

US EPA ARCHIVE DOCUMENT

226117
RECORD NO.

006315
SHAUGHNESSY NO.

REVIEW NO.

EEB REVIEW

DATE: IN 1-13-88

DATE: OUT 4-5-89

FILE OR REG. NO. 5785-IU

PETITION OR EXP. NO. _____

DATE OF SUBMISSION 6-27-88

DATE RECEIVED BY EFED 1-12-89

RD REQUESTED COMPLETION DATE 7-12-89

EEB ESTIMATED COMPLETION DATE 7-12-89

RD ACTION CODE 170

TYPE OF PRODUCT(S) : I, D, H, F, N, R, S Microbicide

DATA ACCESSION NO(S). _____

PRODUCT MANAGER (NO.) J. KEMPTER (32)

PRODUCT NAME(S) CN-501 TABLETS

COMPANY NAME GREAT LAKES CHEMICAL COMPANY

SUBMISSION PURPOSE PROPOSED REGISTRATION OF USES IN BREWERY
PASTEURIZERS AND RECIRCULATING COOLING WATER SYSTEMS

| SHAUGHNESSY NO. | CHEMICAL & FORMULATION(S) | % A.I. |
|-----------------|------------------------------------|-------------|
| <u>006315</u> | <u>BCDMH</u> | <u>55.5</u> |
| <u>081405</u> | <u>TRICHLORO-S-TRIAZINE TRIONE</u> | <u>28.9</u> |
| _____ | _____ | _____ |

MEMORANDUM

SUBJECT: Proposed registration of uses in brewery pasteurizers and recirculating cooling water systems of CN-501.

FROM: James W. Akerman, Branch Chief,
Ecological Effects Branch, EFED

TO: Jeff Kempter, (PM-32)
Disinfectants Branch, RD

The registrant, Great Lakes Chemical Company, has requested a registration for use in brewery pasteurizers and recirculating cooling water systems. In their submission they indicated that the basic toxicity testing was not required. They did, however, reference two aquatic studies that had been submitted in 1980, Hydrotech Chemical Corporation, the producer. These studies used a variety of forms of BCDMH (which included 1-Bromo-3-chloro-5,5-dimethylhydantoin) as the test chemical and were classified as fulfilling the requirements. Other registrants have submitted avian toxicity data to fulfill the guidelines for registration BCDMH, but Great Lakes, apparently, did not receive permission to use the data on the active BCDMH. The other chemical, Trichloro-S-triazine trione has been published as a Registration Standard and is therefore public domain. In order for EEB to evaluate the product CN-501 Tablets, the registrant will need to receive permission from the companies who paid for the avian toxicity studies with BCDMH or failing that, submit new studies to satisfy the data requirements. These data requirements are:

- 1.) Acute oral toxicity with an avian species, either a bobwhite or mallard duck.
- 2.) Dietary exposure with a bobwhite and a mallard.


March 6, 1969

NOTE TO: Barbara Pringle, PM Team-32
Antimicrobial Program Branch
Registration Division (H75050)

As per your request last week, I have examined the file for Dantobrom and found that the six basic studies are available for each of the active ingredients listed on the attached label. You also indicated that the registrant has submitted estuarine/marine studies to support the proposed once-through cooling water systems use.

To support the once-through use the estuarine/marine studies should be done on either the technical of each active ingredient or the end-use product (and residue analyses for active ingredients must be performed during the study(ies)). In addition, residue monitoring studies for freshwater and marine/estuarine use sites are required, and protocols for such studies must be approved by the Agency prior to study initiation. Also, further studies might be required, but this determination would be based on the results of the monitoring studies.

Please note that the above is based on a "quick review" of EEB files.


Norm Cook
RD Coordinator
EEB, EFED

DANTOBROM™ RW

DIRECTIONS FOR USE

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

RECIRCULATING

COOLING WATER SYSTEMS

DANTOBROM RW aids in the control of bacterial, fungal and algal slime in evaporative condensers, heat exchangers, water towers, influent systems, such as flow through filters, lagoons, etc. Industrial water scrubbing systems and brewery pasteurizers.

