Reg # 1439-159

MAR 10 1995 PM-14

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TIFA (C.I.) Limited
c/o Technology Sciences Group Inc.
1101 17th Street, NW
Suite 500
Washington D.C. 20036

Attention: Robert R. Stewart

SUBJECT: Chem Fish Synergized
EPA Reg. No. 1439-159
Your letters of December 15 and 20, 1994, February 8, and March 6, 1995

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, is acceptable, provided that you submit three (3) copies of your manufacturing process and analytical method in the correct format. See PR Notice 86-5.

If this condition is not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

A stamped copy of the labeling is enclosed for your records.

The Confidential Statement of Formula (CSF) of December 20, 1994, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable, provided that you correct the certified limits of the second ingredient in your formula. **All previous versions of your CSF are obsolete.** A copy of the CSF has been placed in our file for the subject product.

Sincerely yours,

RAF

Robert A. Forrest
Product Manager (14)
Insecticide-Rodenticide Branch
Registration Division (H7505C)

Enclosures: 1. Stamped label
2. A-79 enclosure

Peacock WP#5:A:ROTENONE\1439-159.MAR:305-5407,-6600:3/10/95

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ACCEPTED
with COMMENTS
In EPA Letter Dated

MAR 10 1995

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 1439-159

(1)

CHEM-SECT BRAND

CHEM FISH SYNERGIZED

(2 1/2% Emulsifiable Concentrate)

RESTRICTED USE PESTICIDE
Due to Aquatic Toxicity and Acute Inhalation

For retail sale to, and use only by, Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

For Control of Fish in Lakes, Ponds, and Streams

ACTIVE INGREDIENTS	7.5%
Rotenone	2.5%
Other Associated Resins	2.5%
+Technical Piperonyl Butoxide	2.5%
INERT INGREDIENTS*	92.5%
TOTAL	100.0%

* This product contains aromatic solvents.

† Consists of 2.35% (Butylcarbityl propylpiperonyl) ether and .15% related compounds.

KEEP OUT OF REACH OF CHILDREN

DANGER - POISONOUS

See Left Panel for additional precautionary statements.

EPA EST. NO. 44616-MO-1
EPA REG. NO. 1439-159

Net Contents _____

WESTERN HEMISPHERE:

TIFA (CI) LTD.
Tifa Square
Millington, New Jersey 07946
United States of America
Telephone: 908-647-4570
Telex: 178098/178484
Cable: TIFA Millington
Facsimile Nos. 908-647-2517
908-647-7338

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

DANGER: Fatal if inhaled. May be fatal if swallowed. Harmful if absorbed through skin. Causes substantial but temporary eye injury. Causes skin irritation. Do not breath spray mist. Do not get in eyes, on skin or on clothing. Wear goggles or safety glasses.

Wear either a respirator with an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix 14G).

Wash throughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash before reuse.

For handling activities during mixing, wear either a respirator with an organic-vapor removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix 14G

For all other exposures, wear a dust/ mist filtering respirator (MSHA/NOISH approval number prefix TX-21C).

Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash before reuse.

Statement of Practical Treatment

IF INHALED: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention:

IF SWALLOWED: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water. Do not induce vomiting, or give anything by mouth to, an unconscious or convulsing person.

IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention:

Note to Physician: Gastric lavage may be contra-indicated due to aspiration pneumonia hazard.

Environmental Hazards

This pesticide is extremely toxic to fish. Fish kills are expected at recommended rates. Consult your State Fish and Game Agency before applying this product to public waters to determine if a permit is needed for such an application. Do not contaminate untreated water when disposing of equipment washwaters

Physical and Chemical Hazards

Flammable. Keep away from heat and open flame (Flash point above 20 F to 80 F).

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

STORAGE: STORE ONLY IN ORIGINAL CONTAINER, IN A DRY PLACE INACCESSIBLE TO CHILDREN AND PETS.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to labels instructions, contact your State pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: TRIPLE RINSE (OR EQUIVALENT). THEN OFFER FOR RECYCLING OR RECONDITIONING OR PUNCTURE AND DISPOSE OF IN A SANITARY LANDFILL OR BY OTHER PROCEDURES APPROVED BY STATE AND LOCAL AUTHORITIES.

