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**ACCEPTED**  
NOV 13 1987  
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 2548-73

DETIAPHOS ROTUX MT LABEL --- FRONT PANEL

RESTRICTED USE PESTICIDE  
DUE TO ACUTE INHALATION TOXICITY OF HIGHLY TOXIC HYDROGEN PHOSPHIDE (PHOSPHINE, PH<sub>3</sub>) 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 accompanying product manual working under the direct supervision and in the physical presence of the certified applicator. Physical presence means on site or on the premises. Read and follow the label and the Research Products Company product manual which contains complete instructions for the safe use of this pesticide.

Detiaphos(R) ROTUX(R) MT

Active Ingredient: Magnesium Phosphide.....34%  
Inert Ingredients:.....66%  
TOTAL.....100%

KEEP OUT OF REACH OF CHILDREN

DANGER/PELIGRO-FOLSON

PRECAUCION AL USUARIO: Si usted no lee ingles, no use este producto hasta que la etiqueta se le haya sido explicado ampliamente.

STATEMENT OF PRACTICAL TREATMENT

Symptoms of overexposure to hydrogen phosphide are headache, dizziness, nausea, difficult breathing, vomiting and diarrhea. In all cases of overexposure get medical attention immediately. Take victim to the doctor or emergency treatment facility.

IF GAS OR DUST FROM TABLETS IS INHALED: Get exposed person to fresh air. Keep warm and make sure person can breathe freely. If breathing has stopped, give artificial respiration by mouth-to-mouth or other means of resuscitation. Do not give anything by mouth to an unconscious person.

IF THE TABLETS OR THEIR DUST ARE SWALLOWED: Drink or administer

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02400 one or two glasses of water and induce vomiting by touching back  
 02500 of throat with finger, or if available, administer syrup of  
 02550 ipecac. Do not give anything by mouth if victim is unconscious  
 02600 or not alert.

02650 IF TABLETS OR THEIR DUST GET ON SKIN OR CLOTHING: Brush or  
 02700 shake material off clothes and shoes in well ventilated area.  
 02750 Allow clothes to aerate in a ventilated area prior to  
 02800 laundering. Do not leave contaminated clothing in occupied  
 02850 and/or confined areas such as automobiles, vans, motel rooms,  
 02900 homes, etc. Wash contaminated skin thoroughly with soap and  
 02950 water.

03000 IF DUST FROM THE TABLETS GETS IN EYES: Flush with plenty of  
 03050 water. Get medical attention.

03100 See side panels for additional precautionary statements.

03150 Manufactured by: Detia Freyberg, GMBH  
 03200 P. O. Box 10  
 03250 6947 Laudenschach  
 03300 F.R. of Germany

03350 Distributed by: Research Products Company  
 03400 Div. of McShares, Inc.  
 03450 P. O. Box 1460  
 03500 Salina, KS 67402-1460

03550 EPA Establishment No. 33982W001 Net Contents:  
 03600 EPA Registration No. 2548-73 Net Contents:

LEFT PANEL

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

KEEP OUT OF REACH OF CHILDREN  
DANGER/POISON

04050 Magnesium phosphide in tablets or their dust can be fatal if  
 04100 swallowed. Do not get in eyes, in nose, on skin or on clothing.  
 04150 Do not eat, drink or smoke while handling magnesium phosphide  
 04200 fumigants. When the container is opened Detriphos(R) EOTOX(R)  
 04250 MF will begin to release hydrogen phosphide (phosphine) which is  
 04300 an extremely toxic gas. Contact with water, acids and some  
 04350 other liquids will accelerate this reaction. Pure hydrogen  
 04400 phosphide gas is odorless; the odor is due to a contaminant.  
 04450 Since an odor may not be detected under certain circumstances,  
 04500 the absence of a garlic odor does not mean that hydrogen  
 04550 phosphide gas is absent. Observe proper application and

05100 disposal procedures specified elsewhere in the labeling to  
05150 prevent overexposure.

05200  
05250 FREQUENT EXPOSURE TO LOW CONCENTRATIONS ABOVE PERMISSIBLE LEVELS  
05300 OVER A PERIOD OF DAYS OR WEEKS MAY CAUSE POISONING.  
05350

05400 NOTE TO PHYSICIAN

05450 Magnesium phosphide in tablets or their dust reacts with  
05500 moisture from the air, water, acids, and many other liquids to  
05550 release hydrogen phosphide (phosphine) gas. Mild exposure by  
05600 inhalation causes malaise (indefinite feeling of sickness),  
05650 ringing of ears, fatigue, nausea and pressure in chest which are  
05700 relieved by removal to fresh air. Moderate poisoning causes  
05750 weakness, vomiting, epigastric pain (pain just above the  
05800 stomach), chest pain, diarrhea and dyspnea (difficulty in  
05850 breathing). Symptoms of severe poisoning may occur within a few  
05900 hours or up to several days, resulting in pulmonary edema (fluid  
05950 in lungs) and may lead to dizziness, cyanosis (blue or purple  
06000 skin color), unconsciousness and death.

