PM 04 432-550 11/7/97 Pg 1 of 5

NOV 7 1997

5-521489 345/17

Agrevo Environmental Health
95 Chestnut Ridge Road
Montvale, NJ 07645

Attention: Ms. Sharon Johnston

Subject: Noxfish Fish Toxicant
EPA Registration No. 432-172
Nusyn-Noxfish Fish Toxicant
EPA Registration No. 432-550
Your amended applications of March 24, 1997

For each of the above products, you have submitted A) a revised label and B)four revised Confidential Statements of Formula (CSF): one basic formulation and three alternate formulas. We have reviewed these submissions and have the following comments.

A) Revised Label

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, is acceptable for each product, provided that you submit one (1) copy of the final printed labeling to us before you ship the product.

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 this condition.

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

B) Revised CSF

All of the revised CSFs dated March 24, 1997, are acceptable. Previous versions are obsolete.

Sincerely,

DBP

Daniel B. Peacock, Biologist
Insecticide-Rodenticide Branch
Registration Division (7504C)

Peacock:WP14:A:\Rotenone\432-550.NOV:703-305-5407:11/5/97

AgrEvo™ A company of Hoechst and Schering Berlin

ACCEPTED
with COMMENTS
In EPA Letter Dated:
NOV 7 1997
Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 432-550

3/5

CODE 4674

## 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.

# NUSYN-NOXFISH®

**Fish Toxicant**
Synergized Rotenone
Liquid-Emulsifiable

* *FOR CONTROL OF FISH IN LAKES, PONDS, RESERVOIRS AND STREAMS*

**ACTIVE INGREDIENTS:**

| | |
|---|---|
| Rotenone | 2.5% w/w |
| Other Associated Resins | 2.5% |
| Piperonyl Butoxide, Technical* | 2.5% |
| **INERT INGREDIENTS:+** | 90.0% |
| | 100.0% w/w |

* Equivalent to 2.0% [Butylcarbityl] [6-propylpiperonyl] ether and 0.5% related compounds.
+ This product contains aromatic petroleum solvent.
®Nusyn-Noxfish is a registered trademark of AgrEvo Environmental Health, Inc.

**EPA REG. NO. 432-550** **EPA EST. NO.**

## KEEP OUT OF REACH OF CHILDREN

## DANGER

## POISONOUS

## 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 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.

**See Below For Additional Precautionary Statements**

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## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

DANGER 432-550

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. When working with undiluted product 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.

### 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.

### Chemical and Physical Hazards

Combustible mixture. Flash point of this formulation is 115° F. DO NOT USE OR STORE NEAR HEAT OR OPEN FLAME.

### 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:** Store only in original containers, in a dry place inaccessible to children and pets. Nusyn-Noxfish will not solidify nor show any separation at temperatures down to 40°F and is stable for a minimum of one year when stored in sealed drums at 70°F.
**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 label 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.

### General Information

Nusyn-Noxfish is a specially formulated product containing synergized rotenone to be used in fisheries management for the eradication of fish from lakes, ponds, reservoirs and streams.

Nusyn Noxfish is registered for use by or under permit from, and after consultation with State and Federal Fish and wildlife Agencies.

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 on the label.

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

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.

**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 labeling instructions.

## For Use in Ponds, Lakes and Reservoirs

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 use, etc.) and the factors listed above. The table below is a general guide for the proper rates and concentrations.

Nusyn-Noxfish disperses readily in water both laterally and vertically, and will penetrate below the thermocline in thermally stratified bodies of water.

**Computation of Acre-Feet:** An acre-foot is a unit of volume of a body of water having the area of one acre and the depth of one foot. To determine acre feet in a given body of water, make a series of transects across the body of water taking depths with a measured pole or weighted line. Add the soundings and divide by the number made to determine the average depth. Multiply this average depth by the total surface area in order to determine the acre feet to be treated. If the number of surface acres is unknown, contact your local Soil Conservation Service, which can determine this from aerial photographs.

**Amount of Nusyn-Noxfish Needed for Specific Uses:** To determine the approximate number of gallons of Nusyn-Noxfish (2.5% Rotenone) needed, find your "Type of Use" in the first column of the table below and then divide the corresponding numbers in the fourth column, "Number of Acre-Feet Covered by One Gallon", into the number of acre-feet in your body of water.

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

**Detoxification:** Nusyn-Noxfish treated waters detoxify under natural conditions within one week to one month depending upon temperatures, alkalinity, etc. Rapid detoxification can be accomplished by adding chlorine or potassium permanganate to the water at the same rate as Nusyn-Noxfish in parts per million, plus enough additional to meet the chlorine demand of the untreated water.

