HAZARDS TO DOMESTIC ANIMALS
KEEP OUT OF REACH OF CHILDREN

DANGEROUS POISON

ENVIRONMENTAL HAZARDS

FIRE AND EXPLOSION HAZARDS

DIRECTIONS FOR USE

SPILL AND LEAK PROCEDURES

ACCEPRED. 55% TABLETS
8536-27

PHYSICAL CHEMICAL HAZARDS

STORAGE

STORAGE AND DISPOSAL

DANGEROUS POISON

STATEMENT OF PRACTICAL TREATMENT

A service manual is available for the safe and effective use of this product. Refer to service manual for more information.

WARRANTY

Before use, check equipment. Service your engine regularly as specified by manufacturer.
PRODUCT MANUAL

FOR USE WITH

Tri-Tox® TABLETS

ACCEPTED
8536-27
MAY 8, 1989

AND

Tri-Tox® PELLETS

RESTRICTED USE PESTICIDE DUE TO ACUTE INHALATION TOXICITY OF HIGHLY TOXIC PHOSPHINE GAS

For retail sale to and use only by Certified Applicators for those uses covered by the Applicator's certification or persons trained in accordance with the attached product manual working under the direct supervision and in the physical presence of the Certified Applicator. Physical presence means that the Certified Applicator must be available on site or on the premises. Read and follow the label and Soil Chemical Corporation product manual which contain complete instructions for the safe use of this product.
PRODUCT MANUAL
FOR TRI-TOX® TABLETS AND TRI-TOX® PELLETS

INTRODUCTION

This booklet has been prepared to assist the user in the safe and effective handling of Tri-Tox® Tablets and Pellets. As all phosphates are toxic to man and animals if not properly used, all directions for use must be carefully followed. If this is done, the insect can be safely handled and effective insect control will be obtained.

PHYSICAL AND CHEMICAL PROPERTIES OF TRI-TOX®

Tri-Tox® is a formulated product consisting of aluminum phosphate, essential carbon, soap, and edible paraffin. Upon exposure to the atmosphere, the aluminum phosphate disassociates. Terminal aspects: a pungent smelling warning gas, and carbon disulfide. A fire suppressant is 3 parts by volume. When pure gas is emitted, phosphine (phosphate) begins to evolve as the pellet or tablet slowly decomposes. Hydrogen phosphide is a colorless, odorless gas and can be readily smelled by most humans at a concentration of at least 1 part per million. It is a colorless gas with high volatility due to high volatility.

Tri-Tox® is offered in two forms, tablets and pellets. The tablet is approximately 4/5 inch in diameter. It weighs 0.6 gram and on decomposition releases one gram of hydrogen phosphide. Tablets are packaged either in gas tight tubes and can or in resealable bags. Each tube holds 70 tablets and each can holds 15 tubes. Each resealable bag holds 10 or 50 tablets in bulk. The pellet is spherical, it forms and approximately 3/8 inch in diameter. It weighs 0.6 gram, and on decomposition releases 1.5 grams of hydrogen phosphide. There are 100 pellets packed in each resealable bag.

The rate of decomposition is dependent on temperature of the commodity and relative humidity of the atmosphere. At temperatures over 80°F (26°C), decomposition of both tablets and pellets is completed in approximately 72 hours. As temperature decreases, required exposure time is increased. Fumigation must not be attempted when commodity temperature is below 40°F (4°C).

Following decomposition of the tablets and pellets, there remains a gray-white "dust" composed almost entirely of non-poisonous aluminum hydroxide, with a trace amount of the decomposed aluminum phosphate. The "dust" is eliminated when treated raw agricultural commodities are moved, or it can be collected and properly disposed of following the treatment of processed foods.

HAZARDS TO HUMANS AND DOMESTIC ANIMALS
KEEP OUT OF REACH OF CHILDREN
DANGER - POISON

Aluminum phosphate pellets, granules, or tablets may be fatal if swallowed. Do not inhale in any way, or come in contact with moisture, water, or acids. Extremely toxic phosphine gas will be released. If a garlic odor is detected, you must monitor to determine whether phosphine gas is present above the acceptable exposure level. Application and handling procedures should be followed. Since no odor may be detected under certain circumstances, the absence of a garlic odor does not mean that phosphine gas is absent. Observe proper application, aeration, fumigation, and disposal procedures specified elsewhere in this manual to prevent over-exposure.
NOTE TO PHYSICIAN: Aluminum phosphide granules, powder, tablets, or pellets react with water, moisture, and many other liquids to release phosphine gas. Mild inhalation causes nausea, vomiting, epistaxis, shortness of breath, and headache. Severe inhalation may occur in a few hours to several days, resulting in pulmonary edema and may lead to distress, unconsciousness, and death. In sufficient quantity phosphine affects the liver, kidneys, and central nervous system. Ingestion can cause vomiting, abdominal pain, and gastrointestinal symptoms. Cut safety to the plaintiff in acts: Phonene phosphine may result in 1. Pulmonary edema 2. Liver damage 3. Gastrointestinal symptoms to gastric 3. Liver damage and 3. Gastrointestinal symptoms. Treatment depends on the amount of ingested material. Stop inhalation and prevent further exposure. 

PRACTICAL TREATMENT STATEMENT

Treatments of overdose to phosphine are similar to those used in cases of other similar toxic agents. Immediate medical attention should be sought. 

HOW Tri-Tox® SHOULD BE STORED

Tablets and pellets are received in a container containing sealed tubes and caps or reusable drums, as long as the tubes, caps, or flasks remain intact. Store the storage life of the product is unlimited. Storage should be in a dry, locked, ventilated area and out of the reach of children and unauthorized persons.

HOW Tri-Tox® SHOULD BE HANDLED

1. Make certain the label is intact and legible. 
2. Only in open containers of tablets or pellets only in open air. 
3. Open containers of tablets or pellets only in open air. 
4. Do not inhale or drink when handling the product. 
5. Do not mix in a locked storage area for later use. 
6. Wash hands after use of the product. 
7. Do not attempt to remove empty container. 
8. Do not attempt to remove empty container. 

REGISTERED USES

REGISTERED USES: Tri-Tox® tablets and pellets are registered with the U.S. Environmental Protection Agency for the use-control of the following insects:

1. Food feed, noninsecticidal: Induce the raw agricultural commodities.
2. Food feed, noninsecticidal: Induce the raw agricultural commodities.
3. Food feed, noninsecticidal: Induce the raw agricultural commodities.
4. Food feed, noninsecticidal: Induce the raw agricultural commodities.

INSECTS TO BE CONTROLLED

1. Food feed, noninsecticidal: Induce the raw agricultural commodities.
2. Food feed, noninsecticidal: Induce the raw agricultural commodities.
3. Food feed, noninsecticidal: Induce the raw agricultural commodities.
4. Food feed, noninsecticidal: Induce the raw agricultural commodities.

GENERAL PRECAUTIONS

1. Never mix Tri-Tox® tablets or pellets with any other products or chemicals.
2. Tri-Tox® should never be used unless conditions which would allow the gas concentration to reach the levels of flammability in which it is stored. 
3. Never mix Tri-Tox® tablets or pellets with any other products or chemicals. 
4. Take care to ensure that the gas concentration does not exceed the lower flammability limit.
5. Never mix Tri-Tox® tablets or pellets with any other products or chemicals. 
6. Never mix Tri-Tox® tablets or pellets with any other products or chemicals. 
7. Never mix Tri-Tox® tablets or pellets with any other products or chemicals. 
8. Never mix Tri-Tox® tablets or pellets with any other products or chemicals. 
9. Never mix Tri-Tox® tablets or pellets with any other products or chemicals. 
10. Never mix Tri-Tox® tablets or pellets with any other products or chemicals.
9. Hydrogen phosphide has great penetrating power and gas may slowly seep through walls. It is seen that adjacent areas are not covered, usually requiring the fusification period.

10. Hydrogen phosphide does not deter or delay. Because of its high density and penetrating ability, the enclosure being treated must be sealed tightly as soon as possible.

11. Exposure to the "dead" reactor after a spent reactor must be carefully and properly done. See Section on "Safety" for further information.

