

Cooling Water Treatment

Product Data

BIOSPERSE® 4405

MIRCIOBIOCIDE

GENERAL

BIOSPERSE 4405 is a unique, easy to handle liquid designed to provide broad spectrum control of bacteria in recirculating cooling water systems, air washer systems and evaporative condensers at low treatment levels.

BIOSPERSE 4405 is an effective microbiocide for controlling growth of microorganisms in industrial recirculating water systems such as pasteurizers.

BIOSPERSE 4405 is not to be used in potable water systems or where contamination of potable water can occur.

Drew Chemical Corporation offers the services of trained professional personnel to assist in the determination of levels and rates of treatment to provide an efficient and economical slime-control program.

CHEMICAL AND PHYSICAL PROPERTIES

Composition:	A blend of 2, 2-dibromo-3-nitropropionamide and solubilizing agents
Appearance:	Clear Yellow Liquid
Odor:	Pungent
Flash Point:	None
Freezing Point:	19°F (-7°C)
pH:	2.1
Specific Gravity @ 25°C:	1.07
Weight per U.S. Gallon:	9.0 lbs.
Water Solubility:	Complete in all proportions

ACCEPTED
 1757-75
 APR 22 1981
 Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No.

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BIO-DS-52

All statements, information and data presented herein are believed to be accurate and reliable but are not to be taken as a guarantee, express warranty or implied warranty of merchantability or fitness for a particular purpose, or representation, express or implied, for which seller assumes legal responsibility, and they are offered solely for your consideration, investigation and verification. Statements or suggestions concerning possible use of this product are made without representation or warranty that any such use is free of patent infringement and are not recommendations for, infringement of any patent.

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**Sensitivity to pH,
Temperature and
Ultraviolet light**

BIOSPERSE 4405 is biologically active in both acid and moderately alkaline pH ranges. Aqueous, alkaline solutions (pH 9) cause it to lose biological activity. The same response is produced by elevated temperatures and/or ultraviolet light. If acidic solutions (pH 3-4) are kept at room temperature and out of ultraviolet light, they are stable for at least seven days.

Compatibility:

Under conditions of actual use, BIOSPERSE 4405 is compatible with recirculating cooling water systems. Inactivation may occur in the presence of strong reducing agents, like mercaptobenzothiazole.

DOSAGE

The dosage of BIOSPERSE 4405 required for any specific application will depend upon a number of factors including: the nature and extent of the microbiological contamination, the type and volume of the system being treated, the degree of control desired, and retention time in the system. Where necessary, your Drew Representative will arrange for microbiological and chemical analyses, so that technical advice can be given concerning specific site problems.

Cooling Towers and Evaporative Condensers

Dosages for industrial recirculating water cooling towers will depend on the condition of the system prior to the initiation of treatment. Heavily contaminated systems should be cleaned prior to treatment. Apply BIOSPERSE 4405 to the cleaned system or when growth is first noticed according to the following schedule:

• Bacterial Control

•• Intermittent or Slug Method

••• Initial Dose: When the system is noticeably fouled, add 4.8 to 9.6 fluid ounces (44 - 88 ppm) BIOSPERSE 4405 per each 1000 gallons of water in the system. This dose may be repeated once, twice or three times weekly or as required to control the growth of slime-forming organisms.

•••• Subsequent Dose: When microbial control is evident, add 2.4 to 9.6 fluid ounces (22 - 88 ppm) BIOSPERSE 4405 per each 1000 gallons of water in the system every four days, or as needed to maintain good control.

Continuous Feed Method

Initial Dose: When the system is noticeably fouled, add 4.8 to 9.6 fluid ounces (44 - 88 ppm) BIOSPERSE 4405 per each 1000 gallons of water in the system. Subsequently, maintain this level by pumping a continuous feed of 0.48 - to 4.8 ounces (4.4 - 44 ppm) BIOSPERSE 4405 per each 1000 gallons of water added to the system as makeup.



**Algal Control
Intermittent or Slug Method**

Initial Dose: When the system is noticeably fouled, add 49 to 98 fluid ounces (440 - 880 ppm) BIOSPERSE 4405 per each 1000 gallons of water in the system. Repeat until control is achieved.

