020502
SHAUGHNESSEY NO.

REVIEW NO.

EE BRANCH REVIEW

DATE: IN 7/19/84 OUT 8/7/84

FILE OR REG. NO. 21164-L, 21164-A

PETITION OR EXP. PERMIT NO.

DATE OF SUBMISSION 6/26/84, 7/2/84

DATE RECEIVED BY HED 7/16/84

RD REQUESTED COMPLETION DATE 8/15/84

EEB ESTIMATED COMPLETION DATE 8/8/84

RD ACTION CODE/TYPE OF REVIEW 160/Old Chemical

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

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. A.E. Castillo (32)

PRODUCT NAME(S) Akta Klor 80

Akta Klor 25

COMPANY NAME Rio Linda Chemical Company, Inc.

SUBMISSION PURPOSE Proposed full registration of 80% technical and 25% formulation for treatment of water and wastewater.

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
020502	Sodium Chlorite	80%

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Pesticide Name: Sodium Chlorite

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

Proposed full registration of 80% technical and 25% formulation for micorbial control in water and wastewater.

100.2 Formulation Information

10.2.1 Manufacturing Use

ACTIVE INGREDIENTS:	
Sodium Chlorite	80%
INERT INGREDIENTS	20%
TOTAL	100.00%

100.2.2 Formulation

ACTIVE INGREDIENTS:	
Sodium Chlorite	25%
INERT INGREDIENTS	75%
TOTAL	100.00%

100.3 Application Methods, Directions, Rates (Formulation)

DIRECTIONS FOR USE
GENERAL CLASSIFICATION

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

TREATMENT

AKTA KLOR 25 is a source of chlorine dioxide for use in control of microorganisms in water and wastewater systems which must be used only in conjunction with a chlorine dioxide generator which utilizes chlorine gas, or a combination of chlorine solution and/or muriatic acid as the activating agent.

POINTS OF ADDITION

Chlorine dioxide solution (generated) should be added to a point in the system to insure uniform mixing such as a recirculation pump intake or through a diffuser in a reservoir, or a corporation cock. Do not apply AKTA KLOR 25 directly to the process water.

DOSAGE AND FEEDING

Feeding of chlorine dioxide solution from the generator to the system may be on a slug or continuous basis, depending upon severity of contamination and system temperature and pH. Typical dosage of chlorine dioxide solution is between 0.5 and 5 ppm on a continuing basis, and

between 5 and 100 ppm on a slug dose basis. Consult your Rio Linda Representative for best application directions. Follow all instructions in the chlorine dioxide generator instruction book carefully.

100.4 Target Organisms

Microbe

100.5 Precautionary Labeling

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS
AND DOMESTIC ANIMALS

SHIPPING AND HANDLING

DANGER: CORROSIVE, CAUSES EYE DAMAGE.

Wear goggles when handling. May be harmful if swallowed. Do not get in eyes or skin, or on clothing. Irritating to nose and throat. Avoid breathing vapor. May cause burns to broken skin. Wash hands after handling.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. Do not discharge into lakes, streams, ponds, or public waters unless in accordance with an NPDES permit. For guidance, contact your Regional Office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS.
STRONG OXIDIZING AGENT. DO NOT mix with acids or other chemicals except water. Mixing with acids or other chemicals may cause evolution of chlorine dioxide gas, which is poisonous and explosive. Store in a cool dry place away from direct sunlight. Dispose of spilled material by flusing with large quantities of water.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Do not reuse empty containers. Triple rinse and offer for recycling, reconditioning, or disposal in approved landfill or bury in a safe place. Consult federal, state or local authorities for approved alternative procedures.

100.6 Fish and Wildlife Toxicity

Species	Review Date	Result	Category
Mallard duck	7/23/84	597 mg/kg	Invalid
Mallard duck	7/24/84	>5000 ppm	Core
Bobwhite quail	7/24/84	>5000 ppm	Core
Rainbow trout	7/25/84	>100 ppm	Supplemental
Bluegill sunfish	7/25/84	>100 ppm	Supplemental
Daphnia magna	7/25/84	0.146 ppm	Core

101 Hazard Assessment

101.1 Discussion

Based upon the available data sodium chlorite is slightly toxic to avain species, practically non-toxic to fish and highly toxic to aquatic invertebrates. The application rate will range from 0.5 to 100 ppm.