06100 In sufficient quantity, hydrogen phosphide affects the liver,  
06150 kidneys, lungs, nervous system and circulatory system.  
06200 Inhalation can cause lung edema (fluid in lungs) and hyperemia  
06250 (excess of blood in a body part), small perivascular brain  
06300 hemorrhages and brain edema (fluid in brain). Ingestion can  
06350 cause lung and brain symptoms, but damage to the viscera (body  
06400 cavity organs) is more common. Hydrogen phosphide poisoning may  
06450 result in (1) pulmonary edema, (2) liver elevated serum GOT, LIT  
06500 and alkaline phosphatase, reduced prothrombin, hemorrhage and  
06550 jaundice (yellow skin color) and (3) kidney hematuria (blood in  
06600 urine) and anuria (abnormal or lack of urination). Pathology is  
06650 characteristic of hypoxia (oxygen deficiency in body tissue).  
06700 Treatment is symptomatic.  
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RIGHT PANEL

DIRECTIONS FOR USE

07100  
07150 It is a violation of federal law to use this product in a  
07200 manner inconsistent with its labeling.  
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07300 The "Detiaphos(R) ROTOX(R) MF and Detiaphos(R) ROTOX(R) MP  
07350 Instruction Booklet" is a part of labeling. Refer to it for  
07400 application procedures and other information necessary to  
07450 properly use Detiaphos(R) ROTOX(R).  
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THIS PRODUCT IS ACCOMPANIED BY THE LABELING LISTED ABOVE. READ  
AND UNDERSTAND THE ENTIRE LABELING. ALL PARTS OF THE LABELING  
ARE EQUALLY IMPORTANT FOR SAFE AND EFFECTIVE USE OF THIS

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PRODUCT, CALL RESEARCH PRODUCTS COMPANY OR EPA IF YOU HAVE ANY QUESTIONS OR DO NOT UNDERSTAND ANY PART OF THIS LABELING.

Refer to product labeling for use restrictions to protect ENDANGERED SPECIES.

STORAGE AND DISPOSAL

STORAGE

Flasks should be stored in a dry, well ventilated area, away from heat and under lock and key. Post as a pesticide storage area. Do not contaminate water, food or feed by storing pesticides in the same areas used to store these commodities.

Do not store in buildings where humans or domestic animals reside. Refer to the "Deltaphos(R) ROTOX(R) MT and Deltaphos(R) ROTOX(R) MF Instruction Booklet" for additional storage instructions.

DISPOSAL OF UNREACTED OR PARTIALLY REACTED TABLETS (From spills, leaking flasks or other sources)

Unreacted or partially reacted Deltaphos(R) ROTOX(R) tablets are acutely hazardous. Improper disposal of this product is a violation of federal law.

If this product cannot be disposed of by ordinary use or according to labeling instructions, contact your state pesticide or environmental control agency or the hazardous waste representative at the nearest EPA regional office for guidance. Do not contaminate water by disposal.

Reacted tablets are not hazardous. For complete disposal, spill and leak procedures refer to the booklet "Deltaphos(R) ROTOX(R) MT and Deltaphos(R) ROTOX(R) MF Instruction Booklet."

DISPOSAL OF EMPTY FLASKS

METHOD ONE: Triple rinse flasks and lids with water. Then offer for recycling or reconditioning, or puncture and dispose of them in a sanitary landfill or other approved site or by other procedures approved by state and local authorities. Dispose of rinsate in a sanitary landfill or by other approved procedures.

METHOD TWO: Remove lids and place empty flasks outdoors or in structure being fumigated until residue in flasks is reacted. Puncture and dispose of them in a sanitary landfill or other approved site or by other procedures approved by state and local authorities.

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## GENERAL

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Consult federal, state and local disposal authorities for approved procedures other than those given above. Approved procedures vary for different types of generators.

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If in doubt concerning whether the dust is reacted and/or concerning proper disposal techniques contact Research Products Company.

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DELIAPHOS ROTOX MT (small label) -- FRONT PANEL.