DIRECTIONS FOR USE

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

USE RESTRICTIONS:

Use against fish in lakes, ponds, and streams (immediately above lakes and ponds).

Since such factors as pH, temperature, depth, and turbidity will change effectiveness, use this product only at locations, rates and times authorized and approved by appropriate State and Federal fish and wildlife agencies. Rates must be within the range specified in the labeling.

Do not use water treated with rotenone to irrigate crops or release within 1/2 mile upstream of a potable water or irrigation water intake in a standing body of water, such as a lake, pond, or reservoir.

Properly dispose of dead fish and unused product. Do not use dead fish as food or feed .

APPLICATION DIRECTIONS:

To Survey Fish Populations

This product may be used to survey fish populations in fresh or salt water, provided that there is no intent to control such populations. Before using rotenone in such a manner, determine if applications are subject to other Federal, State, and Local laws and regulations or if permits are required.

To Control Fish Populations

Treatment of Lakes and Ponds

1. Application Rates and Concentrations of Rotenone

The actual application rates and concentrations of rotenone needed to control fish will vary widely, depending on the type of use (e.g., selective treatment, normal pond treatment, etc.) and the factors listed above. The table below is a general guide for the proper rates and concentrations.

2. Total Amount of Product Needed for Treatment

To determine the total number of gallons needed for treatment, divide the number of acre-feet covered by one gallon for a specific type of use (e.g., selective treatment, etc.), as indicated in the table below, into the number of acre-feet in the body of water.

CHEM FISH SYNERGIZED should be mixed with water before application, rather than applying at full strength. A wash tub or garbage can make a convenient container for mixing. Liquid CHEM FISH SYNERGIZED mixes readily with water. In some types of water, CHEM FISH SYNERGIZED does not penetrate deeper parts of the pond (10 to 25 feet or more) when applied on the surface. The deeper parts are usually treated by pumping the mixture through a weighted garden hose with a perforated section at the end.

Computation of acre-feet for lake or pond: An acre-foot is a unit of water volume having a surface area of one acre and depth of one foot. Make a series of transects across the surface, taking depths with a measured pole or weighted line. Add the measurements and divide by the number made to determine the average depth. To compute total acre feet, multiply this average depth by the number of surface acres, which can be determined from an aerial photograph or plot drawn to scale.

General Guide to the Application Rates and Concentrations of Rotenone Needed to Control Fish in Lakes and Ponds*
(2 1/2% Emulsifiable Concentrate Product)

Type of Use	No of Acre Feet Covered by One Gallon	Parts Per Million Active Rotenone	Parts Per Million 2.5% Product
Selective Treatment	15 to 12	0.005-0 007	0.20- 25
Normal Pond Use	3 0 to 1 5	0 025-0.050	1 0-2 0
Remove Bullheads or Carp	1 5 to 75	0.050-0 100	2 0-4.0
Remove Bullheads or Carp in Rich Organic Ponds	75 to 38	0 100-0 200	4 0-8 0
Pre-Impoundment Treatment Above Dam	50 to 30	0 150-0 250	6 0-10 0

* Adapted from Kinney, Edward 1965 Rotenone in Fish Pond Management USDI Washington, D C Leaflet FL-576.

3. Method of Application and Exposure Time

Pre-Mixing and Method of Application: Pre-mix with water at a rate of one gallon CHEM FISH SYNERGIZED to 10 gallons of water Uniformly apply over water surface or bubble through underwater lines

Detoxification: CHEM FISH SYNERGIZED treated waters detoxify under natural conditions within 1 week to 1 month, depending upon temperatures, alkalinity, etc Rapid detoxification can be accomplished by adding chlorine or potassium permanganate to the water at the same rates as CHEM FISH SYNERGIZED in parts per million plus enough additional to meet the chlorine demand of the untreated water

4. Removal of Taste and Odor

CHEM FISH SYNERGIZED treated waters do not retain a detectable taste or odor for more than a few days to a maximum of one month Taste and odor can be removed immediately by treatment with activated charcoal at a rate of 30 ppm to each 1 ppm CHEM FISH SYNERGIZED remaining (Note As CHEM FISH SYNERGIZED detoxifies, less charcoal is required.)

