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 REGISTRATION DIVISION  
 PESTICIDES EPA



# VERTIFUME<sup>\*</sup> S

## SPECIMEN LABEL

EFFECTIVE FUMIGANT  
 FOR CONTROLLING  
 INSECT PESTS IN STORED GRAIN

Active Ingredients: Carbon Tetrachloride..... 79.5%  
 Carbon Bisulfide..... 16.5%  
 Sulfur Dioxide..... 3.0%

Inert Ingredients..... 1.0%

E.P.A. Registration No. 464-227

E.P.A. Est. No. 464-TX-1<sup>TA</sup> TB; 32761-MO-1<sup>D</sup>

Superscript used corresponds to letter in Lot No.

Use VERTIFUME S fumigant to control granary weevil, rice weevil, lesser grain borer, saw-toothed grain beetle, confused flour beetle, red flour beetle, cardelle beetle, Indian meal moth, Mediterranean flour moth, Angoumois grain moth, flat grain beetle, pea weevil, bean weevil and cereal leaf beetle

### GENERAL INFORMATION AND SAFETY PRECAUTIONS

The successful use of liquid grain fumigants depends upon several details: (1) All grain storages should be tightly built. Before applying the fumigant, seal the structure as gas-tight as possible, especially below the surface of the grain. (2) Have the grain surface level and no higher than six inches below the top of the bin sides. (3) Apply the fumigant in a safe manner, from outside the building if at all possible. During actual application, always have someone on hand to help in case of accident. Have him stand outside where he can see the man working inside. CAUTION: When it is necessary to enter a large bin for application or to enter an area already under fumigation, wear a full face gas mask with black canister meeting specifications of the U. S. Bureau of Mines for organic vapors, or use an air-supplied respirator. (4) In general, fumigant should be applied with a hand or power sprayer. Replace the nozzle with a tube or pipe flattened at the end to give a broad, coarse stream. (5) For best results do not disturb stored grain for at least 3 days and preferably 1 week after treatment. (6) Do not fumigate often or at higher dosages than recommended here. (7) Best results are obtained during cool, calm periods of the day, since high air temperature and strong winds increase vaporization and loss of the fumigant.

In fumigating, the temperature of the grain itself is important, rather than the temperature of the air outside the grain mass. It is not advisable to fumigate grains other than rice when the average grain temperature is below 60 F., since at lower temperatures the insects are relatively inactive, and the fumigant is less effective because of its reduced volatility. Several methods are available for determining grain temperature.

**NOTE:** For better insect control, spray the inside of the bin with a grain bin insecticide one week before filling. Spray the outside of the bin just before fumigation.

### DIRECTIONS

**FLAT STORAGE:** Large flat storages, such as quonset huts, should be treated with power equipment. Speed of application and observance of above safety precautions are essential in this type of fumigation.

**ELEVATOR STORAGE:** Fumigate grain with VERTIFUME S when it is being put into the bin or being turned. The fumigant may be pumped or poured from outside over the grain between drafts, which should not exceed 15 foot depths in the bin. Give double dosages to top and bottom drafts. Under conditions of long storage or intense insect attack, retreatment may be necessary. Need may be determined by observation of live insects and by overheating of grain because of insect activity.

**BOX CARS:** Apply VERTIFUME S from outside the doorway of the car (or wear a gas mask), using hand or power sprayer with special pipe nozzle. Close and seal doors immediately. For best results, do not move the car for at least 12 hours.

**BULK CERTIFIED OR HYBRID SEED GRAIN:** Bulk seed grain may be fumigated by strict adherence to dosage recommendations, and by observing the following precautions to avoid damage and loss of seed viability. (1) The moisture content of the seed must be less than 12% and preferably less than 10%. (2) The seed temperature during the exposure period should be between 65 F. and 85 F. (3) The fumigant exposure period should be not more than 24 hours, and provision must be made to remove the fumigant by aeration immediately after the 24-hour exposure. This may be accomplished in tight structures by the use of aeration fans, and in loosely constructed storages by breaking all seals applied when preparing for fumigation. Do not fumigate low viability seed, as germination may be further reduced. See Safety Precautions.