**Removal of Taste and Odor:** Nusyn-Noxfish 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 for each 1 ppm Nusyn-Noxfish remaining. (Note: As Nusyn-Noxfish detoxifies, less charcoal is required.)

**Restocking After Treatment:** Wait 2 to 4 weeks after treatment. Place a sample of fish to be stocked in wire cages in the coolest part of the treated waters. If the fish are not killed within 24 hours, the water may be restocked.

## Use in Streams Immediately Above Lakes, Ponds and Reservoirs

The purpose of treating streams immediately above lakes, ponds and reservoirs is to improve the effectiveness of lake, pond and reservoir treatments by preventing target fish from moving into the stream corridors and not to control fish in streams per se. The term "immediately" means the first available site above the lake, pond or reservoir where treatment is practical, while still creating a sufficient barrier to prevent migration of target fish into the stream corridor.

In order to completely clear a fresh water aquatic habitat of target fish, the entire system above or between fish barriers must be treated. See the use directions for streams and rivers on this label for proper application instructions.

In order to treat a stream immediately above a lake, pond or reservoir, you must: (a) select the concentration of active rotenone, (b) compute the flow rate of the stream, (c) calculate the application rate, (d) select an exposure time, (e) estimate the amount of product needed, (f) follow the method of application.
To prevent movement of fish from the pond, lake or reservoir, stream treatment should begin before and continue throughout treatment of pond, lake or reservoir until mixing has occurred.

**1. Concentration of Active Rotenone:**
Select the concentration of active rotenone based on the type of use from those listed on the table. Example: If you select "normal pond use", you could select a concentration of 0.025 part 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

General Guide to the Application Rates and Concentrations of Rotenone Needed to Control Fish in Lakes, Ponds and Reservoirs[1]

| Type of Use | Parts Per Million | | Number of Acre-Feet Covered by One Gallon |
|---|---|---|---|
| | Nusyn-Noxfish | Active Rotenone | |
| Selective Treatment | 0.20 to 0.25 | 0.005 to 0.007 | 15 to 12 |
| Normal pond use | 1.0 to 2.0 | 0.025 to 0.050 | 3.0 to 1.5 |
| Remove bullheads or carp | 2.0 to 4.0 | 0.050 to 0.100 | 1.5 to 0.75 |
| Remove bullheads or carp in rich organic ponds | 4.0 to 8.0 | 0.100 to 0.200 | 0.75 to 0.38 |
| Preimpoundment treatment above dam | 6.0 to 10.0 | 0.150 to 0.250 | 0.50 to 0.30 |

1Adapted from Kinney, Edward. 1965. Rotenone in Fish Pond Management. USDI Washington, D.C. Leaflet FL-576.

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 (cubic feet/second), Ws = surface width (feet), D = mean depth (feet), L = mean distance traveled by float (feet), C = constant (0.8 for rough bottoms and 0.9 for smooth bottoms), and T = mean time for float (sec.).

**3. Calculation of Application Rate:**
In order to calculate the application rate (expressed as gallons/second), convert the rate in the table (expressed as gallons/acre-feet), to gallons per cubic feet and multiply by the flow rate (expressed as cubic feet/second). Depending on the size of the stream and the type of equipment, the rate could be expressed in other units, such as ounces/hour, or cc/minute.

The application rate for the stream is calculated as follows:

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

Where $R_s$ = application rate for stream (gallons/second), $R_p$ = application rate for pond (gallons/acre-feet), C = 1 acre foot/43,560 cubic feet, and F = flow rate of the stream (cubic feet/ second).

**4. Exposure Time:**
The exposure time would be the period of time (expressed in hours or minutes) during which Nusyn-Noxfish is applied to the steam in order to prevent target fish from escaping from the pond into the stream corridor.

**5. Amount of Product:**
Calculate the amount of product for a stream by multiplying the application rate for streams by the exposure time.

$$A = R_s \times H$$

Where A = the amount of product for the stream application, $R_s$ = application rate for stream (gallons/second), and H = the exposure time expressed in seconds.



**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 Nusyn-Noxfish 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 AgrEvo Environmental Health's Nusyn-Noxfish Stream and River Use Monograph before making any application to streams or rivers.

## WARRANTY STATEMENT

Our recommendations for the use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice. The buyer must assume all responsibility, including injury or damage, resulting from its misuse as such, or in combination with other materials.

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