

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

APR 22 1997

Vulcan Chemical Technologies, Inc  
1902 Channel Drive  
West Sacramento, CA 95691

Subject Dura Klor  
EPA Registration No 21164-3  
Your Application Dated January 27, 1997

Attn Stephanie E Feekes  
Product Stewardship Coordinator

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable, subject to the following comments

- 1 Delete the food contact surface sanitizing claims, "CIP Systems in Dairy, Juice, Brewery, Beverage, and Food Processing Apply DURA KLOR less SG" or submit data to support it as indicated in DIS/TSS-4 enclosure
- 2 Move the 'Directions For Use' heading and the misuse statement "It is a the violation of federal law" and place directly above the statement "As a paper processing slimicide in white water systems" Increase the font size of the Directions For Use" heading

A stamped copy is enclosed for your records Submit one (1) copy of the finished printed label before this product is released for shipment

CONCURRENCES							
SYMBOL	7505W	.....	.....	.....	.....	.....	.....
SURNAME	D. L. ...	.....	.....	.....	.....	.....	.....
DATE	4/23/97	.....	.....	.....	.....	.....	.....

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If you have any question about the comments in this letter  
you should contact Drusilla Copeland at (703) 308-6224

Sincerely,



Robert Brennis  
Acting Product Manager (32)  
Regulatory Management Branch II  
Antimicrobials Division (7505W)

) Enclosure

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# DURA KLOR

A PRE-ACTIVATED AND STABILIZED SOLUTION OF SODIUM CHLORITE THAT PROVIDES A CONTROLLED RELEASE OF CHLORINE DIOXIDE AT THE POINT OF USE APPLICATION

### ACTIVE INGREDIENTS:

Sodium Chlorite	8.3%
INERT INGREDIENTS	91.7%
TOTAL	100.0%

EPA Reg No. 21164-3  
 EPA Est No. ■ 21164-CA-01  
 □ 5382-KS-01

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

### STATEMENT OF PRACTICAL TREATMENT

eyes: Flush with plenty of water. Call a physician immediately.  
 If on skin: Wash with plenty of soap and water. Call a physician immediately.  
 If swallowed: Drink promptly a large quantity of water. Do not induce vomiting. Avoid alcohol. Call a physician immediately.  
 NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

NET CONTENTS: \_\_\_\_\_ gal  
\_\_\_\_\_ liters

DOT SHIPPING NAME:  
 CHLORITE SOLUTION  
 8 (CORROSIVE LIQUID); UN 1908; PGIII

MADE IN U.S.A.  
 MANUFACTURED BY:

# Vulcan

Chemical Technologies, Inc.

1902 Channel Drive, West Sacramento, CA 95691

(916) 375-0167

ACCEPTED  
with COMMENTS  
to EPA Letter Dated:

APR 22 1997

Under the Federal Insecticide,  
 Fungicide, and Rodenticide Act  
 as amended, for the pesticides  
 registered under EPA Reg. No.

21164-3

97 FEB -5 A4:09

REC'D E1111/UPD02

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ACCEPTED  
with COMMENTS  
In EPA Letter Dated:  
APR 22 1997

**PRECAUTIONARY STATEMENTS  
CAUTION**

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**IRRITANT.** Harmful if swallowed. Causes eye irritation. Avoid contact with skin, eyes or clothing. Irritating to nose and throat. Avoid breathing spray mist. In case of contact, immediately flush eyes and skin with plenty of water. Get medical attention if irritation persists.

**ENVIRONMENTAL HAZARDS**

This product is toxic to fish. 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.

**PHYSICAL OR CHEMICAL HAZARDS**

DO NOT mix with acids or other chemicals except water. Mixing with acid or other chemicals may cause evolution of chlorine dioxide gas, which is poisonous and explosive.

