

ROTENONE

Fish Toxicant Powder

RESTRICTED USE PESTICIDE

Due to acute inhalation and acute oral toxicity and due to toxicity to fish and other aquatic organisms. 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.

THE APPLICATOR IS RESPONSIBLE FOR CONFORMING TO THE LABEL. IMPORTANT GUIDANCE ON THE SAFE AND EFFECTIVE USE OF THIS PRODUCT IS PROVIDED IN THE *ROTENONE SOP MANUAL*, AVAILABLE FROM THE REGISTRANT OR THE AMERICAN FISHERIES SOCIETY AT <http://rotenone.fisheries.org>

SPECIMEN LABEL

ACTIVE INGREDIENTS:

Rotenone	8.74% w/w
Cube Resins other than rotenone.....	13.11%
OTHER INGREDIENTS*	78.15%
TOTAL:	100.00%

*Contains Petroleum Distillates

KEEP OUT OF REACH OF CHILDREN

WARNING - DANGER

See Additional First Aid, Precautionary Statements and Directions for Use including Storage and Disposal Instructions



EPA Reg.No. 89459-32

EPA Est. No. 2724-TX-1

FIRST AID

If swallowed	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Do not give any liquid to the person. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
If in eyes	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.

If on skin or clothing	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may contact 1-800-248-7763 for information on this pesticide product (including health concerns, medical emergencies or pesticide incidents).</p>	
<p>NOTE TO PHYSICIAN: Symptoms of exposure include numbness, lethargy and in-coordination. Decontamination, symptomatic and supportive treatment is recommended.</p>	

PRECAUTIONARY STATEMENTS – HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER – POISON

Fatal if swallowed. Fatal if inhaled. Do not breathe dust powder or the vapors or spray mists resulting from mixing/ loading/applying this product. Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Personal Protective Equipment (PPE)

All mixers, loaders, applicators, and other handlers (except pilots) must wear at a minimum, the following PPE: (1) coveralls, over long-sleeved shirt and long pants; (2) chemical-resistant gloves made out of: barrier laminate nitrile rubber \geq 14 mils, neoprene rubber \geq 14 mils, or viton \geq 14 mils; (3) chemical-resistant footwear plus socks; (4) protective eyewear; and (5) A NIOSH approved particulate respirator with any N, R or P filter with NIOSH approval prefix TC-84A; or a NIOSH approved powered air purifying respirator with HE filter with NIOSH approval prefix TC-21C.

In addition, mixers, loaders, and others exposed to the concentrate, through cleaning equipment or spills must wear a chemical-resistant apron. Exception: waterproof waders may be worn in place of coveralls, chemical-resistant apron and chemical-resistant footwear.

See **Engineering Controls** for additional requirements and exceptions.

User Safety Requirements

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been heavily contaminated with this product's concentrate; do not reuse them. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Engineering Controls for Mixing/Loading for Wettable Powder Formulations

Mixers/loaders/applicators must either:

- (1) Use a closed system that meets the requirements listed in Worker Protection Standard (WPS) for dermal protection of agricultural pesticides [40 CFR 170.240(d)(4)],
- (2) Use the powder/sand/gelatin mixture as described in the For Use in Springs, Seeps, and Areas With Poor Water Exchange section of this labeling, or
- (3) Use the Semi-Closed Aspirator Mixing/Loading System described below.

Before applying this product, roll the sealed drum on the ground to loosen the rotenone powder that may have settled during shipping and storage. Remove top of the drum containing this product and insert the aspirator probe into the bung opening in the plastic liner until the foam ring/gasket on the aspirator probe fits snugly around the bung opening in the plastic liner to minimize rotenone powder dispersing into the air. The bung opening is specifically designed for a snug fit around the aspirator probe and incorporates a soft plastic flange to remove excess powder rotenone when the aspirator probe is removed. Do not pour this product from its drum. Transfer the product from the plastic-lined drum to the mixing tank by use of a suction hose connected to one end of the suction pump (aspirator) on the mixing tank and connected at the other end to the aspirator probe that is inserted into the bung opening in the plastic liner. Handle the aspirator probe in a manner that minimizes the dispersing of rotenone powder onto you, any other person or into the air. Once the application is complete, remove the aspirator probe and triple rinse it and all parts of the aspirator in site water. See Rotenone SOP Manual (SOP 9) for further information on the operation of the semi-closed aspirator system.

After the application is complete and the aspirator probe is removed from the drum, shake residual powder into the bottom of the plastic liner, fold the plastic liner into the drum, and reseal the drum. The liners are triple rinsed by removing from the drum, submerging the liner before cutting

open, and wetting the liner under water. See Rotenone SOP Manual (SOP 9) for further information on cleaning aspirator and rinsing liners.