**RESTRICTED USE PESTICIDE**  
**DUE TO ACUTE INHALATION TOXICITY OF HIGHLY**  
**TOXIC HYDROGEN PHOSPHIDE (PHOSPHINE, PH3) GAS**

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DANGER/PELIGRO-POISON

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03150

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03300  
03350 Manufactured by: Delia Freyberg, GMBH  
03400 P. O. Box 10  
03450 6947 Laudenbach  
03500 F.R. of Germany  
03550

03600 Distributed by: Research Products Company  
03700 Div. of McSharan, Inc.  
03750 P. O. Box 1460  
03800 Salina, KS 67402-1460  
03850

03950 EPA Establishment No. 33982NG01 Net Contents:  
04000 EPA Registration No. 2548-73

04100  
04150 LEFT PANEL

04200 HAZARDS TO HUMANS AND DOMESTIC ANIMALS

04350 KEEP OUT OF REACH OF CHILDREN  
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04900 an extremely toxic gas. Contact with water, acids and some  
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the absence of a garlic odor does not mean that hydrogen  
phosphide gas is absent. Observe proper application and

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05100 disposal procedures specified elsewhere in the labeling to  
05150 prevent overexposure.

05200 FREQUENT EXPOSURE TO LOW CONCENTRATIONS ABOVE PERMISSIBLE LEVELS  
05300 OVER A PERIOD OF DAYS OR WEEKS MAY CAUSE POISONING.

05400 NOTE TO PHYSICIAN

05450 Refer to "Detiaphos(R) ROTOX(R) M1 and Detiaphos(R) ROTOX(R) MP  
05500 Instruction Booklet" for this section.

RIGHT PANEL

DIRECTIONS FOR USE

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**RESTRICTED USE  
PESTICIDE**

**DUE TO ACUTE INHALATION TOXICITY OF HIGHLY  
TOXIC HYDROGEN PHOSPHIDE (PHOSPHINE, PH<sub>3</sub>) GAS**

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**Detiaphos(R) ROTOX(R) MT  
and  
Detiaphos(R) ROTOX(R) MP**

**INSTRUCTION BOOKLET**

EPA Registration No. 2548-73  
EPA Registration No. 2548-74  
EPA Establishment No. 33982WG01

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## I. INTRODUCTION

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## 03150 A. HISTORY

03200 The history of Detia(R) metal phosphide pesticides is long,  
 03250 dating back to the mid-1930's. In 1970 Detia(R) GAS EX-B  
 03300 was introduced into the United States. Detiaphos(R), which  
 03350 has recently been introduced into the U.S.A., contains  
 03400 magnesium phosphide as the active ingredient. The  
 03450 manufacturer, Detia Freyberg GMBH, West Germany was the  
 03500 early pioneer in the development of hydrogen phosphide as a  
 03550 fumigant gas.

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## 03650 B. PRODUCT DESCRIPTION

03700 Both Detiaphos(R) ROTOX(R) MF and Detiaphos(R) ROTOX(R) MT  
 03750 are a mixture of magnesium phosphide (34% by weight),  
 03800 ammonium carbamate and other inerts which are pressed into  
 03850 tablet and/or pellet form. The nearly spherical pellets are  
 03900 about 3/8" in diameter and weigh 0.6 grams each. The  
 03950 tablets are either disc shaped (4/5" in diameter and 1/5"  
 04000 thick) or spherical in shape (5/8" in diameter) and weigh  
 04050 3.0 grams each. A pellet will produce about 0.1 gram  
 04100 hydrogen phosphide, the tablet about 0.5 gram. Both react  
 04150 with atmospheric moisture to produce hydrogen phosphide  
 04200 (PH3) in the following way:

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04400 Warm, humid air accelerates the reaction while cool, dry air  
 04450 has the opposite effect.

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04550 Detiaphos(R) ROTOX(R) also contains ammonium carbamate which  
 04600 liberates ammonia and carbon dioxide as follows:

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04750

04800 These gases are essentially nonflammable and act as inerting  
 04850 agents to reduce fire hazards. The ammonia gas also serves  
 04900 as a warning agent.

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## 05000 C. PRODUCT PACKAGING

05050 The tablets are packaged 500 and 100 to a flask. The  
 05100 pellets are packaged 1660 and 500 to a flask.

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05200 The aluminum flasks in which they are packaged are  
 05250 resealable and seamless. Their shelf life is almost  
 05300 unlimited as long as the packaging remains well sealed and  
 05350 intact. Once opened, the flasks may be tightly resealed and  
 05400 stored for future use.

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## 05500 D. WHAT IS HYDROGEN PHOSPHIDE?