Do not let spilled solution evaporate to dryness. If resultant residue contacts oxidizable or combustible materials, the mixture is easily ignited by heat or friction. This results in a fiercely burning fire, or in a confined space, a possible explosion. Examples of such materials are cloth, paper, wood, sawdust, hydrocarbons such as greases, oils, and solvents, rubber, leather, plastics, and organic substances in general; also sulfur, sulfides, powdered metals, phosphorous and ammonium compounds.

**EMERGENCY HANDLING**

In case of contamination or decomposition, do not reseal container. Isolate in an open, well-ventilated location. Flood with large volumes of water.

**DIRECTIONS FOR USE**

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

**STORAGE AND DISPOSAL**

**DO NOT CONTAMINATE WATER, FOOD OR FEED BY STORAGE OR DISPOSAL.**

**Storage:** Do not store this product with oxidizers, acids, reducing agents, or combustible materials. Store in a cool, dry well-ventilated location away from direct sunlight. Protect from freezing. Store upright and do not stack over two drums per pallet. A drum pump is recommended for transferring this material. Keep drums tightly closed when not in use. Store only in the original containers or approved storage containers and guard against cross-contamination with other pesticides, fertilizers, food and feed. Do not reuse containers.

**Pesticide Disposal:** Wastes resulting from this product may be disposed of on site or at an approved waste disposal facility.

**Container Disposal:** Triple rinse (or equivalent) all containers and offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

**Spills:** In case of spills, dilute with large quantities of water and flush to a designated sewer in accordance with all applicable federal, state and local regulations. Alternatively, this product may be flushed to a collection basin or container for disposal. Comply with all applicable federal, state and local regulations regarding spill notification requirements.

**•AS A PAPER PROCESSING SLIMICIDE IN WHITE WATER SYSTEMS:** This product has FDA GRAS status when used as a slimicide in the manufacture of paper and paperboard that contacts food (21 CFR 186.1750)

**APPLICATION DIRECTIONS:**

(1) If the pH of the white water is below 7.0, use 5 to 15 gallons of DURA KLOR per 100,000 gallons of white water to be treated, which corresponds to an active ingredient concentration of 3 to 9 ppm. Alternatively, use 2 to 4 gallons DURA KLOR per 100 tons of paper produced, which correlates to a dosage rate of 5 to 15 ppm active ingredient.

(2) If the pH of the white water is above 7.0, then add 0.5 gallon of 5% to 6% sodium hypochlorite as an activator with each 4 gallons of DURA KLOR.

Continuous proportioning of feed via a suitable metering pump is recommended for best results. In many cases, the amount can be reduced after the system is clean.

**•FOR ENCLOSED AND RECIRCULATING WATER SYSTEMS:**

DURA KLOR should be injected at a point in the system where it will undergo uniform mixing. It is recommended that a slow feed rate be applied directly into the suction side of the system pump. Badly fouled systems should be clean prior to treatment.

(1) If the pH of the water system is less than 5.5, DURA KLOR should be applied as follows:

**INITIAL DOSE --** When the system is noticeably fouled, apply 1 gallon of DURA KLOR per 10,000 gallons of water in the system. Repeat dosage every 24 hours until acceptable microbiological quality is achieved. Usually 3 to 6 applications will suffice.

**SUBSEQUENT DOSE --** After acceptable microbiological quality is achieved, the system may be maintained by adding 3 doses of DURA KLOR every 14 to 24 days or as often as required for control. Each dose consists of 1 gallon of DURA KLOR per 10,000 gallons water in the system repeated every 24 hours for a total of 3 additions. Treatment may then be discontinued for another 14 to 24 days or until fouling again becomes evident.

(2) If the pH of the water system is greater than 5.5, DURA KLOR should be applied as follows: Dilute each gallon of DURA KLOR to be added with 5 to 10 gallons water then adjust this mixture to a mildly acidic pH (2.5 to 5.5) with careful additions of a dilute (10% by weight maximum) acid/water mixture (e.g. muriatic, phosphoric, acetic, citric); an acidic mixture containing corrosion inhibitors, descalers, surfactants, or sequestrants; an aqueous solution of sodium hypochlorite; or an aqueous solution of hypochlorous acid. This pH adjusted pre-mix should then be added immediately to the given process system at the above indicated dose rate of 1 gallon acidified or activated DURA KLOR pre-mix to 10,000 gallons system water. The DURA KLOR pre-mix should be injected into the system at a point where it will be uniformly diluted and mixed.