Mixers and loaders using all systems must wear PPE as required in the PPE section of the labeling for mixers and loaders. All systems must be capable of removing the pesticide from the shipping container and transferring it into mixing tanks and/or application equipment.

Applications using a boom or other mechanized equipment must release this product below the water's surface. Applications made with hand-held or hand-directed nozzle may release this product above the water's surface. Applications with an aircraft, backpack sprayer and drip can are prohibited.

Engineering Controls for Boat Applications

When boat pilots or others on the application boat are located within an enclosed area that has a non-porous barrier that totally surrounds the occupants and prevents contact with pesticides outside the enclosed area, they: (1) may wear long-sleeved shirt, long pants, shoes, and socks, instead of the PPE required for applicators in the PPE section of this labeling; (2) must be provided and have immediately available in the use of an emergency when they must exit the enclosed area while the application is taking place, the PPE required for applicators of the PPE section of this labeling; (3) must take off any PPE that is worn while outside the enclosed area before reentering the enclosed area; and (4) store all such used PPE in a chemical resistant container, such as a plastic bag, to prevent contamination of the enclosed area.

User Safety Recommendations

Certified Applicators applying or supervising any aspect of the application of this product should attend a training program for the *Rotenone SOP Manual*. American Fisheries Society offers this training: go to <http://rotenone.fisheries.org> for current schedule of training.

Users should remove clothing/PPE if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This product is extremely toxic to fish and other aquatic organisms. Fish kills are expected at recommended rates. Consult your State Fish and Game Agency and other agencies before applying this product to public waters to determine if a permit is needed for such an application. Do not contaminate water outside of the treatment area by cleaning of equipment or disposal of equipment washwaters. Do not contaminate water outside of the treatment area, food or feed by storage or disposal. Do not discharge effluent containing this pesticide into sewage systems without notifying the sewage treatment plant authority (PTOW).

DIRECTIONS FOR USE RESTRICTED USE PESTICIDE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling, including both the container label and the Rotenone Standard Operation Procedures Manual (SOP) available from the registrant or the American Fisheries Society at <http://rotenone.fisheries.org>. This product must be accompanied by an EPA-Approved Rotenone SOP Manual. Read the container label and Rotenone SOP Manual prior to use. The applicator is responsible for following the Directions For Use contained within both the container label and the SOP Manual. This product is registered for use by or under permit from, and after consultation with State and Federal Fish

and Wildlife and/or Natural Resource Agencies.

GENERAL INFORMATION

This product is a specially formulated product containing rotenone to be used in fisheries management for the eradication of fish from lakes, ponds, reservoirs.

Precautions and Restrictions: The Certified Applicator supervising the treatment must remain on site for the duration of the application. Do not allow recreational access (e.g., wading, swimming, boating, and fishing) within the treatment area while rotenone is being applied (see Placarding of Treatment Areas). Do not apply this product in a way that will result in active rotenone concentrations > 200 parts per billion/0.2 ppm (> 4 ppm 5% rotenone formulation). Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application (see Placarding of Treatment Areas and Re-entering the Treatment Area section of this labeling). This product must not be applied to estuarine or marine environments. Where practical, users should collect and bury dead fish. Properly dispose of unused product. Do not use dead fish for food or feed. Do not use water treated with rotenone to irrigate crops or release within ½ mile upstream of an irrigation water intake in a standing body of water such as a lake, pond or reservoir.

Applications using a boom or other mechanized equipment must release this product below the water surface. Applications made with hand-held or hand-directed nozzle may release this product above the water surface. Applications made with aircraft, backpack sprayer, drip can are prohibited.

Re-entering the Treatment Area: For applications that result in concentrations greater than 0.09 ppm active rotenone (when applying at a rate of > 1.8 ppm of 5% rotenone formulation), handlers re-entering treated water, must wear, at a minimum, the following PPE: (1) coveralls over long-sleeved shirt and long pants; (2) chemical-resistant gloves; (3) chemical-resistant footwear plus socks; and (4) chemical-resistant apron. Duration of PPE requirements for handlers re-entering treated water exactly correspond to duration of placarding requirements (e.g., PPE requirements end when placards are removed; see Placarding of Treatment Areas section of this labeling). Exception: waterproof waders may be worn in place of coveralls, chemical-resistant apron and chemical-resistant footwear.

Placarding of Treatment Areas: The Certified Applicator in charge of the application (or someone under his/her supervision) must placard all access areas to the treatment area. Detailed instructions for placarding are presented in the Rotenone SOP Manual. Placards must be placed every 250 feet along the shore line of the treated area OR, at public access points (e.g., trailheads, roads and trails). Placards must contain the following information: (1) DANGER/PELIGRO; (2) DO NOT ENTER WATER/NO ENTRE AGUA; Pesticide Application; (3) Rotenone Fish Toxicant Powder; (4) the purpose of the application; (5) the start date and time of application; (6) end date and time of application; (7) "Recreational access (e.g., wading, swimming, boating, fishing, etc.) within the treatment area is prohibited while rotenone is being applied"; (8) "Do not swim or wade in treated water while placard is displayed"; (9) "Do not consume dead fish from treated water"; and (10) the name, address, and telephone number of the responsible agency or entity performing the application.