5 Restocking

Waters treated with this product detoxify within 3-5 days, depending on pH, temperature, water hardness, and depth To determine if detoxification has occurred, place live boxes containing samples of fish to be stocked in the treated waters. More rapid detoxification can be accomplished by adding potassium permanganate at the same dosage in parts per million as rotenone was used for the reclamation treatment

The application rate for the stream above is calculated as follows

$$R_s = R_p \times C \times F$$

where R_s = Application Rate for Stream (gal/sec), R_p = Application Rate for Pond (gal/acre feet), C = 1 acre foot/43560 cu ft, and F = Flow Rate (cu ft/sec)

In the example, the application Rate for Stream would be

R_s = 1 gal/3 acre-foot x 1 acre-foot/43560 cu ft x 10 cu ft/sec
R_s = .000076 gal/sec or 35 oz/hr

Exposure Time

The "Exposure Time" would be the period of time (expressed in hours or seconds) during which target fish should not enter the lake or pond under treatment In the example, this period of time could be 4 hours

Amount of Product

Calculate the "Amount of Product" for a stream by multiplying the "Application Rate for Stream" by the "Exposure Time"

In the example, the "Amount of Product" would be 140 oz (35 oz/hr x 4 hr) or 1 09 gal

Re-Entry Statement

Do not allow swimming in rotenone-treated water until the application has been completed and all pesticide has been thoroughly mixed into the water according to label instructions

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Treatment of Streams Immediately Above Lakes and Ponds

FOR USE IN STREAMS, IMMEDIATELY ABOVE PONDS, LAKES, OR RESERVOIRS. Allow CHEM FISH SYNERGIZED to drain from drum directly into center of stream at a rate of 0.85-1.7 cc per minute for each cubic foot of water flowing per second in the stream (0.5-1.0 parts per million CHEM FISH SYNERGIZED or 0.0125-0.025 ppm rotenone).

The purpose of treating streams immediately above lakes and ponds is to improve the effectiveness of lake and pond treatments and not to control fish in streams per se. The term "immediately" means the first available site above the lake or pond where treatment is practical.

In order to treat immediately above a lake or pond, you must select a concentration of active rotenone, compute the flow rate of the stream, calculate the application rate, select an exposure time, estimate the amount of product needed, and follow the method of application.

1. Concentration or Active Rotenone.

Select the "Concentration of Active Rotenone" based on the type of use from those on the table. For example, if you select "Normal Pond Use" you could select a concentration of "0.025 Parts per million"

2 Computation of Flow Rate for Stream

Select a cross section of the stream where the banks and bottom are relatively smooth and free of obstacles. Divide the surface width into 3 equal sections and determine the water depth and surface velocity at the center of each section In slowly moving streams, determine the velocity by dropping a float attached to 5 feet of loose, monofilament fishing line Measure the time required for the float to move 5 feet. For fast moving streams , use a longer distance Take at least three readings at each point. To calculate the flow rate from the information obtained above, use the following formula.

$$F = \frac{Ws \times D \times L \times C}{T}$$

where F = flow rate (cu. ft./sec), WS = surface width (ft), D = means depth (ft), L = mean distance traveled by float (ft), C = constant (0 8 for rough bottoms and 0 9 for smooth bottoms), and T = mean time for float (sec)

For example, after using the above formula, you might have computed the stream's flow rate to be "10 cu ft per sec"

3. Calculation of Application Rate

In order to calculate the application rate (expressed as "gallon per sec"), you convert the rate in the table (expressed as "gallon per acre-feet"), to "gallon per cu feet" and multiply by the flow rate (expressed as cu ft per sec") Depending on the size of the stream and the type of equipment, the rate could be expressed in other units, such as "ounces per hr".