101.2 Likelihood of Adverse Effects to Non-target Organisms

The minimal use information indicates sodium chlorite should provide minimal acute hazards to nontarget terrestrial wildlife and fish. However, there is potential for exposure of sodium chlorite to fish during cooling tower blow-down or the release of this product into lakes, streams or ponds. The use of sodium chlorite has potential for a serious impact on aquatic invertebrates. The minimum application rate of 0.5 ppm will exceed the daphnia magna LC_{50} value 3.4 times. One should keep in mind that the fish and wildlife toxicity data for this review fell into three categories: Core, Supplemental, and Invalid. A better description of the end uses is required, however, for it is not clear what exactly such uses are with clarification EEB can better assess the hazards and determine data requirements.

101.3 Endangered Species Considerations

The proposed uses of sodium chlorite are not likely to harm terrestrial animals and fish. However, these uses need to be better clarified. The minimum application rate of 0.5 ppm does exceed the daphnia magna LC_{50} value 3.4 times and could pose a serious impact to aquatic invertebates. NPDES Permits may be required prior to discharge of this product into lakes, streams, public water supply or wetlands. If the requested studies indicate a hazard to the endangered species, then a consultation with the Office of Endangered Species is warranted.

101.4 Adequacy of Toxicity Data

Species	Review Date	Results	Category
Mallard duck	7/24/84	>5000 ppm	Core
Bobwhite quail	7/24/84	>5000 ppm	Core
Daphnia magna	7/25/84	0.146 ppm	Core

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101.5 Inadequacy of Toxicity Data

Species	Review Date	Results	Category
Mallard duck	7/23/84	597 mg/kg	Invalid
Rainbow trout	7/25/84	>100 ppm	Supplemental
Bluegill sunfish	7/25/84	>100 ppm	Supplemental

The above studies do not meet the requirement in support of registration because the Mallard ducks at all dosage levels regurgitated within one hour after dosing, except birds at the 125 mg/kg dosage level and both the rainbow trout and bluegill sunfish test solutions were aerated during the 96 hour exposure.

101.6 Adequacy of Labeling

No comment at this time.

102 Classification

None at this time

103 Conclusions

EEB has reviewed the proposed full registration of sodium chlorite for uses in water and wastewater. EEB is unable to complete a full risk assessment (3(c)(7) finding) for these uses because pertinent ecologicial effects data are lacking. In order to assess the risks associated with these uses, EEB requires the following data:

(a) the avian acute oral LD_{50} for one species of waterfowl (Mallard duck, preferably) or one species of upland game bird (Bobwhite quail or Ring-necked Pheasant);

(b) the 96-hour LC_{50}'s for a coldwater species (Rainbow trout) and a warmwater species (Bluegill sunfish) of fish.

The above basic studies are required on the tehcnical of each active ingredient (80% technical grade material of sodium chlorite).

Further EEB requires a better description of the end uses being sought. These should be indicated on the level and depending upon the uses proposed further EEB data may be required to support registration.

103.1 Additional Data Required

(a) the avian acute oral LD_{50} for one species of waterfowl (Mallard duck, preferable) or one species of upland game bird (Bobwhite quail or Ring-necked pheasant);

(b) the 96-hour LC_{50}'s for a coldwaer species (Rainbow trout) and a warmwater species (Bluegill sunfish) of fish;

The above basic studies are required on the technical of each active ingredient (80% technical grade material of sodium chlorite).

103.2 Note to PM

Studies performed using technical grade material of each active ingredient in the product can be used to satisify the data requirement for both manufacturing use (Akta Klor 80%) and End Use (Akta Klor 25%) in support of registration providing the studies are acceptable and the end uses are identified.

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