Signs must remain legible during the entire posting period. For applications of ≤ 0.09 ppm active rotenone (≤ 1.8 ppm 5% formulation), signs can be removed once application is complete. For applications >

0.09 ppm active rotenone (> 1.8 ppm 5% rotenone formulation), signs can be removed following 24-hour bioassay demonstrating survival of bioassay sentinel fish or 14 days, whichever is less.

Monitoring and Notification Requirements for Water

Aquaculture: For treated water bodies used for aquaculture, the Certified Applicator or designee under his/her direct supervision must prohibit the restocking of fish unless monitoring samples confirm rotenone concentrations are below the level of detection for 3 consecutive samples taken no less than 4 hours apart. Detailed guidance for monitoring levels of rotenone in water is presented in the Rotenone SOP Manual (SOP 16).

Drinking Water: For applications > 40 ppb or 0.04 ppm active rotenone (> 0.8 ppm 5 % rotenone formulation) in waters with drinking water intakes or hydrologic connections to wells, 7 to 14 days prior to application, the Certified Applicator or designee under his/her direct supervision must provide notification to the party responsible for the public water supply or individual private water users against the consumption of treated water until: (1) active rotenone < 0.04 ppm as determined by analytical chemistry, or (2) fish of the Salmonidae or Centrarchidae families can survive for 24 hours, or (3) dilution with untreated water yields a calculation that active rotenone is < 0.04 ppm, or (4) distance or travel time from the application sites demonstrates that active rotenone is < 0.04 ppm. See Rotenone SOP Manual (SOP 16) for guidance on notification, bioassay and chemical analysis techniques and dilution, distance, and travel-time criteria.

Determining Treatment Rate

Use this product only at locations, rates, and times authorized and approved by appropriate State and Federal Fish and Wildlife and/or Natural Resource Agencies. The actual treatment rate and rotenone concentration needed to control fish varies widely, depending on the type of water environmental factors including pH, temperature, depth, turbidity, and the target species. The tables below are a general guide for the proper rates and concentrations for complete kills of target species. The Certified Applicator must conduct bioassays using site water (or water of similar quality) and target species (or surrogate species of similar sensitivity) to refine the treatment rate with the maximum limit allowed. Detailed guidance bioassays and designing treatment for complete kills of target species are presented in the Rotenone SOP Manual (SOP 5). Rates must be within the range specified on the label.

For Use In Ponds, Lakes, Reservoirs and Slow Moving Rivers

The tables below are a general guide for the proper rates and concentrations. This product disperses readily laterally and vertically, but may not penetrate the thermocline. The product is best applied when the water body is not thermally stratified or pumped below the thermocline if thermally stratified.

Computation of Water Body Volume: To determine volume of any given body of water, make a series of transects across the body of water taking depths at regular intervals. Add the depths and divide by the number of measurements made to determine the average depth. Multiply this average depth by total surface area in order to determine the volume to be treated. Volume is expressed as acre-feet (AF) or cubic meters (m³). Surface area can be determined by Global Positioning System (GPS) instrumentation and topographic maps. See Rotenone SOP Manual for further guidance.

Amount of Rotenone Fish Toxicant Powder Needed for Specific Uses: To determine the approximate number of pounds (or kilograms) needed, find your "Type of Use" in the first column of the tables below and then divide the corresponding numbers in the fourth column, "AF

(or m³) Per Pound (or Kilogram) Powder” into the number of AF (or m³) in the body of water. For example if you have a normal use at 0.05 ppm active rotenone, then 270 pounds of 5% rotenone powder is required to treat 100 AF.

Table – Recommended rotenone treatment concentrations and number of acre-feet (AF) standing water covered by one pound (5% A.I.) product. Adjust amount of product according to the actual rotenone content on Ingredient Statement on label.

Type of Use	Parts per Million (ppm)		AF Per Pound Powder
	Product (5% A.I.)	Active Rotenone	
Normal	0.5 – 1.0	0.025 – 0.05	0.74 to 0.37
Tolerant Species	1.0 – 3.0	0.05 – 0.15	0.37 to 0.123
Tolerant Species in Organic Ponds	2.0 – 4.0	0.1 – 0.2	0.185 to 0.093

Table – Recommended rotenone treatment concentrations and number of cubic meters (m³) standing water covered by one kilogram of (5% A.I.) product. Adjust amount of product according to the actual rotenone content on Ingredient Statement on label.