05550 Hydrogen phosphide, more commonly referred to as phosphine,  
 05600 is a colorless gas which is toxic to rodents, humans, and  
 05650 other forms of animal life. It is very mobile with a high

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vapor pressure. Thus, the penetrating capability of hydrogen phosphide is great. The combination of high molecular activity, vapor pressure and toxicity at low dosages accounts for its wide acceptance as a fumigant.

E. SAFETY RECOMMENDATIONS

1. Carefully read the labeling and follow instructions explicitly.
2. Never allow uninstructed persons to handle Detiaphos(R).
3. Wear dry gloves made of cotton or other material when contact with tablets, pellets or their dust is likely.
4. Open fumigant containers in open air. Never open in a flammable atmosphere.
5. Do not allow Detia(R) to contact liquid water or to pile up.
6. Dispose of empty containers in a proper manner consistent with the label instructions.
7. Aerate contaminated clothing in well ventilated area prior to washing.
8. Keep containers tightly closed except when removing product.
9. Do not re-use magnesium phosphide containers for any purpose other than recycling or reconditioning.
10. OSHA recommends that the exposure screening of employees be conducted to detect impaired pulmonary function. OSHA recommends that any employees developing the above condition be referred for medical attention.

II. PRECAUTIONARY STATEMENTS

A. HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Keep Out of Reach of Children  
DANGER-POISON

Magnesium phosphide in pellets, tablets or their dust can be fatal if swallowed. Do not get in eyes, in nose, on skin or on clothing. Do not eat, drink or smoke while handling magnesium phosphide fumigants. When the container is opened, Detiaphos(R) ROTOX(R) will begin to release hydrogen phosphide (phosphine) which is an extremely toxic gas. Contact with water, acids and some other liquids will accelerate this reaction. Pure hydrogen phosphide gas is odorless; the odor is due to a contaminant. Since an odor may not be detected under certain circumstances, the absence of a garlic odor does not mean that hydrogen phosphide gas is absent. Observe proper application and disposal procedures specified elsewhere in the labeling to prevent overexposure.

FREQUENT EXPOSURE TO CONCENTRATIONS ABOVE PERMISSIBLE LEVELS

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08450 OVER A PERIOD OF DAYS OR WEEKS MAY CAUSE POISONING.

08500

08550 B. STATEMENT OF PRACTICAL TREATMENT

08600 Symptoms of overexposure to hydrogen phosphide are headache,

08650 dizziness, nausea, difficult breathing, vomiting and

08700 diarrhea. In all cases of overexposure get medical

08750 attention immediately. Take victim to a doctor or emergency

08800 treatment facility.

08850

08900 U 1. If gas or dust from tablets or pellets is inhaled: Get

09000 exposed person to fresh air. Keep warm and make sure

09050 person can breathe freely. If breathing has stopped,

09100 give artificial respiration by mouth-to-mouth or other

09150 means of resuscitation. Do not give anything by mouth

09200 to an unconscious person.

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09300 U 2. If the pellets, tablets or their dust are swallowed:

09400 Drink or administer one or two glasses of water and induce

09450 vomiting by touching back of throat with finger, or if

09500 available, administer syrup of ipecac. Do not give

09550 anything by mouth if victim is unconscious or not alert.

09600

09700 U 3. If pellets, tablets or their dust gets on skin or

09800 U clothing: Brush or shake material off clothes and shoes in

09850 well ventilated area. Allow clothes to aerate in a ventilated

09900 area prior to laundering. Do not leave contaminated

09950 clothing in occupied and/or confined area such as

10000 automobiles, vans, motel rooms, homes, etc. Wash

10050 contaminated skin thoroughly with soap and water.

10100

10200 U 4. If dust from the pellets or tablets gets in eyes:

10250 Flush with plenty of water. Get medical attention.

10300

10350 C. NOTE TO PHYSICIAN

10400 Magnesium phosphide tablets, pellets or their dust reacts

10450 with moisture from the air, water, acids and many other

10500 liquids to release hydrogen phosphide (phosphine) gas. Mild

10550 exposure by inhalation causes malaise (indefinite feeling of

10600 sickness), ringing of ears, fatigue, nausea and pressure in

10650 chest which are relieved by removal to fresh air. Moderate

10700 poisoning causes weakness, vomiting, epigastric pain (pain

10750 just above the stomach), chest pain, diarrhea and dyspnea

10800 (difficulty in breathing). Sympt of severe poisoning may

10850 occur within a few hours or up to several days, resulting in

10900 pulmonary edema (fluid in lungs) and may lead to dizziness,

10950 cyanosis (blue or purple skin color), unconsciousness and

11000 death.

11050

11100 In sufficient quantity hydrogen phosphide affects the liver,

11150 kidneys, lungs, nervous system, and circulatory system.

