

DOWFUME[®] F

AN EFFECTIVE FUMIGANT FOR CONTROL OF
INSECT PESTS IN STORED GRAIN

U.S.D.A. Registration No. 464-193

Active Ingredients	-----	100%
Ethylene Dichloride	-----	65%
Carbon Tetrachloride	-----	27%
Ethylene Dibromide	-----	5%
Sulfur Dioxide	-----	3%

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. If it is necessary to enter a large bin for application or to enter an area already under fumigation, wear a **suitable gas mask**, such as a full-face mask with a FRESH! black canister for organic vapors. (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) After treatment, do not disturb the grain for at least three days, and preferably for a week (except as recommended below). (6) Do not fumigate oftener or at higher dosages than recommended here. (7) Best results are obtained during cool, calm periods of the day, since high air temperatures 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 10 to 14 days before filling. Spray outside of 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 when it is being put into the bin or being turned. 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 fumigant 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

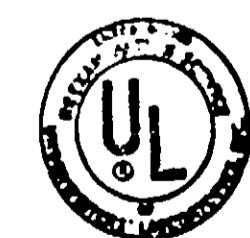
Grain Temperature of 60°F. or Higher		Wheat, Rye, Barley	Corn, Oats	Grain Sorghums
		Gallons per 1000 Bushels*		
Flat Storage	Wooden Bins	4	6	8
	Steel and Concrete Bins	3	5	7
Elevator Storage	Wooden Cribbed Bins	3	6	8
	Steel and Concrete Bins	2	4	6
		Gallons per Box Car		
Box Cars	Average Conditions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

RICE: Use 4 gallons of fumigant 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.

SEE
NOTE: Do not use in areas where children or their animals are present, or where there is a possibility of access to such areas.

WHEN TO USE: Use in case of insect infestation and when weather conditions are favorable. If illness occurs, stop use immediately. Do not use in areas where children or their animals are present, or where there is a possibility of access to such areas.



STORE IN A COOL, DRY PLACE



IE® F

AN EFFECTIVE FUMIGANT FOR CONTROLLING INSECT PESTS IN STORED GRAIN

0% 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.

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RECOMMENDED DOSAGES

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

DANGER

**HAZARDOUS VAPOR AND LIQUID
MAY BE FATAL IF INHALED OR SWALLOWED
CAUSES SKIN IRRITATION AND BLISTERS
ON PROLONGED CONTACT
MAY CAUSE EYE IRRITATION**

**USE ONLY WITH ADEQUATE VENTILATION
DO NOT BREATHE VAPOR • DO NOT TAKE INTERNALLY
AVOID CONTACT WITH EYES, SKIN AND CLOTHING
WHEN NECESSARY, USE GAS MASK SUITABLE FOR ORGANIC VAPORS
KEEP OUT OF REACH OF CHILDREN**

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 tablespoonfuls 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.



In respect to fire hazard, Dowfume F is rated by Underwriters' Laboratories Inc., in a class between kerosene and ethyl alcohol.

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



**THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN**