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INSTRUCTIONS
FOR INTRANSIT
FUMIGATION OF
SHIP HOLDS
WITH

Detia(R)
PELLETS

AND

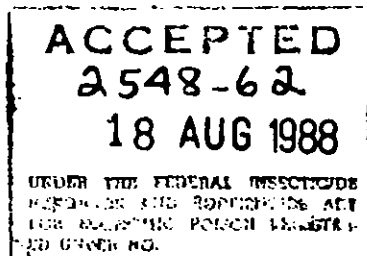
TABLETS

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

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EPA Establishment No. 33982W001
EPA Registration No. 2548-63
EPA Registration No. 2548-62



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(1) Refer to and comply with the regulations and procedures found in U. S. Coast Guard regulation, 46 CFR 147A.

(2) Prior to fumigating a vessel for intransit cargo fumigation, the master of the vessel or his representative, and the fumigator must determine whether the vessel is suitably designed and configured so as to allow for safe occupancy by the ship's crew throughout the duration of the fumigation/voyage.

If it is determined that the design and configuration of the vessel does not allow for safe occupancy by the ship's crew throughout the duration of the fumigation/voyage, then the vessel will not be fumigated unless all crew members are removed from the vessel. The crew members will not be allowed to re-occupy the vessel until the vessel has been properly aerated and a determination has been made by the master of the vessel and the fumigator that the vessel is safe for occupancy.

(3) The person responsible for the fumigation must notify the master of the vessel, or his representative of the requirements relating to personal protection equipment, low range detection equipment and that a person qualified in the use of this equipment must accompany the vessel with cargo under fumigation. Emergency procedures, cargo ventilation, periodic monitoring and inspections, and first aid measures must be discussed with and understood by the master of the vessel or his representative.

(4) Seal all openings to the cargo hold or tank using suitable, water proof, gas tight materials. Lock and/or otherwise secure all openings, manways, etc. used to enter the hold. Post appropriate "DANGER" placards on same.

(5) On tankers the over-space pressure relief system of each tank must be sealed by (1) the closing of appropriate valves and (2) sealing the opening into the over-space with gas tight materials.

(6) Contact appropriate authorities.

(7) If the fumigation is not completed and the vessel aerated before the manned vessel leaves port, the person in charge of the vessel shall insure that at least two units of personal protection equipment and one gas or vapor detection device and a person qualified in their operation be on board the vessel during the voyage.

(8) During the fumigation or until a manned vessel leaves port or the cargo is aerated, the person in charge of

the fumigation shall insure that a qualified person using gas or vapor detection equipment test spaces adjacent to the fumigated cargo area and all regularly occupied spaces for fumigant 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 or his representative of the leakage so that corrective action can be taken.

- (9) Review with the master, or his representative, the voyage precautions and procedures.

*Personal protection equipment means a respirator or gas mask fitted with a canister designed for phosphine gas which is approved by NIOSH/MSHA. A gas mask and canister is approved for use up to 15 ppm. Above 15 ppm or at unknown concentrations a SCBA or its equivalent must be used.

Usage Guide

PELLETS	TABLETS	UNIT OF VOLUME*
150-250	30-50	1000 CU. FT.
200-375	40-75	1000 BUSHELS

*Volume or storage capacity of the area being treated.

Procedures for Bulk Dry Cargo Vessels and Tankers:

- (1) Apply either the tablets or pellets by scattering them uniformly onto the commodity surface utilizing as much of the total surface area as possible, or insert them uniformly into the commodity mass by hand or with probes to any depth desired.

- (2) Close and secure hatch covers, tank tops, butterworths, etc. immediately following application.

Voyage Precautions and Procedures:

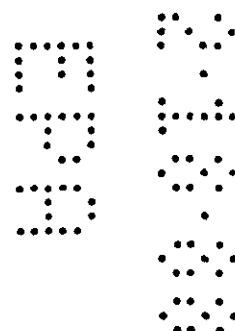
- (1) At regular intervals monitor spaces adjacent to areas containing fumigated cargo and all regularly occupied areas for fumigant leakage using appropriate gas detection equipment.

Special attention should be given to living quarters, kitchens, storerooms, passageways, keel ducts, day rooms, the bridge, engine room and any other enclosed spaces occupied or frequented by crew members during a voyage.

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- 10400 (2) If hydrogen phosphide is detected, evacuate the space or
 10450 area, locate and seal off the source of the leak wearing
 10500 appropriate respiratory protection equipment. Ventilate
 10550 the area before allowing occupants to return.
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 10650 (3) Do not enter fumigated holds or tanks.
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 10750 (4) Do not open, ventilate or aerate the fumigated holds during
 10800 the voyage.

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10300 H a. Precautions and Procedures During Discharge:

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11500 H b. Personal Protective Equipment and Monitoring:

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If necessary to enter holds prior to discharge, test spaces directly above cargo surface for fumigant concentration, using appropriate gas detection and personal protection equipment. Do not allow entry into fumigated areas without personal protection equipment, unless fumigant concentrations are at safe levels, as indicated by a suitable detector.

- (1) Fully loaded holds on dry bulk carriers are considered an outdoor fumigation.
- (2) Tanker holds which must be entered to fumigate and partially loaded holds on dry bulk carriers are fumigated from within the area being treated.
- (3) See sections "I" and "II" on pages of the manual titled "Application Procedures for Dettia(R) Pellets and Dettia(R) Tablets" for requirements.
- (4) If hydrogen phosphide is detected a minimum of two qualified persons on ship should wear the gas mask and canister described above while aerating the area and locating and sealing the leak.

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