11200 Inhalation can cause lung edema (fluid in lungs) and

11250 hyperemia (excess of blood in a body part), small

11300 perivascular brain hemorrhages and brain edema (fluid in

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brain). Ingestion can cause lung and brain symptoms, but damage to the viscera (body cavity organs) is more common. Hydrogen phosphide poisoning may result in (1) pulmonary edema, (2) liver elevated serum GOT, LDH and alkaline phosphatase, reduced prothrombin, hemorrhage and jaundice (yellow skin color) and (3) kidney hematuria (blood in urine) and anuria (abnormal or lack of urination). Pathology is characteristic of hypoxia (oxygen deficiency in body tissue). Frequent exposure over a period of days or weeks may cause poisoning. Treatment is symptomatic.

The following measures are suggested for use by the physician in accordance with his own judgment:

1. In its milder to moderate forms (symptoms of poisoning may take up to 24 hours to make their appearance), the following is suggested:
  - a. Complete rest 1-2 days during which the patient must be kept quiet and warm.
  - b. If the patient suffers from vomiting or increased blood sugar, appropriate solutions should be administered. Treatment with oxygen is recommended as is the administration of cardiac and circulatory stimulants.
2. In cases of severe poisoning (intensive care unit recommended):
  - a. Where pulmonary edema is observed, steroid therapy should be considered and close medical supervision is recommended. Blood transfusions may be necessary.
  - b. In case of manifest pulmonary edema, venesection should be performed under vein pressure control. Heart glycosides (I.V.) can be used in case of hemoconcentration. Venesection may result in shock. In the case of progressive edema of the lungs, immediately intubate and remove edema fluid and administer oxygen over-pressure respiration, as well as any measures required for shock treatment. In case of kidney failure, extracorporeal hemodialysis is necessary. There is no specific antidote known for this poisoning.
  - c. If pellets or tablets are ingested, induce vomiting. Flush the stomach with a diluted potassium permanganate solution or a solution of magnesium peroxide until flushing liquid ceases to smell of carbide. Thereafter, apply carbomedicinalis.

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## 14100 D. PHYSICAL AND CHEMICAL HAZARDS

14150 Magnesium phosphide in tablets, pellets or partially spent  
 14200 dust will release hydrogen phosphide gas if exposed to  
 14250 moisture from the air or if it comes into contact with  
 14300 water, acids or many other liquids. Filing of tablets,  
 14350 pellets or dust from their fragmentation may cause a  
 14400 temperature increase and confine the release of gas so that  
 14450 ignition could occur.

14500  
 14550 Always open flasks of Detiaphos(R) ROTOX(R) in open air.  
 14600 Never open in a flammable atmosphere because on rare  
 14650 occasions they may flash. When opening, point the container  
 14700 away from the face and body and slowly loosen the cap.  
 14750 These precautions will also reduce the applicator's exposure  
 14800 to hydrogen phosphide gas.

14850  
 14900 Pure hydrogen phosphide gas is practically insoluble in  
 14950 water and oils and is stable at normal fumigation  
 15000 temperatures. However, it may react with certain metals and  
 15050 cause corrosion, especially at higher temperatures and  
 15100 relative humidities. Metals such as copper, brass and other  
 15150 copper alloys, and precious metals such as gold and silver  
 15200 are susceptible to corrosion by hydrogen phosphide.

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## III. DIRECTIONS FOR USE

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 15500

## A. GENERAL

15550 1. It is a violation of federal law to use this product in  
 15600 a manner inconsistent with its labeling. Detiaphos(R)  
 15650 ROTOX(R) MT and MF are Restricted Use Pesticides due to  
 15700 the acute inhalation toxicity of hydrogen phosphide  
 15750 (phosphine, PH<sub>3</sub>) gas. These products are for retail  
 15800 sale to and use only by certified applicators for those  
 15850 uses covered by the applicator's certification or  
 15900 persons trained in accordance with this product manual  
 15950 working under the direct supervision and in the physical  
 16000 presence of the certified applicator. Physical presence  
 16050 means on site or on the premises.

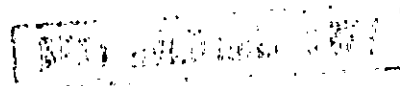
16100  
 16150 2. Detiaphos(R) is a highly hazardous material and may be  
 16200 used only by individuals trained in its proper use.  
 16250 Before using, read and follow the label precautions and  
 16300 directions on the label and in labeling.