**NOTE:** The addition of concentrated acids or mixtures of acids to undiluted DURA KLOR can cause the evolution of chlorine dioxide gas, which may be poisonous or explosive at high concentrations. Do not allow the chlorine dioxide concentration in the pre-mix to exceed 1500 ppm. Measurement of chlorine dioxide concentrations may be made with a Hach DPD chlorine test kit or by amperometric titration. - Always consult your Vulcan Chemical Technologies, Inc. representative for guidance and analytical procedures before performing any acid additions to DURA KLOR.

### SPECIFIC APPLICATIONS

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Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
in cooling towers and industrial  
process water. Residual concentrations of up to 5 ppm  
chlorine dioxide in process water may be used for washing whole uncut fruits and vegetables although a final potable water rinse  
is required if the residual exceeds 1 ppm)

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DURA KLOR may be used to treat enclosed and recirculating systems in the following application

- A. Dairy -- Sweet water systems to reduce microbiological levels.
- B. Farming -- Irrigation systems for slime reduction in tubing and piping.
- C. Papermills -- General water treatment to reduce microbiological growth.
- D. Oilfield -- To improve secondary recovery process water quality.
- E. General Industrial Applications Including Food Processing -- To reduce microbiological growth in process water, including wash water of uncut and unpeeled fruits and vegetables. (Note: Residual concentrations of up to 5 ppm chlorine dioxide in process water may be used for washing whole uncut fruits and vegetables although a final potable water rinse is required if the residual exceeds 1 ppm).

#### •FOR FOGGING AND MISTING APPLICATIONS:

DURA KLOR may be added to the plant misting or fogging systems to deodorize and to control odor causing bacteria, mold and mildew in food processing plants, dairies, bottling plants, poultry, meat and fish plants and animal facilities such as poultry houses, swine pens, calf barns and kennels.

#### Application Directions:

When fogging rooms with DURA KLOR care should be taken not to exceed the TLV-TWA of 0.1 ppm (0.30 mg/m<sup>3</sup>). If the TLV-TWA is to be exceeded, turn off air handlers and vacate people and livestock from the rooms to be fogged or misted. Ventilate for 15 minutes prior to reentry.

- (1) Mix 1.5 mL to 30 mL DURA KLOR per gallon of water. To this dilution, add a sufficient amount of 1 to 3% by weight of an aqueous food grade acid solution (phosphoric, citric, acetic, etc.) to lower the pH to 3.5 to 5.0.
- (2) Allow this diluted mixture to react for at least 15 minutes before adding to the plant fogging or misting system.
- (3) For best results, fogging or misting with diluted, acidified DURA KLOR should be done as close to the ceiling as possible.

NOTE -- Be careful not to add concentrated acid solutions to undiluted DURA KLOR as high concentrations of chlorine dioxide gas may evolve. The concentration of chlorine dioxide in the diluted DURA KLOR solution should not be allowed to exceed 0.5 ppm as determined by the Hach DPD method for chlorine dioxide detection. Please consult your Vulcan Chemical Technologies, Inc. representative for exact testing procedures before adding any acid to DURA KLOR. The use of DURA KLOR in fogging or misting should be accompanied by a regular air monitoring program.

#### •TO PREVENT CORROSION AND SLIME FORMATION IN OIL FIELD SECONDARY RECOVERY OPERATIONS:

#### Application Directions

- (1) Prepare a working solution by diluting each gallon of DURA KLOR to be used with 6 gallons injection water.
- (2) Proportion 1 part of the diluted DURA KLOR solution into 130 to 140 parts reinjection water acidified to a pH of 3.0 to 4.0.
- (3) Increase or decrease the dose rate of the DURA KLOR solution as indicated by monitoring the microbial quality of the water.