Type of Use	Parts per Million (ppm)		m ³ per Kilogram Powder
	Product (5% A.I.)	Active Rotenone	
Normal	0.5 – 1.0	0.025 – 0.05	2000 to 1000
Tolerant Species	1.0 – 3.0	0.05 – 0.15	1000 to 333
Tolerant Species in Organic Ponds	2.0 – 4.0	0.1 – 0.2	500 to 250

Note to User: Adjust pounds or kilograms of powder according to the actual rotenone assay as noted under the Ingredient Statement on this label. For example, if the required amount of 5% rotenone is 21 pounds and the rotenone assay is 7%, use 5/7 of 21 pounds or 15 pounds of this product to yield the proper amount of active rotenone.

Recommended Pre-Mixing and Method of Application: Using the semi-closed aspirator system, pre-mix at approximately 1 to 5% w/w powder to water. Uniformly apply over water surface or through underwater lines. Divide water body into manageable sections, delineated by marker buoys or flags or GPS coordinates, and treat within 48 hours to avoid deactivation (detoxification). See Rotenone SOP Manual (SOP 9) for additional guidance.

Deactivation: Water treated with this product will deactivate under natural conditions within one week to one month depending upon temperatures, alkalinity, etc. Rapid deactivation can be accomplished by adding potassium permanganate to the water at the same rate as Rotenone Fish Toxicant Powder in parts per million, plus enough additional to meet the organic demand of the untreated water. See Rotenone SOP Manual (SOP 6 and 7) for guidance.

Restocking after Treatment: Typically, wait 2 to 4 weeks after treatment prior to restocking. 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.

Method of Application

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 application, authorization must be obtained from State or Federal Fish and Wildlife and/or Natural Resource agencies. Since local environmental conditions will vary, consult with the State Fish

and Wildlife and/or Natural Resource Agency to ensure the method and rate of application are appropriate for that site.

Contact the local water department to determine if any water intakes are within one mile downstream 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.

For Use In Springs, Seeps and Areas With Poor Water Exchange

Rotenone powder/gelatin/sand mixture can be used in conditions where other means of application (drips, backpack sprayers, etc.) will not yield a steady concentration of rotenone necessary to eradicate target from treatment area. Mixture formula is one pound (0.454 kg) of powdered rotenone to one pound (0.454 kg) of fine to medium washed sand to 2 ounces (0.0567 kg) of unflavored gelatin (1:1:0.0125), and add sufficient water to create a dough-like consistency. Keep mixture moist by storing in a sealed container. Only use when in a dough like consistency to insure efficacy. See Rotenone SOP Manual (SOP 13) for detailed guidance on preparation and use of rotenone powder/gelatin/sand mixture.

Deactivation

Flow in a stream and outflow from a treated lake beyond the treatment area must be deactivated with potassium permanganate to minimize exposure beyond the treatment area unless unnecessary. (See Rotenone SOP Manual [SOP 6] for the definition of treatment area, examples when deactivation with potassium permanganate is unnecessary, and detailed guidance for deactivating with potassium permanganate [SOP 7].)

Within 1 to 2 hours travel time from the furthest downstream rotenone application site, the rotenone can be deactivated with a potassium permanganate solution or granules at a resultant stream concentration of 2 to 4 parts per million, depending on rotenone concentration and organic demand of the water. A 2.5% (10 pounds potassium permanganate to 50 gallons of water) permanganate solution is dripped in at a continuous rate using the equation:

$$X = Y(70 F1) \text{ or } X = Y(2,472 F2)$$

X = ml of 2.5% permanganate solution per minute, Y = ppm of desired permanganate concentration, F1 = stream flow (ft³/s) or F2 = stream flow (m³/s) or, granular potassium permanganate is applied at a continuous rate using the equations:

$$Z = Y(1.7 F1) \text{ or } Z = Y(60.02 F2)$$

Z = grams of granular potassium permanganate per minute, Y = ppm of desired permanganate concentration, F1 = stream flow (ft³/s) or F2 = stream flow (m³/s).

Flow of permanganate should be checked at least hourly. Live fish in cages placed immediately above the permanganate application site will show signs of stress signaling the need for beginning deactivation. Deactivation can be terminated when replenished fish survive and show no signs of stress for at least four hours. Deactivation of rotenone by permanganate requires between 15 to 30 minutes contact time (travel time). Cages containing live fish can be placed at these downstream intervals to judge the effectiveness of deactivation. At water temperatures less than 50°F, deactivation may be retarded, requiring a longer contact time.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Store only in original containers, in a dry place inaccessible to children and pets. If spilled, sweep up and dispose of as below.

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 HANDLING: Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Then dispose of in a sanitary landfill.

Central Garden & Pet Company, 1501 East Woodfield Road, 200W, Schaumburg, Illinois 60173

NOTE: This specimen label is for informational purposes only. All uses may not be approved in all states. See product labeling for use directions.