Subsequent Dose: When algal control is evident, add 29.6 to 98 fluid ounces (300 - 880 ppm) BIOSPERSE 4405 per each 1000 gallons of water in the system or as needed to maintain control.

Continuous Feed Method

Initial Dose: When the system is noticeably fouled, add 49 to 98 fluid ounces (300 - 880 ppm) BIOSPERSE 4405 per each 1000 gallons of water in the system.

Subsequent Dose: Maintain this treatment level by pumping a continuous feed of 29.6 to 98 fluid ounces (300 - 880 ppm) BIOSPERSE 4405 per each 1000 gallons of water added to the system as makeup.

Air Washers

In treating air washer systems, preclean by introducing a suitable detergent solution into the system and allow air washer to run with fan off for two hours. Flush. Check all nozzies and manually clean those that are plugged. Heavily contaminated systems should be cleaned prior to treatment. To control slime-forming bacteria and fungi, add 2 to 64 fluid ounces (16 - 500 ppm) BIOSPERSE 4405 per each 1000 gallons of water according to the following schedule:

Intermittent or Slug Method

Initial Dose: When the system is noticeably fouled, add 40 to 64 fluid ounces (312 - 500 ppm) BIOSPERSE 4405 per each 1000 gallons of water in the system. Repeat until control is achieved.

Subsequent Dose: When microbial control is evident, add 2 to 32 fluid ounces (16 - 250 ppm) BIOSPERSE 4405 per each 1000 gallons of water in the system every two days or as needed to maintain control.

Continuous Feed Method

Initial Dose: When the system is noticeably fouled, add 40 to 64 fluid ounces (312 - 500 ppm) BIOSPERSE 4405 per each 1000 gallons of water in the system.

Subsequent Dose: Maintain this level by pumping a continuous feed of 2 to 32 fluid ounces (16 - 250 ppm) BIOSPERSE 4405 per each 1000 gallons of makeup water that is added to the system.

Pasteurizers

Dosages for pasteurizers will vary depending upon the condition of the pasteurizer when treatment is begun and the retention time in the system. In



general, BIOSPERSE 4405 should be slug fed at dosages of 2.4 to 9.6 fluid ounces (22-88 ppm) per each 1,000 gallons of water in the system as needed.

FEEDING

BIOSPERSE 4405 may be fed directly from the drum or diluted with water and fed by any suitable feed system. BIOSPERSE 4405 should be dosed directly into the sump or basin or any other location where good distribution can be assured.

For pasteurizers, product should be added into the pre-cool reservoir or any other convenient point in the system which will allow good distribution.

The following construction materials are acceptable for feeding BIOSPERSE 4405:

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|-----------------------------|-------------------------------------|
| Pumps: | 1. Titanium |
| | 2. Solid Kynar* |
| | 3. Solid Teflon** |
| Gaskets: | 1. Chlorinated polyethylene |
| | 2. Viton** |
| | 3. Teflon |
| | 4. Asbestos |
| Pipes & Housing: | 1. Polypropylene lined pipe |
| | 2. Derakane resin lined pipe |
| | 3. Teflon lined pipe |
| | 4. Saran resin lined pipe |
| | 5. Braided reinforced Teflon hosing |

The use of uncoated or unlined stainless steel is not recommended.

When required, your Drew Service Engineer will arrange for microbiological and chemical analyses and offer technical advice concerning your specific problems.

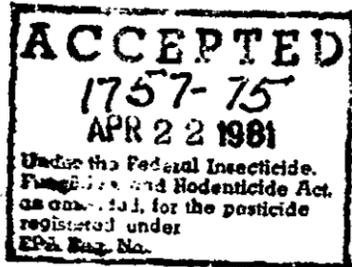
HANDLING PRECAUTIONS

Specific recommendations or precautions to be used are difficult to make unless the method of handling is known in detail. The following precautions are suggested.

1. Wear suitable eye protection, such as safety glasses with side shields.
2. Avoid skin contact. Wear clean clothing with long sleeves and legs. Use suitable impervious gloves and foot protection for extended or repeated exposure periods.

*Registered trademark of Pennsalt Chemicals Corp.