#### •POULTRY PROCESSING:

Carcass sprays, dips, rinses: DURA KLOR may be used as an equipment rinse and carcass spray or dip at a use rate of 0.7 to 1.7 ounces per gallon (500 - 1200 ppm sodium chlorite) in combination with any GRAS acid at levels sufficient to achieve a solution pH of 2.5 to 2.9.

Chill water applications: DURA KLOR is a source of sodium chlorite for treating poultry chill water and pre-chill water when used at a rate of 0.1 to 0.3 ounces per gallon in combination with any GRAS acid at levels sufficient to achieve a solution pH of 2.8 to 3.0.

#### •TO DISINFECT AND SANITIZE AGAINST ODOR CAUSING BACTERIA ON HARD NON-POROUS SURFACES, SUCH AS WALLS, CEILINGS, FLOORS, DRAINS, PIPELINES, COUNTERS, SINKS, TILES:

- (1) Before disinfection or sanitization, remove gross debris, food and beverages from the surfaces to be cleaned.
- (2) Add 1.25 fluid ounces DURA KLOR per gallon of water to be used.
- (3) The DURA KLOR solution may be applied by spraying, misting, pouring, or wiping onto the surface to be treated. Allow the DURA KLOR solution to contact the surface for at least 5 minutes before wiping off.

#### •TO CONTROL SLIME AND MOLD GROWTH ON FOOD PROCESS AND BEVERAGE CONVEYORS:

DURA KLOR may be sprayed on food process conveyors to control mold and slime build-up that leads to product contamination and possible belt slippage. Apply DURA KLOR at a rate of 1 to 2 fluid ounces per 5 gallons of water either by itself or in combination with a non-reactive water based lubricant.

#### •CIP SYSTEMS IN DAIRY, JUICE, BREWERY, BEVERAGE, AND FOOD PROCESSING:

Apply DURA KLOR in combination with or following an acid rinse cycle to a final available chlorine dioxide concentration of 100 to 200 ppm (1 to 2 fluid ounces per gallon) at a pH of 5.5 or less.

#### •FOR DEODORIZATION:

DURA KLOR effectively eliminates odors in the air and at their source.

- (1) Before deodorization, remove unopened and unwrapped food and beverages for the area to be treated.
- (2) Dilute a minimum of 0.5 fluid ounces of DURA KLOR per gallon of water to be used. For severe conditions, DURA KLOR may be used undiluted.
- (3) For room deodorization, spray, pour, or wipe the DURA KLOR solution as needed. For best results, apply the DURA KLOR as near to the center of the area to be treated as possible.
- (4) For surface deodorization, spray, pour, or wipe the DURA KLOR on the effected area as often as necessary. For best results, allow to air dry for 10 minutes after treatment and then rinse surfaces treated with potable water.

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**•TO CONTROL MOLD AND MILDEW:**

DURA KLOR is effective in controlling mold and mildew on bathroom surfaces, shower stalls, on curtains, in laundry rooms, hampers, and on other surfaces where mold and mildew may be present.

- (1) Before treatment, remove gross filth and debris from the affected surfaces. Remove all open and unwrapped food and beverages from the vicinity.
- (2) Dilute a minimum of 12 fl. oz. of DURA KLOR per gallon of water to be used. For several applications, DURA KLOR may be used undiluted.
- (3) Spray, mist, fog, pour or wipe the DURA KLOR solution onto the surface to be treated. Allow the DURA KLOR to contact the surface for at least 5 minutes. Allow surfaces to drain and air dry. After 30 minutes, rinse with water. Repeat as necessary.

A18(012797) Supersedes 032096

**ACCEPTED  
with COMMENTS  
in EPA Letter Dated:**

APR 22 1997

**Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.**

27764-3