16350  
 16400 Additional copies of this manual are available from:

16450  
 16500 Research Products Company  
 16550 Div. of McShares, Inc.  
 16600 P. O. Box 1460  
 16650 Salina, Kansas 67402-1460  
 16700 913-825-2181

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3. Do not fumigate with this product when burrow temperature is below 40 degrees F (5 degrees C).
- B. PROTECTIVE CLOTHING  
Wear dry gloves made of cotton or other material when contact with tablets, pellets, or their dust is likely. Wash hands after use.
- C. RESPIRATORY PROTECTION  
Respiratory protection need not be available for outdoor applications.
- D. HYDROGEN PHOSPHIDE EXPOSURE LIMITS  
Exposure to hydrogen phosphide must not exceed the 8 hour TWA of 0.3 ppm.
- E. INDUSTRIAL HYGIENE MONITORING  
Monitoring is not required outdoors.
- F. LIST OF BURROWING PESTS  
Detiaphos(R) ROTOX(R) may be used out of doors only for the control of the following burrowing rodents and moles: marmot sp. - woodchucks and yellow-belly marmots (rockchucks), prairie dogs (except Utah prairie dog), Norway and roof rats, mice, ground squirrels, moles (except in Indiana), voles, gophers and chipmunks (except in California).
- G. APPLICATION INSTRUCTIONS  
Add from 2 to 8 Detiaphos(R) ROTOX(R) MT tablets or 10 to 40 Detiaphos(R) ROTOX(R) MP pellets to each burrow opening. Seal tightly by shoveling soil over the entrance. Place the pellets or tablets far enough down the burrow that the soil used to plug the burrow doesn't cover the pellets or tablets, slowing down their action. Where possible, subsurface tunnels or runways should be treated every 5 to 10 feet with a dose of 4 to 8 tablets or 20 to 40 pellets. Use lower rates in smaller burrows, in tight soils, under moist soil conditions and higher rates in larger burrows, in porous soils and/or when soil moisture is low. In extremely dry or porous soil, it is sometimes not possible to obtain satisfactory results. This is particularly true in instances where the burrow systems are extensive such as moles or gophers. It is always better not to fumigate during extended periods of dry weather. Treat reopened burrows and fresh runways a second time 1 to 3 days after the initial treatment.
- Detiaphos(R) may be used out of doors only, for control of burrowing pests. Do not use within 15 feet (5 meters) of inhabited structures. Do not apply to burrows which may open under or into occupied buildings.





## 19500 H. ENVIRONMENTAL HAZARDS

19550 This product is highly toxic to wildlife. Non-target  
 19600 organisms exposed to hydrogen phosphide gas in burrows will  
 19650 be killed. Do not apply directly to water or wetlands  
 19700 (swamps, bogs, marshes, and potholes). Do not contaminate  
 19750 water by cleaning of equipment or disposal of wastes.  
 19800

## 19850 I. ENDANGERED SPECIES RESTRICTIONS

19900 The use of Detia(R) ROTOX(R) in a manner that may kill or  
 19950 otherwise harm an endangered or threatened species or  
 20000 adversely modify their habitat is a violation of federal  
 20050 laws. Before using this pesticide on range and/or  
 20100 pastureland in the counties listed below, you must obtain  
 20150 the PESTICIDE USE BULLETIN FOR PROTECTION OF ENDANGERED  
 20200 SPECIES for the county in which the product is to be used.  
 20250 The bulletin is available from your county extension agent,  
 20300 state fish and game office, or your pesticide dealer. Use  
 20350 of this product in a manner inconsistent with the PESTICIDE  
 20400 USE BULLETIN FOR PROTECTION OF ENDANGERED SPECIES is a  
 20450 violation of federal laws.  
 20500

20550 Even if applicable county bulletins do not prohibit the use  
 20600 of this product at the intended site of application, you may  
 20650 not use this product for control of prairie dogs in the  
 20700 states of Arizona, Colorado, Kansas, Montana, Nebraska, New  
 20750 Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah or  
 20800 Wyoming unless a pre-control survey has been conducted.  
 20850 Contact the nearest U.S. Fish and Wildlife Service  
 20900 endangered species specialist to determine survey  
 20950 requirements in your area. This survey must be in  
 21000 compliance with the black-footed ferret survey guidelines,  
 21050 developed by the U.S. Fish and Wildlife Service, and a  
 21100 determination must be made in accordance with the guidelines  
 21150 that black-footed ferrets are not present in the treatment  
 21200 area.  
 21250

## 21300 CALIFORNIA

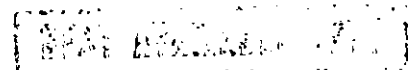
21350 Fresno, Inyo, Kern, Kings, Madera, Merced, Monterey, San  
 21400 Benito, San Luis Obispo, Santa Barbara, Stanislaus and  
 21450 Tulare  
 21500