**Registered trademark of E. I. duPont de Nemours & Co.



BIOSPERSE® 44

WATER TREATMENT MICROBIOCIDE FOR INDUSTRIAL USE ONLY

This product is highly effective in controlling the growth of bacteria and algae in industrial recirculating water cooling towers and airwasher systems. The product also provides effective microbiocidal control in industrial recirculating water systems such as pasteurizers.

Active ingredient:

2,2-dibromo-3-nitropropionamide..... 2.5%

Inert Ingredients*..... 97.5%

*Inert ingredients include solubilizing and dispersing agents.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Refer to the Product Data Sheet for Biosperse 4405 for use directions and other technical data.

STORAGE AND DISPOSAL

STORAGE: Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. If plastic, do not reuse empty container.

DISPOSAL: Pesticide or rinsate that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticides or buried in a safe place away from water supplies. Triple rinse (or equivalent) all containers and for metal containers offer for recycling or reconditioning (for plastic containers dispose in an incinerator), or dispose in landfill approved for pesticide containers or bury in a safe place. Consult federal, state or local disposal authorities for approved alternative procedures.

KEEP OUT OF REACH OF CHILDREN

DANGER

STATEMENT OF PRACTICAL TREATMENT

FIRST AID: In case of eye contact, flush eyes immediately with plenty of water for at least fifteen (15) minutes and get medical attention. In case of skin contact, wash with soap and plenty of water. Wash contaminated clothing before reuse. Get medical attention if irritation persists.

If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Repeat until vomit is clear. Call a physician. Never give anything by mouth to an unconscious person.

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS



Drew Chemical Corporation
One Drew Chemical Plaza, Boonton New Jersey 07005

ES-648-4/81

EPA Reg. No. 1757-75
EPA Est. No. 1757-NJ-1
1757-NJ-2
1757-TX-1



ORTHO

CHEVRON[®] DIFOLATAN[®] Technical

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

DANGER

Corrosive to eyes and skin. Causes eye and skin damage. May cause allergic skin reactions. Do not get in eyes, on skin or on clothing. Wear goggles and rubber gloves when handling. Avoid breathing vapor or dust.

STATEMENT OF PRACTICAL TREATMENT

In case of eye contact, immediately wash eyes with fresh water for 15 minutes and see a doctor. For skin contact, remove contaminated clothing immediately and wash skin thoroughly with soap and water. See a doctor if irritation occurs or rash develops.

Note to Physicians: Emergency Information - call (415) 243-3737

ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not apply directly to lakes, ponds or streams.

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

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

FOR FORMULATION OF APPLICABLE DIFOLATAN FORMULATIONS ONLY.

Refer to specific Ortho form for details of formulation.

Active Ingredient
Chptafol
Inert Ingredients
cis-N-(1,1,2,2-tetrachloroethyl)bis[4-cyclohexene-1,2-dicarboximide
U.S. Pat. No. 3,178,447

By Wt.
97%
3%

KEEP OUT OF REACH OF CHILDREN

DANGER

SEE SIDE PANEL FOR ADDITIONAL
PRECAUTIONARY STATEMENTS

NET WEIGHT _____

Chevron Chemical Company

Ortho Agricultural Chemicals Division
San Francisco CA 94119 Richmond CA 94804
Product 3245 Made in U.S.A.
Form 9831 A
EPA Reg. No. 333-2249

STORAGE AND DISPOSAL

PROHIBITIONS

Do not use for watering, feeding or feeding by storage, disposal, or disposal equipment. Open dumping is prohibited.

STORAGE

Keep pesticide in original container. Do not put concentrate concentrate into food or drink containers. Store in cool, dry place. Protect from excessive heat. Do not store or transport near food or feed.

PESTICIDE DISPOSAL

Residue, spray mixture, or residue that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticides or buried in a safe place, away from water supplies.

CONTAINER DISPOSAL

Dispose of empty containers to approved Federal, State or local authorities under the Resource Conservation and Recovery Act.

GENERAL

Consult Federal, State or local disposal authorities for approved alternative procedures with or without open burning.

ACCEPTED

JUN 17 1981

CONDITIONS OF SALE: Chevron Chemical Company warrants that this product conforms to the chemical description on the label. Chevron Chemical Company neither makes nor authorizes any other representation to make any other warranty of performance, MERCHANTABILITY, or fitness for representation, or any other statement concerning this material.