This product may be added to the systems either continuously or intermittently or as needed. The frequency of feeding and duration of the treatment will depend upon the severity of the problem.

BADLY FOULED SYSTEMS must be cleaned before treatment is begun.

FOR CONTROL OF BACTERIA AND FUNGI

INTERMITTENT OR SLUG METHOD

INITIAL DOSE: When the system is noticeably fouled, add 0.1 to 1.0 lbs. to 1000 gallons or 12 to 120 parts per million of the water in the system. Repeat until control is achieved.

SUBSEQUENT DOSE: When microbial control is evident, add 0.1 to 0.75 lbs. to 1000 gals. or 12 to 90 parts per million of water in the system every 3 days or as needed to maintain control.

CONTINUOUS FEED METHOD

INITIAL DOSE: When a system is noticeably fouled, add 0.1 to 1.0 lbs. to 1000 gals. or 12 to 120 parts per million of water in the system.

SUBSEQUENT DOSE: Continuously feed to maintain a dosage of 0.1 to 0.75 pounds to 1000 gallons or 12 to 90 parts per million of water in the system.

(Continued on Panel 4)

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

HARMFUL IF SWALLOWED. HIGHLY CORROSIVE.
Causes eye and skin damage. Irritating to nose and throat. Avoid breathing dust. Use with adequate ventilation. Do not get into eyes, on skin or clothing. Wear rubber gloves, chemical goggles and face shield when handling. Wash thoroughly after handling. Immediately remove contaminated clothing and wash before reuse.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. Do not discharge into lakes, streams, ponds or public water unless in accordance with NPDES permit. For guidance, contact your Regional Office of the EPA. Do not contaminate water by cleaning of container and equipment or disposal of wastes. Apply this pesticide only as specified on this label.

PHYSICAL AND CHEMICAL HAZARDS

CHEMICAL HAZARD: STRONG OXIDIZING AGENT.
Mix only with water. Use clean, dry utensils. Do not add this product to any dispersing device containing remnants of any other product. Such use may cause a violent reaction leading to fire or explosion. Contamination with moisture, organic matter or other chemicals may start a chemical reaction with generation of heat, liberation of hazardous gases and possible generation of fire and explosion. In case of contamination or decomposition, do not reuse container. If possible, isolate container in open air or well-ventilated area. Flood with large volumes of water, if necessary.

CONTENTS: BRIQUETTES

| | |
|--|------|
| Active Ingredients | 60.0 |
| 1-bromo-3-chloro-5,5-dimethylhydantoin | 27.4 |
| 1,3-dichloro-5,5-dimethylhydantoin | 10.6 |
| Inert Ingredients | 2.0 |

Available chlorine.....39.2
Net Weight.....39.9
EPA Reg. No. 6836-115 EPA Est. No. 6836-PA-1
Net Weight
(as marked on container)

KEEP OUT OF REACH OF CHILDREN

DANGER

STATEMENT OF PRACTICAL TREATMENT
For eye contact, flush eyes with large amounts of running water for at least 15 minutes. Hold eyelids apart to ensure rinsing of the entire surface of the eye and the inner corner. If irritation persists, get medical attention. Get medical attention immediately.
For skin contact, immediately wipe away excess material with a dry cloth. Wash skin with soap and water. Under a safety shower, wash affected areas thoroughly with large amounts of water, and soap if available, for at least 15 minutes. Get immediate medical attention. Discard or decontaminate clothing and shoes. If inhaled, remove from area to fresh air. If not breathing, clear airway and start mouth-to-mouth artificial respiration or use a bag-mask respirator. Get immediate medical attention. If victim is having trouble breathing, transport to medical care and, if available, give supplemental oxygen. If swallowed, immediately give several glasses of water. DO NOT induce vomiting. If vomiting occurs, give fluids again. Have physician determine if patient's condition allows induction of vomiting or evacuation of stomach. Do not give anything by mouth to an unconscious or comatose person. Get immediate medical attention.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

FOR CONTROL OF ALGAE

INTERMITTENT OR SLUG METHOD

INITIAL DOSE: When the system is noticeably fouled, add 0.1 to 1.0 lb. per 1000 gals. or 12 to 120 parts per million of water in the system. Repeat until control is achieved.