12. If control of access and venting is desired, it should be for the control, user, or other means of controlled structures. It is not to be cut off which may be closed in the reactor buildings.

PROTECTIVE CLOTHING

When not using a cut-resistant costume or similar washable material, it is desirable to have a part of the body.
STORAGE AND DISPOSAL

DO NOT CONTAMINE WATER SOURCES OR FIELDS OR FED OR WATER HOSES.

DANGEROUS. Use water only in the event of an emergency, do not contaminate water sources or fields, or feed to livestock or animals. Contact your local environmental protection agency or the manufacturer for information on proper disposal procedures.

Do not contaminate water sources or fields or feed to livestock or animals. Contact your local environmental protection agency or the manufacturer for information on proper disposal procedures.

AERATION OF FUMIGATED COMMODITIES

For Toleration Purposes

SPENT RESIDUE FROM ALUMINUM PHOSPHIDE

PARTIALLY SPENT RESIDUE FOR DEACTIVATION OF ALUMINUM PHOSPHIDE

1. Collect partially spent residue in a suitable container with suitable aeration facilities. (Suitable conditions: temperature 10°C, relative humidity 40-60%)

2. Deactivate by addition of the appropriate amount of the deactivating agent as recommended by the manufacturer or your local environmental protection agency.

3. The deactivating agent shall be added slowly to the partially spent residue.

4. Mix thoroughly, ensuring complete deactivation of the residue. (Suitable deactivating agent: water, dilute acetic acid, or dilute sodium hydroxide)

5. Deposit the partially spent residue in a suitable container with suitable aeration facilities. (Suitable conditions: temperature 10°C, relative humidity 40-60%)

6. Deposit in an approved location for disposal.

PHYSICAL/ CHEMICAL PROPERTIES

DEACTIVATION OF ALUMINUM PHOSPHIDE

DIRECTIONS FOR DISPOSAL OF SPENT RESIDUE FROM ALUMINUM PHOSPHIDE

1. Deposit the spent residue in an approved location for disposal.

2. Ensure proper ventilation and protective equipment is used during disposal.

3. Dispose of the residue in accordance with local environmental protection agency regulations.

4. For proper disposal, refer to the manufacturer's instructions or your local environmental protection agency.

5. Always follow the proper disposal procedures recommended by the manufacturer or your local environmental protection agency.

6. Further information on disposal procedures can be obtained from your local environmental protection agency or the manufacturer.
SPILL AND LEAK PROCEDURES

A spill, other than incidental to application or normal handling, may produce high levels of gas and, therefore, according to current, must wear SCBA or its equivalent when the concentration of phosphine gas is unknown. Other MSHA/OSHA approved respiratory protection may be worn if the concentration is known. Do not use water at any time to clean up a spill of sodium phosphide in contact with unaltered pellets or pellets immersed in water. The production of phosphine gas which could result from the process will be far greater than that produced when handling pellets.

When spills are encountered, first cover any spilled material which has the potential to cause any combustive or explosive hazard, with an ample number of general-use fire blankets.

If spilled material is not contained, if water is to be used, cover any exposed area in a thin layer. Do not add water to a sodium phosphide spill in containers which may be susceptible to water if it is used on sodium phosphide spilled in containers which may be susceptible to water if it is used on sodium phosphide spilled in unlined, metal containers. Caution: If three feet or more at opening at any time later.

If the area of the spill is unknown or if the pellets and pellets have been contaminated with sodium, water, etc., clear the spillage and place it into small open buckets having a capacity of less than 1 gallon. Do not add more than about one liter of water to the bucket. In case of wet desiccation is not feasible, the three open containers should be transported in open vehicles to a suitable area from infected buildings. Wet desiccation may then be carried out as described with water and storage disposes.

If the uncontaminated material is not completely reacted by exposure to atmosphere at the spill site, the wet and dry mixture containing a small portion of the spill site in a small container. Desiccating solution is prepared by adding the appropriate amount of water to a container of sodium phosphide that has been heated until it is no longer wet. Allow the mixture to stand, stirring occasionally, for about 12 hours. The reactant along will then be safe for disposal.

