

Reg # 1439-157

PM-14

MAR 13 1995

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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 Regular
EPA Reg. No. 1439-157
Your letters of December 20, 1994, and February 10,
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:

- A. Submit three (3) copies of your manufacturing process and analytical methods used for this product. See PR Notice 86-5 for the proper format.
- B. Submit the following acute toxicity studies, as indicated in our December 6, 1994, letter:
 1. Primary Skin Irritation (on actual formulation)
 2. Dermal Sensitization

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.

108

298

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. **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\1439-157.MAR:305-5407,-6600:3/13/95

398

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CHEM SECT BRAND

CHEM FISH REGULAR

5% Rotenone Emulsifiable Concentrate

RESTRICTED USE PESTICIDE
Due to Aqualic Toxicity

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.....	10.0%
Rotenone.....	5.0%
Other Cube Extractives.....	5.0%
INERT INGREDIENTS*.....	90.0%
TOTAL.....	100.0%

* This product contains aromatic solvents.

KEEP OUT OF REACH OF CHILDREN

WARNING

See Left Panel for additional precautionary statements.

EPA EST. NO. 44616-MO-1
EPA REG. NO. 1439-157

ACCEPTED
with COMMENTS
in EPA Letter Dated

MAR 13 1995

Net Contents _____

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the
registered under EPA R.
1439-157

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

2

4 8

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

WARNING: May be fatal if inhaled or swallowed. Harmful if absorbed through skin. Causes eye irritation. Causes skin irritation. Do not breath spray mist. Do not get in eyes, on skin or on clothing.

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/NIOSH approval number prefix TC-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:** Flush with plenty of water. Call a physician if irritation persists.
- 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 rinseate 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

4

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598

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.

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 REGULAR 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 REGULAR mixes readily with water. In some types of water, CHEM FISH REGULAR does not penetrate deeper parts of the pond (20 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.

4

698

**General Guide to the Application Rates and Concentrations of Rotenone Needed
to Control Fish in Lakes and Ponds*
(5% Emulsifiable Concentrate Product)**

<u>Type of Use</u>	<u>No. of Acres Feet Covered by One Gallon</u>	<u>Parts Per Million</u>	
		<u>Active Rotenone</u>	<u>5.0% Product</u>
Selective Treatment	30 to 24	0.005-0.007	0.10-1.13
Normal Pond Use	6.0 to 3.0	0.025-0.050	0.5-1.0
Remove Bullheads or Carp	3.0 to 1.5	0.050-0.100	1.0-2.0
Remove Bullheads or Carp in Rich Organic Ponds	1.5 to .75	0.100-0.200	2.0-4.0
Pre-impoundment Treatment Above Dam	1.0 to .60	0.150-0.250	3.0-5.0

* 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 REGULAR to 10 gallons of water. Uniformly apply over water surface or bubble through underwater lines.

Detoxification: CHEM FISH REGULAR 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 REGULAR in parts per million plus enough additional to meet the chlorine demand of the untreated water.

4. Removal of Taste and Odor

CHEM FISH REGULAR 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 REGULAR remaining. (Note: As CHEM FISH REGULAR 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.

16

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798

Treatment of Streams Immediately Above Lakes and Ponds

FOR USE IN STREAMS, IMMEDIATELY ABOVE PONDS, LAKES, OR RESERVOIRS. Allow CHEM FISH REGULAR 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 REGULAR or 0.025-0.05 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 of 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 = (Ws x D x L x C) / T

where F = flow rate (cu. ft./sec.), WS = surface width (ft.), D = mean 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-foot"), 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".

The application rate for the stream above is calculated as follows

R_s = R_p x C x 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:

$$R_s = 1 \text{ gal/3 acre-foot} \times 1 \text{ acre-foot/43560 cu ft} \times 10 \text{ cu ft/sec}$$

$$R_s = .000076 \text{ gal/sec or } 35 \text{ oz/hr.}$$

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.

Treatment of Streams

For use In Streams and Rivers

Only state or federal Fish and Wildlife personnel or professional fisheries biologists under the authorization of state or federal Fish and Wildlife Agencies are permitted to make applications of Chemfish for control of fish in streams and rivers. Informal consultation with Fish and Wildlife personnel regarding the potential occurrence of endangered species in areas to be treated should take place. Applicators must reference Tifa Ltd's Chemfish Stream and River Use Monograph before making any application to streams or rivers.

CHEMFISH STREAM AND RIVER USE MONOGRAPH
USE IN STREAMS AND RIVERS

The following use directions are to provide guidance on how to make applications of Chemfish to streams and rivers. The unique nature of every application site could require minor adjustments to the method and rate of application. Should these unique conditions require major deviation from the use directions, a special local need 24 (C) registration should be obtained from the state.

Before applications of Chemfish can be made to streams and rivers, authorization must be obtained from state or federal Fish and Wildlife agencies. Since local environmental conditions will vary consult with the state Fish and Wildlife agency to ensure the method and rate of application are appropriate for the site.

Contact the local Water Department to determine if any water intakes are within one mile down flow of the section of stream, river or canal to be treated. If so, coordinate the application with the Water Department to make sure the intakes are closed during treatment and detoxification.