SUBSEQUENT DOSE: When algae control is evident, add 0.1 to 0.75 lbs. to 1000 gals. or 12 to 90 parts per million daily or as needed to maintain control.

CONTINUOUS FEED METHOD

INITIAL DOSE: When the system is noticeably fouled, add 0.1 to 1.0 lb. to 1000 gals. or 12 to 120 parts per million of water in the system. Repeat until control is achieved.

SUBSEQUENT DOSE: Continuously feed to maintain a dosage of 0.1 to 0.75 lbs. to 1000 gals. or 12 to 90 parts per million of water in the system.

AIRWASHERS

For use only in industrial airwasher systems that maintain effective mist eliminating components.

DANTOBROM RW controls slime forming bacteria, fungi and algae in industrial airwasher systems. Add DANTOBROM RW at the rate of 0.1 to 1.0 lb. (12 to 120 ppm) per 1000 gallons of water in the system, depending upon the severity of the contamination.

Control the application by measuring the free chlorine residual in the treated water. There is no need to exceed 1.0 ppm as free chlorine. Badly fouled systems must be cleaned before treatment is begun.

INTERMITTENT OR SLUG METHOD

INITIAL DOSE: When system is noticeably fouled, add 0.1 to 1.0 lb. to 1000 gals. or 12 to 120 parts per million of water.

SUBSEQUENT DOSES: When microbial control is evident, add 0.1 to 0.60 lbs. to 1000 gals. or 12 to 72 parts per million of water.

(Continued on Next Panel)

CONTINUOUS FEED METHOD

INITIAL DOSE: When system is noticeably fouled add to air washer sump or chill water sump to insure uniform mixing. Add 0.1 to 1.0 lb. to 1000 gals. or 12 to 120 parts per million of water.

SUBSEQUENT DOSE: When the microbial control is evident add 0.1 to 0.6 lbs to 1000 gals. or 12 to 72 part per million.

STORAGE AND DISPOSAL

STORAGE: Keep container tightly closed. Store in a dry place. Do not store at elevated temperature.

DISPOSAL: Do not contaminate water, food or feed by storage or disposal. Pesticide wastes are acutely hazardous and/or toxic. Improper disposal of excess pesticide, spray mixture or residue is a violation of Federal Law. If these wastes cannot be disposed of by use according to the label instructions, contact your State pesticide or environmental control agent or the hazardous waste representative at the nearest EPA regional office for guidance.

METAL AND PLASTIC CONTAINERS: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incinerate or burn, if allowed by state and local authorities. If burned, stay out of smoke.

FIBER DRUMS AND LINERS: Completely empty (rinse) by shaking and tapping sides and bottom to loosen clinging particles. Then dispose of liner and drum in a sanitary landfill or incinerate if allowed by state and local authorities. Do not reuse empty drum or liner.

FOR INDUSTRIAL USE ONLY

Technical advice regarding specific on-site problems is available from LONZA Material Safety Data Sheet relative to the use of this product is also available upon request.

ONCE-THROUGH INDUSTRIAL COOLING WATER SYSTEMS: For the control of algal, bacterial and fungal slimes in once-through and closed-cycle systems and sea water cooling systems; cooling tower canals; and lagoons add Dantobrom RW to the system inlet water or before any other contaminated area in the system.

LONZA

| | |
|---------------------|---|
| HEALTH | 3 |
| FLAMMABILITY | 1 |
| REACTIVITY | 1 |
| PERSONAL PROTECTION | |



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028501

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 13 1988

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Data Requirement for Dantobrom BTB

FROM: Curtis E. Laird, Fishery Biologist *(Curtis E. Laird 5-12-88)*
Ecological Effects Branch
Hazard Evaluation Division (TS-7690)

THRU: Norman J. Cook, Head-Section 2 *Norman J. Cook*
Ecological Effects Branch *5-12-88*
Hazard Evaluation Division (TS-7690)

And

[Signature]
James W. Akerman, Chief *JW/A*
Ecological Effects Branch
Hazard Evaluation Division (TS-769)