## 21550 FLORIDA

21600 Statewide  
 21650

## 21700 GEORGIA

21750 Appling, Atkinson, Bacon, Baker, Ben Hill, Bleckley,  
 21800 Berrien, Brantley, Brooks, Bryan, Bullock, Calhoun, Camden,  
 21850 Candler, Charlton, Chatham, Clinch, Coffee, Colquitt, Cook,  
 21900 Crisp, Decatur, Dodge, Dooly, Daugherty, Early, Echols,  
 21950 Effingham, Emanuel, Evans, Glynn, Grady, Irwin, Jeff Davis,  
 22000 Jenkins, Johnson, Lanier, Laurens, Lee, Liberty, Long,  
 22050 Lowndes, Macon, McCintosh, Miller, Mitchell, Montgomery,  
 22100 Pierce, Pulaski, Screven, Seminole, Telfair, Tattnall,



- 22200 Thomas, Tift, Toombs, Treutlen, Turner, Ware, Wayne,  
22250 Wheeler, Wilcox and Worth  
22300  
22350 NEW MEXICO  
22400 Hidalgo  
22450  
22500 UTAH  
22550 Beaver, Garfield, Iron, Kane, Piute, Sevier, Washington and  
22600 Wayne  
22650  
22700 WYOMING  
22750 Albany  
22800  
22850 J. SPECIAL LOCAL RESTRICTIONS  
22900  
22950 (1) NORTH CAROLINA  
23000 Dethiaphos(R) ROTOX(R) may only be used for control of  
23050 rats and mice in the state of North Carolina. Use  
23100 against other pests is not permitted.  
23150  
23200 (2) OKLAHOMA  
23250 A special permit for black-tailed prairie dog control  
23300 by poisoning is required in Oklahoma. Contact the  
23350 Oklahoma State Department of Wildlife Conservation to  
23400 obtain this permit.  
23450  
23500 (3) WISCONSIN  
23550 A state permit is required for use of pesticides in  
23600 Wisconsin to control small mammals, except rats or  
23650 mice. Please contact your local Department of Natural  
23700 Resources office for information.  
23750  
23800 (4) INDIANA  
23850 Use of Dethiaphos(R) ROTOX(R) for mole control is not  
23900 legal in the state of Indiana.  
23950  
24000 (5) MISSOURI  
24050 A state permit is required for use of pesticides in  
24100 Missouri to control small mammals, except rats and  
24150 mice. Please contact the Missouri Department of  
24200 Conservation office for information.  
24250  
24300 (6) KANSAS  
24350 A special permit for black-tailed prairie dog control  
24400 by poisoning is required in Kansas. Contact the Kansas  
24450 Fish and Game Commission to obtain this permit.  
24500  
24550 (7) CALIFORNIA  
24600 Use of Dethiaphos(R) ROTOX(R) for chipmunk control is not  
24650 legal in the state of California.  
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24800 K. STORAGE AND DISPOSAL

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1. STORAGE

Flasks should be stored in a dry, well ventilated area, away from heat and under lock and key. Post as a pesticide storage area. Do not contaminate water, food or feed by storing pesticides in the same areas used to store these commodities. Do not store in buildings where humans or domestic animals reside. Keep out of reach of children.

Detiaphos(R) ROTOX(R) is supplied in gas tight resealable, aluminum flasks. Do not expose the product inside flasks to atmospheric moisture any longer than is necessary. Seal tightly before returning opened flasks to storage. The shelf life of Detiaphos(R) is virtually unlimited if the containers are tightly sealed.

2. DISPOSAL OF UNREACTED OR PARTIALLY REACTED TABLETS OR PELLETS

(From spills, leaking flasks or other sources) Unreacted or partially reacted Detiaphos(R) ROTOX(R) MP or Detiaphos(R) ROTOX(R) MT are acutely hazardous. Improper disposal of these products is a violation of federal law. If these products cannot be disposed of by ordinary use or according to the instructions that follow, contact your state pesticide or environmental control agency or the hazardous waste representative at the nearest EPA regional office for guidance. Do not contaminate water by disposal.

Some local and state waste disposal regulations may vary from the following recommendations. Disposal procedures should be reviewed with appropriate authorities to ensure compliance with local regulations.

FOR SPECIFIC INSTRUCTIONS SEE "SPILL AND LEAK PROCEDURES" BELOW.

