon DBNPA Dispersion per 2400 barrels of water) continuously until the desired degree of control is achieved. Subsequently, treat with 1-15 ppm DBNPA Dispersion (0.1-1.2 gallon DBNPA Dispersion 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 DBNPA Dispersion (0.8-6.4 gallon DBNPA Dispersion per 2400 barrels of water) intermittently for 4-8 hours per day, and from 1-4 times per week, or as needed depending the severity of contamination.

Addition of DBNPA Dispersion may be made at the free knockouts, before or after the injection pumps and injection well headers.

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

PAINTS, COATINGS AND STAINS:

DBNPA Dispersion is generally incorporated directly into pigments and fillers, but it can also be first dissolved in a suitable solvent or added directly to the pre-heated binder systems. For best results, the preservative should be homogeneously incorporated into the stain or paint. Discoloration may occur, and should be evaluated.

Dose Ranges (per 1000 gallons of material):	
Alkyd Resin-Based Systems.....	125-2000 ppm
Casein-Systems	125-2000 ppm
Latex-Based Systems.....	125-2000 ppm
Oil-Containing Systems	125-2000 ppm
Synthetic Resin Dispersions.....	125-2000 ppm

PIGMENTS, DYES AND FILLER SUSPENSIONS:

Mix DBNPA Dispersion evenly with dispersing agents for processes where the temperature does not exceed 100°C. For all other processes, DBNPA Dispersion is metered directly into the material to be preserved during the cooling step after the temperature falls below 50°C and homogeneously distributed by stirring.

Dose Ranges (per 1000 gallons of material):

Calcium Carbonate Slurries.....	125-2000 ppm
Carbon Black Pigment Slurries	125-2000 ppm
Clay Slurries.....	125-2000 ppm
Iron Oxide Pigment Slurries.....	125-2000 ppm
Kaolin Slurries.....	125-2000 ppm
125-2000 ppm	
Organic Dyes and Pigment Slurries.....	125-2000 ppm
Other Filler Suspensions	125-2000 ppm
Starch Slurries.....	125-2000 ppm

POLYMER DISPERSIONS AND EMULSIONS:

DBNPA Dispersion is added immediately after the preparation of the polymer dispersion or emulsion during the cooling process. Losses of active ingredient caused by elevated temperatures should be avoided.

Dose Ranges: (Polymer Dispersions and Emulsions) (per 1000 gallons of material):

Acrylic-Systems.....	125-2000 ppm
Other Polymer Dispersions.....	125-2000 ppm
Polyester-Based Systems.....	125-2000 ppm
Polyurethane-Based Systems.....	125-2000 ppm
Polyvinyl acetate (PVA) Systems.....	125-2000 ppm
Styrene Butadiene Systems	125-2000 ppm
Vinyl Acrylic-Based Systems.....	125-2000 ppm

NOTICE
Seller makes no warranty, expressed or implied, concerning the use of this product other than that 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

C H E M I C A L S O L U T I O N S F O R M I C R O B I O L O G I C A L P R O B L E M S