TO: Jeff Kempter, PM 32
Disinfectants Branch
Registration Division (TS 767C)

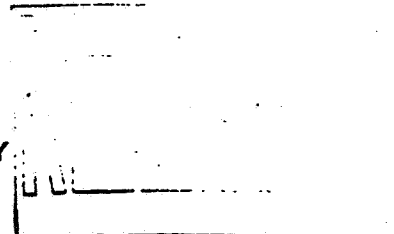
Ecological Effects Branch (EEB) needs the following studies
for recirculating cooling water systems and airwashers uses:

- a. Hydrolysis (§161-1); and
- b. Photolysis in water (laboratory) §161-2.

CC: Emil Regelman EAB/HED



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460



MAY 4 1988

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Data Requirements for Dantobrom BTB

FROM: Emil Regelman, Head
Environmental Chemistry Review Section #3
Exposure Assessment Branch

TO: Brigid Lowery
Management Support Staff
Hazard Evaluation Division (TS-769c)

THRU: Paul Schuda, Chief
Exposure Assessment Branch
Hazard Evaluation Division (TS-769c)

Having reviewed the submitted package for Dantobrom BTB, I would like to summarize EAB's position relative to this submission and anticipated data requirements:

1. The Dantobrom BTB package contained no 'data' (studies) upon which to evaluate the environmental fate relative to the proposed Indirect Discharge use (cooling towers). Anecdotal information provided with the package suggests that the degradation of different substituted hydantoins may vary widely.
2. The registrant apparently wishes to rely on existing data for other hydantoins. Data previously have been submitted to support the swimming pool use of 'halogenated' 5,5-dimethylhydantoin, including:
 - o 1-bromo-3-chloro-5,5-dimethylhydantoin
 - o 1,3-dichloro-5,5-dimethylhydantoin
 - o 1,3-dichloro-5-ethyl-5-methylhydantoin

Additionally, the following hydantoins were proposed for use in recirculating water treatment systems:

- o 1,3-bis(hydroxymethyl)-5,5-dimethylhydantoin
- o hydroxymethyl-5,5-dimethylhydantoin

3. The Registration Standard Science Chapter for Dantochlor was completed on June 18, 1985, assuming only the active ingredient 1,3-dichloro-5-ethyl-5-methylhydantoin. No data requirements were satisfied by that review.
4. The Confidential Statement of Formula shows four new chemicals, for which no chemical-specific data have yet been submitted. These are:
 - o 1,3-dibromo-5-ethyl-5-methylhydantoin
 - o 1-bromo-3-chloro-5-ethyl-5-methylhydantoin
 - o 1,3-dibromodimethylhydantoin
 - o 1-chloro-5-ethyl-5-methylhydantoin
5. The Confidential Statement of Formula fails to indicate the actual percentage composition of each a.i. component, as required.
6. The EAB review of May 12, 1987 identified the potential formation of highly toxic N-chloro-isopropylimine by the ring opening of bromo-chlorodimethylhydantoins in the presence of high chlorine levels.

Since the hydantoins are used primarily to 'deliver' bromine/chlorine at a controlled rate, EAB assumes that constant recharge of the cooling tower lagoon could result in the accumulation of significant quantities of a wide variety of degradates, which could subsequently be discharged into a holding area (pond).

To EAB, this burden of unknown levels of unknown components appears to be quite different from that conventionally seen for indirect discharge uses. Therefore, EAB cannot concur with the registrant's proposal to register Hydantoins as a 'class' of compounds. Rather, the following data will be required for each active ingredient, for use in cooling water towers:

- o 161-1 Hydrolysis (laboratory)
- o 161-2 Photolysis in Water (laboratory)
- o 162-3 Anaerobic Aquatic Metabolism (laboratory)
- o 162-4 Aerobic Aquatic Metabolism (laboratory)
- o 163-1 Adsorption/Desorption (laboratory, batch equilibrium) for both parent and major degradates
- o 164-2 Field Dissipation for Aquatic Impact Uses (dissipation from the outdoor holding pond following drainage of the cooling tower lagoon).
- o 165-4 Accumulation in Fish (laboratory)

CC: Curtis Laird, EEB/HED
Albin Kocialski, TOX/HED
Hank Jacoby, SIPS/HED
Jeff Kemper, RD
Lynn Bradley, RSERB/RD
Files, EAB

Screen

RECORD NO.

