

Reg # 1439-159

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 submissions of October 18 and December 13, 1993

We have reviewed the acute inhalation study (MRID No. 430473-02) and have found it to be acceptable. In addition, we have reviewed your request to add the ~~stream~~ use on your label and have found it acceptable.

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:

1. On the Front Panel after "DANGER", insure that the following text is in red on a contrasting background:
  - a. "POISONOUS".
  - b. Skull and Crossbones.
2. Under RESTRICTED USE PESTICIDE, change the reason to:

Due to Aquatic Toxicity and Acute Inhalation
3. On the Front Panel, change the statement above the ingredient statement to read:

For Control of Fish in Lakes, Ponds, and Streams
4. Revise your PRECAUTIONARY STATEMENTS as follows:

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

Because your product, as formulated, is now in Toxicity Category I for Inhalation, you will need to use the respiratory device and text in Paragraph 2 above, which you will find in 40 CFR 156.212(g)(3)(v). You may specify a different device if information available to you, such as the vapor pressure value, suggests that the normally recommended device would not be adequately protective, or might increase risks to the user unnecessarily. See 40 CFR 156.212(g)(3)(i). Though this product is not subject to the Worker Protection Standard (WPS), this rule provides the language needed to revise your precautionary statements.

If you were to run another inhalation test on your highest use dilution, then you could modify your respiratory device text to reflect those data.

5. Revise the Statement of Practical Treatment as follows:

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

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

IF SWALLOWED: Promptly drink a large quantity of milk, egg white, gelatin solution, or if these are not available, large quantities of water. Avoid alcohol. Do not induce vomiting. Call a physician or Poison Control Center.

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

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6. Note that the following texts are subject to special minimum type size requirements:

- a. Signal word, DANGER (see enclosed sheet)
- b. KEEP OUT OF REACH OF CHILDREN (see enclosed sheet)
- c. RESTRICTED USE PESTICIDE (same type size as "a")
- d. STORAGE AND DISPOSAL same type size as "b")

If these conditions are 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.

Sincerely yours,



Robert A. Forrest  
Product Manager (14)  
Insecticide-Rodenticide Branch  
Registration Division (H7504C)

Enclosures: 1. Stamped Label  
2. A-79 Enclosure

Peacock WP#4:A:1439FEB.159:305-5407,-6600:2/17/94

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ACCEPTED  
with COMMENTS  
to EPA Letter Dated

FEB 17 1994

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

CHEM-SECT BRAND  
CHEM FISH SYNERGIZED  
(2 1/2% Emulsifiable Concentrate)  
RESTRICTED USE PESTICIDE  
Due to Aquatic 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 and Ponds)

ACTIVE INGREDIENTS .....	10.0%
Rotenone .....	2.5%
Other Associated Resins .....	5.0%
†Technical Piperonyl Butoxide .....	2.5%
INERT INGREDIENTS* .....	90.0%
TOTAL .....	100.0%

\* This product contains aromatic solvents.

†Consist of 2.0% (Butylcarbityl propylpiperonyl) ether and 0.5% related compounds.

KEEP OUT OF REACH OF CHILDREN

DANGER - POISON (skull and crossbones)

See Left Panel for additional precautionary statements.

WESTERN HEMISPHERE:  
TIFA (CI) LTD.  
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Millington, New Jersey 07946  
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EPA EST. NO. 44816-MO-1  
EPA REG. NO. 1439-159

Net Contents \_\_\_\_\_

**PRECAUTIONARY STATEMENTS**

**Hazards to Humans and Domestic Animals**

**DANGER:** Fatal if inhaled or swallowed. Do not breathe vapor. May cause eye injury. Causes skin irritation. Do not get in eyes, on skin or on clothing. Wear protective goggles, faceshield, or safety glasses. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

**Statement of Practical Treatment**

**IF SWALLOWED:** Call a physician or Poison Control Center. Do not induce vomiting. This product contains aromatic petroleum solvent. Aspiration may be a hazard. Promptly drink a large quantity of milk, egg white and gelatin solution, or if these are not available, water. Avoid alcohol.

**IF IN EYES:** Flush with plenty of water and get medical attention.

**IF ON SKIN:** Wash with plenty of soap and water. Get medical attention if irritation persists.

**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:** WASTES RESULTING FROM THE USE OF THIS  
PRODUCT MAY BE DISPOSED OF ON SITE OR AT AN  
APPROVED WASTE DISPOSAL FACILITY.

**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.

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## 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 (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.

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

<u>Type of Use</u>	<u>No. of Acre Feet Covered by One Gallon</u>	<u>Parts Per Million</u>	
		<u>Active Rotenone</u>	<u>2.5% Product</u>
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.

**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.

### **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.

#### **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 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:

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

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".

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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:

$$R_s = 1 \text{ gal/3 acre-foot} \times 1 \text{ acre-foot/43560 cu ft} \times 10 \text{ cu ft/sec}$$
$$R_s = .000076 \text{ gal/sec or } 35 \text{ oz/hr.}$$

### 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.