

## **PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS DANGER/PELIGRO – POISON**

May be fatal if inhaled. The liquid may cause burns. Avoid contact with skin and eyes and avoid breathing vapor. Keep animals, children and unauthorized persons away from area under treatment, until area is shown to be free from phosphine gas, as indicated by a gas-measuring device. Working in an area with undetermined concentrations requires a self-contained breathing apparatus (SCBA) with full face-piece operated in a pressure-demand mode. Do not get in eyes, in nose, on skin or on clothing. Do not eat, drink or smoke while handling ECO<sub>2</sub>FUME<sup>®</sup>. Phosphine gas may deaden the sense of smell. Do not depend solely on the odor to detect ECO<sub>2</sub>FUME<sup>®</sup>. Observe proper application, aeration, reentry and dosing procedures specified elsewhere in the application manual to prevent overexposure.

### **NOTE TO PHYSICIAN – THIS IS PHOSPHINE**

ECO<sub>2</sub>FUME<sup>®</sup> is a gaseous mixture of phosphine and carbon dioxide. Mild exposure by inhalation causes malaise (indefinite feeling of sickness), ringing of ears, fatigue, nausea and pressure in chest, which are relieved by removal to fresh air. Moderate poisoning causes weakness, vomiting, epigastric pain (pain just above the stomach), chest pain, diarrhea and dyspnea (difficulty in breathing). Symptoms of severe poisoning may occur within a few hours or up to several days, resulting in pulmonary edema (fluid in lungs) and may lead to dizziness, cyanosis (blue or purple skin color), unconsciousness and death.

In sufficient quantity it affects the liver, kidneys, lungs, nervous system, and circulatory system. Inhalation can cause lung edema (fluid in lungs) and hyperemia (excess of blood in a body part), small perivascular brain hemorrhages and brain edema (fluid in brain). 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 the physician's own judgment:

1. Exposure of skin to rapidly evaporating liquid may cause cryogenic "burn." Treat the "burn" in a similar manner as a thermal burn.
2. In case of freezing or cryogenic "burns" to eyes by rapidly evaporating liquid, RINSE EYES WITH COOL WATER. Do not rinse eyes with hot or even tepid water.
3. In its milder to moderate forms (symptoms of poisoning may take up to 24 hours to appear), the following is suggested:  
Complete rest 1-2 days during which the patient must be kept quiet and warm. 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.
4. In cases of severe poisoning (intensive care unit is recommended):

Where pulmonary edema is observed, steroid therapy should be considered and close medical supervision is recommended. Blood transfusions may be necessary. 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.

### **ENVIRONMENTAL HAZARDS**

Phosphine gas is highly toxic to fish and wildlife. Exposure to non-target organisms should be avoided.

### **PHYSICAL AND CHEMICAL HAZARDS**

Phosphine may ignite spontaneously at levels above its lower flammability limit of 1.8% v/v (18,000 ppm). It is important not to exceed this concentration. Ignition of high concentration of phosphine can produce a very energetic reaction. Explosions can occur under these conditions and may cause severe personal injury. **Never allow the buildup of phosphine to exceed explosive concentrations.**

**Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting. Do not drop the container.**

Never open cylinder in confined space without a self-contained breathing apparatus (SCBA) with full face-piece and operated in a pressure-demand mode. Never enter a space under fumigation with ECO<sub>2</sub>FUME<sup>®</sup> without first checking the gas concentration levels and wearing the appropriate breathing apparatus. These precautions will also reduce the applicator's exposure to gas. Phosphine gas has a low solubility in water and oils and is stable at normal fumigation temperatures. However, it may react with certain metals and cause corrosion, especially at higher temperatures and relative humidities. Metals such as copper, brass and other copper alloys, and precious metals such as gold and silver are susceptible to corrosion. Thus, small electric motors, smoke detectors, brass sprinkler heads, batteries and battery chargers, fork lifts, temperature monitoring systems, switching gears, communication devices, computers, calculators and other electronic or electrical equipment should be protected or removed before

fumigation. In most cases all electronic equipment must be removed. Phosphine gas will also react with certain metallic salts and therefore, sensitive items such as photographic film, some inorganic pigments, etc., should not be exposed.

**RESTRICTED USE PESTICIDE**

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

For retail sale to Dealers and Certified Applicators only.

For use by Certified Applicators or persons under their direct supervision, and only for those uses covered by the Certified Applicator's certification. Refer to the directions in this applicator manual for requirements of the physical presence of a Certified Applicator.