3. DISPOSAL OF EMPTY FLASKS

a. Method One: Triple rinse flasks and stoppers with water. Then offer for recycling or reconditioning, or puncture and dispose of them in a sanitary landfill or other approved site or by other procedures approved by state and local authorities. Dispose of rinsate in a sanitary landfill or by other approved procedures. Small quantities can be poured out on the ground.

b. Method Two: Remove lids and place empty flasks outdoors until residue in flasks is reacted. Puncture and dispose of them in a sanitary landfill or other approved site or by other procedures approved by state and local authorities.

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L. SPILL AND LEAK PROCEDURES

1. GENERAL

A spill, other than incidental to application or normal handling or punctured flasks can produce high levels of gas, and therefore, attending personnel must wear a SCBA or its equivalent when the concentration of hydrogen phosphide gas is unknown. If the concentration is known, other NIOSH/MSHA approved respiratory protection can be worn. Wear dry cotton or other gloves when handling spilled material.

2. DAMAGE TO FIBERBOARD CASE

Check aluminum flasks. If they are damaged handle as described below. If they are undamaged return them to cardboard cartons or other suitable packaging which complies with DOT regulations.

3. LEAKING FLASK PROCEDURES

If aluminum flasks have been punctured or damaged causing a leak, the product may be immediately used, the container may be temporarily repaired with aluminum tape or the Detiaphos(R) may be transferred from the damaged flask to a sound metal container which should be sealed and properly labeled as magnesium phosphide. Transport the damaged containers to an area suitable for pesticide storage for inspection. Further instructions and recommendations may be obtained, if required, from Research Products Company.

Handle empty damaged containers as described under "DISPOSAL OF EMPTY FLASKS" above.

4. SPILL PROCEDURES

Do not flush spillage down drain with water. DO NOT use water at anytime to clean up a spill. Water in contact with unreacted tablets or pellets will rapidly accelerate the production of hydrogen phosphide gas and could cause spontaneous ignition of the gas. If the spill is only a few minutes old and is not contaminated by other materials, collect the spillage and place it back into the original flask or other sound metal container and tighten the cap. If possible use immediately. CAUTION: AN IGNITION MAY OCCUR WHEN THESE CONTAINERS ARE REOPENED.

If the spilled material is contaminated or has begun to visibly decompose, gather it up and place it into open top, perforated gallon cans and process it immediately.

Do not add more than about one flask (2 to 3 lbs.) of spilled material to the bucket. If on-site deactivation is not feasible, these open containers should be transported in open vehicles to a suitable

30450 area away from occupied buildings. Wet or dry  
 30500 deactivation must then be carried out as described in the  
 30550 section immediately below.  
 30600

30700 U 5. DEACTIVATION AND DISPOSAL OF UNREACTED OR PARTIALLY REACTED  
 30750 TABLETS OR PELLETS

30800 U a. Wet Method

30900 Transport material by hand or in open vehicles to  
 30950 open air away from occupied structures. Fill a drum  
 31000 2/3 full with water.  
 31050

31100 Add 1/4 cup of low sudsing detergent or surfactant  
 31150 in each gallon of water. Each flask of tablets or  
 31200 pellets should be mixed with no less than 1 gallon  
 31250 of water/detergent solution. Slowly pour the  
 31300 material into the water as it is stirred. Stir  
 31350 occasionally thereafter for at least 6 hours.  
 31400 Appropriate respiratory protection must be worn. DO  
 31450 NOT COVER THE CONTAINER. IF THE CONTAINER IS  
 31500 COVERED THE HYDROGEN PHOSPHIDE BEING GENERATED WILL  
 31550 BE CONFINED AND WILL DECOMPOSE EXPLOSIVELY. The wet  
 31600 method of deactivation is the method of choice for  
 31650 quantities in excess of 5 flasks (10 to 15 pounds).  
 31700 It is safe to dispose of this slurry.  
 31750

31800 Dispose of the resulting deactivated slurry, with or  
 31850 without preliminary pouring out of excess water, at  
 31900 a sanitary landfill or other suitable burial site  
 31950 approved by local authorities. Where permissible  
 32000 this slurry may be poured into a storm sewer or out  
 32050 onto the ground.  
 32100

32200 U b. Dry Method

( 32250 As an alternative to the wet method, when  
 32300 permissible small amounts (up to 5 flasks) of  
 32350 partially reacted or unreacted material may be  
 32400 spread out in an open, secure area away from  
 32450 occupied buildings to be deactivated by atmospheric  
 32500 moisture.  
 32550

32600 NOTE: Never place pellets, tablets, their dust or  
 32650 the dust/water slurry in a confined container such  
 32700 as a closed drum or plastic bags. Any hydrogen  
 32750 phosphide generated will be confined and may  
 32800 decompose explosively.

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