### RECOMMENDED DOSAGES

Grain Temperature 60 F. or Higher		Wheat Rye, Barley	Corn Oats	Grain Sorghums
Types of Storage		Gallons per 1000 Bushels †		
Flat Storage	Wooden Bins	4	6	8
	Steel and Concrete Bins	3	5	7
Elevator Storage	Wooden Cribbed Bins	3	6	8
	Steel and Concrete Bins	2	4	6
		Gallons per Box Car		
Box Cars	Average Condition and Loc.	5	8	12

† Note: On less-than-1000 bushel lots, use the same dosage as recommended for 1000 bushels. With very small lots, wet the entire surface with fumigant.

**CEREAL LEAF BEETLE:** For control of Cereal Leaf Beetle in trucks hauling grain at harvest from infested to non-infested areas. Before loading with grain seal all holes and cracks in truck bed. When loaded apply VERTIFUME S evenly over grain surface with sprinkling can or sprayer at the following dosages: 1 1/2 gallons for less than 300 bushels, 3 gallons for 300 to 500 bushels, 4 gallons for 500 to 1000 bushels. Immediately after application cover grain with plastic sheeting such as POLYFILM polyethylene film or other suitable tarpaulin. To prevent excessive loss of the fumigant protect trucks from strong winds and do not move the trucks being fumigated, nor remove the cover for at least 2 hours after application.

**Caution:** Personnel applying VERTIFUME S and placing the cover over the treated grain should wear either an air-supplied respirator or a full face gas mask equipped with a fresh black canister for organic vapors.

**RICE:** Use 4 gallons of VERTIFUME S per 1000 bushels if average grain temperature is 75 F. or above. If temperature is between 60 F. and 75 F., use 6 gallons per 1000 bushels. If necessary to fumigate when grain temperature is below 60 F., use 8 gallons per 1000 bushels. See Safety Precautions.

**RECIRCULATION METHOD:** With recirculation, dosage can be reduced as much as 50% to 70% below those hereon recommended for VERTIFUME S because of more efficient use of the fumigant. For dosage and use recommendations with recirculation consult your local Dow dealer or write to The Dow Chemical Company, Midland, Michigan, and request Bulletin No. 132-62-60.

Do not reuse container. Dispose of empty container and waste by burying in non-croplands away from water supplies.

**NOTE:** Do not use containers or handling equipment of aluminum, magnesium, or their alloys, as under certain conditions VERTIFUME S may be severely corrosive to such metals.

**DANGER POISON**

**KEEP OUT OF REACH OF CHILDREN  
 HAZARDOUS VAPOR AND LIQUID  
 MAY BE FATAL IF INHALED OR SWALLOWED  
 CAUSES SKIN IRRITATION UPON CONTACT  
 MAY CAUSE EYE IRRITATION**

**Use Only With Adequate Ventilation  
 Do Not Breathe Vapor. • Do Not Take Internally  
 Avoid Contact With Skin, Eyes, or Clothing**

In case of skin contact, wash with soap and water. For eyes, flush with plenty of water for at least 15 minutes and get medical attention. Remove and wash clothing before re-use. Do not wear shoes until free of all chemical odor.

If illness results from inhalation, remove to fresh air and call a physician. If swallowed, call a physician. Induce vomiting by giving an emetic such as 2 table-spoonfuls of salt in a glass of warm water.

Do not use fumigated material or feed it to livestock until aeration has eliminated the odor of the fumigant.

**AVOID CONTACT WITH FLAME OR HOT SURFACE**

SEE YOUR STATE AGRICULTURAL EXPERIMENT STATION FOR GENERAL INFORMATION

STORE IN A TIGHTLY CLOSED CONTAINER, IN A COOL LOCATION AWAY FROM DWELLINGS. KEEP FUMIGANT PROPERLY LABELLED.

**NOTICE:** Seller warrants that the product conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with the directions under normal conditions of use, but neither this warranty nor any other warranty made by the seller extends to the FITNESS FOR A PARTICULAR PURPOSE, express or implied, extends to the product when used contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to seller, and buyer assumes the risk of any such use.

## THE DOW CHEMICAL COMPANY

AND SUBSIDIARIES

MIDLAND MICHIGAN 48640 USA ZURICH SWITZERLAND HONG KONG BCC  
 CORAL GABLES FLORIDA 33134 USA SARNIA ONTARIO CANADA

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REVISIONS INCLUDE: (1) ADD EPA ESTABLISHMENT NUMBERS  
 (2) ADD AGRICULTURAL STATEMENT.