006315, 006317

028501

SHAUGHNESSY NO.

REVIEW NO.

EEB REVIEW

DATE: IN 4-8-88 OUT: 5-4-88

FILE OR REG. NO. 6336-RGL

PETITION OR EXP. NO. _____

DATE OF SUBMISSION _____

DATE RECEIVED BY HED 4-1-88

RD REQUESTED COMPLETION DATE 4-18-88

EEB ESTIMATED COMPLETION DATE 4-18-88

RD ACTION CODE/TYPE OF REVIEW Screen

TYPE PRODUCT(S): I, D, H, F, N, R, S Microbiocide

DATE ACCESSION NO (S). _____

PRODUCT MANAGER NO. J. Kempter (32)

PRODUCT NAME (S) Dantobrom BTB

COMPANY NAME Lonza, Inc.

SUBMISSION PURPOSE New Chemical Screen For Three New Hydantoin
Compounds Proposed For Use In Recirculating
Cooling Water Systems and Airwashers

SHAUGHNESSEY NO. CHEMICAL AND FORMULATION % A.I.

8

028501
006315
006317



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 4 1988

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Dantobrom BTB

FROM: Curtis E. Laird, Fishery Biologist *Curtis E. Laird 5-3-88*
Ecological Effects Branch
Hazard Evaluation Division (TS-769C)

THRU: Norman J. Cook, Head-Section 2 *Norman J. Cook 5-3-88*
Ecological Effects Branch
Hazard Evaluation Division (TS-769C)

and

James Akerman, Chief
Ecological Effects Branch
Hazard Evaluation Division (TS-769C)

TO: Jeff Kempter, Project Manager 32
Disinfectants Branch
Registration Division (TS-767C)

The EEB has completed a new chemical screen for three new chemicals proposed for use in recirculating cooling water systems and airwashers:

- (1) 1-Chloro-5-ethyl-5-methylhydantoin
- (2) 1,3-Dibromo-5-ethyl-5-methylhydantoin
- (3) 1-Bromo-3-chloro-5-ethyl-5-methylhydantoin.

In doing so, EEB determined the following:

- (1) The registrant has referenced data for the three similar, apparently, previously registered, chemicals. These are:
 - (a) 1-Bromo-3-chloro-5,5-dimethylhydantoin (Bromochlor)
 - (b) 1,3-Dichloro-5,5-dimethylhydantoin (Dantochlor)
 - (c) 1,3-Dibromo-5,5-dimethylhydantoin (Glychlor)

- (2) EEB was able to locate acceptable data for (1)(a) and (1)(b) above (i.e. Bromochlor and Dantochlor, respectively). However, we were unable to locate data for (1)(c) above (i.e. Glychlor).
- (3) In reviewing the files we also found acceptable data for: 1,3-Dichloro-5-ethyl-5-methylhydantoin. It appears these data are the registrant's, but said registrant did not reference them. Also, it appears this chemical is registered.

Relative to the above, EEB concludes the following:

- (1) The Glychlor data must be submitted for review to EEB;
- (2) If the registrant can, he should reference the data available for: 1,3-Dichloro-5-ethyl-5-methylhydantoin; and
- (3) If (1) and, possibly, (2) can be met, it appears enough toxicity data are available for EEB to address acute toxicity and risk concerns for the three new chemicals. However, if the end-use products are intended for use in estuarine/marine environments then the following studies are required to support registration:
 - a. The 96-hour LC₅₀ for sheepshead minnow; (§72-3)
 - b. The 96-hour LC₅₀ for shrimp; (§72-3) and
 - c. The 48-hour embryo-larvae or 96-hour shell deposition study for American Oyster. (§72-3)

Further, other studies may be required to support the proposed registration. This determination cannot be made until EEB has received and reviewed all the required acceptable data plus environmental fate data.