Disposal of the dry and wet mixture, with or without preliminary desiccation, at a sanitary landfill, or other suitable site is approved. In areas where permitted, this material may be placed into a storage area or dug out of the ground.

Respiratory protection is required during wet desiccation of unsealed wood. Never place pellets, tablets, or dust in a closed container with a gas detector, such as a digital phosphine detector, as this may produce a hazardous gas which could be harmful.

DIRECTIONS FOR USE

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

DOSEAGE AND EXPOSURE INFORMATION

Phosphine phosphide is an acute poison and is highly effective against insects. It is toxic with all forms, and even treatment depends upon both dosage and exposure time. Sodium phosphide is effective at very low concentrations providing exposure times in excess of 10,000 ppm. Exposure times are not required. Insecticides are not considered effective against this product.

SUGGESTED DOSAGE SCHEDULE

<table>
<thead>
<tr>
<th>STATIONARY CONTAINERS</th>
<th>DUST ANIMAL FEED (EXCEPT MUS)</th>
<th>PELLETS</th>
<th>TABLETS</th>
<th>WHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-120 plates or 120-300 pellets per 1000 bushels.</td>
<td>60-125 60-200 120-300 pellets per 1000 cubic feet storage</td>
<td>50 50 50</td>
<td>30 30 30</td>
<td>30 30 30</td>
</tr>
</tbody>
</table>

SUGGESTED EXPOSURE TIMES (FOR ALL USES)

<table>
<thead>
<tr>
<th>COMMODITY TEMPERATURE</th>
<th>PAPERWORK</th>
<th>CERTIFICATE</th>
<th>TABLETS</th>
<th>PELLETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 40°F</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>40-50°F</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>50-60°F</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>60-65°F</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Over 36°F</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

*Do not feed--except porcine for export.

Dusters Effective results depend upon proper dosage, adequate exposure time, correct application techniques and well-sealed enclosures.
APPLICATION PROCEDURES

FUMIGATION PROCEDURES

1. This is a highly hazardous material and may only be used by individuals trained in its proper use. Before using read and follow all precautions and directions on the label and in the product manual. Fumigation is not a product manual. Fumigation is not a general treatment.

2. A fumigation treatment with Furadan @ will protect the area to be treated. Apply the entire contents of Furadan @ to the entire area to be treated. Fumigation is not a general treatment.

FUMIGATION OF SILO TYPE STORAGE:

1. Calculate the number of pallets or bales based on usage level and total inventory of silo storage to be treated.

2. Rearmats or pallets in silo storage. Storage of treated silo storage will be effective for 12 months. Fumigation is not a general treatment.

FUMIGATION OF FLAT STORAGE:

1. Rearmats or pallets in flat storage. Storage of treated flat storage will be effective for 12 months. Fumigation is not a general treatment.

FUMIGATION UNDER TARPULINS:

1. Rearmats or pallets under tarpulins. Storage of treated flat storage will be effective for 12 months. Fumigation is not a general treatment.

FUMIGATION UNDER CEREAL MILLS, FEED MILLS, WAREHOUSES:

1. Rearmats or pallets in cereals or feed mills. Storage of treated flat storage will be effective for 12 months. Fumigation is not a general treatment.

CONTROL OF MOLES AND BURROWING RODENTS:

1. Rearmats or pallets in moles and burrowing rodents. Storage of treated flat storage will be effective for 12 months. Fumigation is not a general treatment.

DIRECTIONS FOR USE AGAINST BURROWING PESTS:

1. Rearmats or pallets in moles and burrowing rodents. Storage of treated flat storage will be effective for 12 months. Fumigation is not a general treatment.

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10. Rearmats or pallets in moles and burrowing rodents. Storage of treated flat storage will be effective for 12 months. Fumigation is not a general treatment.
ENVIRONMENTAL HAZARDS

This product is very highly toxic to wildlife. Non-target organisms exposed to phosphine gas in surfaces will be killed. Do not apply directly to water or wetlands without a permit. Do not contaminate water by drainage of equipment or discharge of waste.

ENDANGERED SPECIES RESTRICTIONS

The use of phosphine gas is prohibited in areas inhabited by endangered species. The species (or groups of species) listed below are known to be put at risk by the application of phosphine gas in areas inhabited by those species. The following areas are prohibited to the use of phosphine gas:

- State: Arizona. Location: Salt River.
- State: California. Location: San Joaquin Valley.
- State: Montana. Location: Flathead River.
- State: Nevada. Location: Washoe County.
- State: Oregon. Location: Willamette Valley.

Intransit Ship Fumigation

IMPORTANT:

Intransit ship fumigation is an authorized activity governed by U.S. Coast Guard regulations. It is important to comply with these regulations prior to fumigation.

PROCEDURES:

1. Prior to initiating a vessel for intransit cargo fumigation, the master of the vessel shall be thoroughly informed. The master must determine whether the vessel is suitable for the purpose and is capable of safe operation by the ship and staff personnel. The master shall not fumigate until the vessel is safe for operation by the ship and staff personnel.

2. Prior to initiating a vessel for intransit cargo fumigation, the master shall be responsible for ensuring that a qualified person is present on the vessel to monitor and supervise the fumigation. This person shall be familiar with the equipment and procedures and shall be instructed as to the correct operation of the equipment.

3. During the fumigation, or until a fumigated vessel leaves port or the cargo is treated, the person in charge of the fumigation shall ensure a qualified person is present. Only gas or vapor detection equipment tests the air spaces adjacent to the fumigated areas for leakage. If leakage of the fumigant is detected, the person in charge of the fumigation shall take action to correct the leakage, or shall inform the master of the vessel of his recommendations to do so.

4. If the fumigation is not completed and the vessel arrives before the required time, the master shall be responsible for ensuring that the vessel is completely fumigated and the fumigtant is removed.

* Personal protective equipment (PPE) is required for all personnel handling or operating equipment. PPE includes a full-face respirator, protective clothing, and gloves. Suitable PPE must be used.

PRECAUTIONS AND PROCEDURES DURING VACATION:

1. When appropriate, use fumigation equipment monitoring equipment to assess the safety of fumigated areas and to ensure that the areas are properly fumigated. Properly trained personnel shall be available to inspect the areas and ensure that the proper preventive measures are in place.

2. Use ventilation systems to ensure that the areas are properly fumigated.

PRECAUTIONS AND PROCEDURES DURING DISCHARGE:

1. In areas where residual chemicals may persist, use proper ventilation systems to ensure that the areas are properly fumigated.

2. Use protective clothing and proper respiratory protection.

3. Use proper ventilation and air sampling equipment to ensure that the areas are properly fumigated.

4. Use proper respiratory protection and protective clothing.

5. Use proper ventilation and air sampling equipment to ensure that the areas are properly fumigated.

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24. Use proper respiratory protection and protective clothing.

25. Use proper ventilation and air sampling equipment to ensure that the areas are properly fumigated.

26. Use proper respiratory protection and protective clothing.

27. Use proper ventilation and air sampling equipment to ensure that the areas are properly fumigated.

28. Use proper respiratory protection and protective clothing.

29. Use proper ventilation and air sampling equipment to ensure that the areas are properly fumigated.
BARGE FUMIGATION

When fumigating unattended barges, the tablets or pallets may be fed into raw agricultural commodities and bulk animal feeds as the barge is being loaded or may be placed in, after loading is completed. When treating raw commodities or feeds not stored in bulk, or processed foods, the tablets or pallets may be contained and fastened to a support. Dosage and exposure time on unattended barges is identical to the use for the same commodities fumigated in land based structures or storage areas.

Following application of the fumigant, the barge must be sealed and warning placards attached. Notify consignee if the barge is to be fumigated in transit. Prior to the unloading of unattended fumigated barges, make appropriate tests to ascertain safety of cargo and ballast area.

PUC: Barge fumigation is regulated by the U.S. Coast Guard Regulations 46 CFR 147A as modified by U.S. Coast Guard Special Permit 2-15. Shipper or fumigator must possess this permit prior to fumigating. For further information contact: U.S. Coast Guard, Hazardous Materials Branch, Washington, DC 20593.