**ECO<sub>2</sub>FUME<sup>®</sup> Fumigant Gas**

A phosphine-containing fumigant for use in controlling pests in listed raw agricultural commodities, processed foods, stored tobacco, animal feeds, and nonfood products. Not for use in barges. Refer to the Application Manual for a list of commodities and pests controlled.

By Weight  
ACTIVE INGREDIENTS: Phosphine Gas (PH<sub>3</sub>).....2%\*  
Carbon Dioxide (CO<sub>2</sub>) ..... 98%  
TOTAL ..... 100%  
\* 2.6% by volume



**KEEP OUT OF REACH OF CHILDREN  
DANGER - POISON - PELIGRO**



**PELIGRO AL USUARIO:** Si usted no lee ingles, no use este productor hasta que la etiqueta se le haya sido explicado ampliamente  
**(TO THE USER:** If you cannot read English, do not use this product until the label has been fully explained to you.)

**FIRST AID**

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

<b>If Inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If on Skin</b>	<ul style="list-style-type: none"> <li>• May cause frostbite to unprotected skin upon contact with dispensing equipment while gas is discharged rapidly.</li> <li>• Take off contaminated clothing and allow clothes to aerate in ventilated room prior to laundering.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in Eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with cool water for 15-20 minutes in case of freezing or cryogenic "burns." Do not rinse eyes with hot or even tepid water.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.</li> <li>• Call a poison control center or doctor for treatment advice.</li> <li>• Never introduce oil or ointment into eyes without medical advice.</li> </ul>

SEE SIDE PANEL OF LABEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

CYTEC Industries Inc. West Paterson, NJ 07424 USA

Emergency Phone: 1-800/424-9300 or 703/527-3887

EPA Registration No. 68387 -7

EPA Establishment No. 68387-CAN-1

Net Contents: 68.3 lbs. (31 kgs)

**THIS PRODUCT IS ACCOMPANIED BY AN APPROVED APPLICATION MANUAL. READ THE ENTIRE LABEL AND APPLICATION MANUAL BEFORE USE. ALL PARTS OF THE LABEL AND APPLICATION MANUAL ARE EQUALLY IMPORTANT FOR SAFE AND EFFECTIVE USE OF THIS PRODUCT. CONSULT WITH YOUR STATE LEAD PESTICIDE REGULATORY AGENCY TO DETERMINE REGULATORY STATUS, REQUIREMENTS, AND RESTRICTIONS FOR FUMIGATION USE IN THAT STATE. CALL CYTEC INDUSTRIES INC. (905/374-5828) IF YOU HAVE ANY QUESTIONS OR DO NOT UNDERSTAND ANY PART OF THE LABEL OR APPLICATION MANUAL. IF THE PRODUCT LABEL OR APPLICATION MANUAL IS LOST, CONTACT CYTEC INDUSTRIES INC. TO OBTAIN A REPLACEMENT COPY.**

## DIRECTIONS FOR USE

**It is a violation of federal law to use this product in a manner inconsistent with its labeling.** ECO<sub>2</sub>FUME<sup>®</sup> is a Restricted Use Pesticide due to the acute inhalation toxicity of phosphine, PH<sub>3</sub> gas. For retail sale to Dealers and Certified Applicators only. For use by Certified Applicators or persons under their direct supervision, and only for those uses covered by the Certified Applicator's certification. Refer to the directions in this applicator manual for requirements of the physical presence of a Certified Applicator.

ECO<sub>2</sub>FUME<sup>®</sup> is a hazardous material and may be used only by individuals trained in its proper use. Before using, read and follow the label precautions and directions on the label and in the Application Manual. **Refer to the Application Manual for more detailed precautions, recommendations and directions for use.**

## STORAGE INSTRUCTIONS

### INDOOR STORAGE

The storage of poison gases in occupied spaces is not recommended. Indoor storage in a separate building with no other occupancy is suitable. The building should be adequately ventilated and equipped with a continuous phosphine monitoring and alarm system that is activated at the TLV of 0.3 ppm. In some jurisdictions, the indoor storage of toxic gases is prohibited.

### OUTDOOR STORAGE

It is recommended that both full and used ECO<sub>2</sub>FUME<sup>®</sup> cylinders be stored outdoors in a dedicated and properly designed and labeled storage area. The following are recommended for outdoor storage:

- A firm and level surface, preferably reinforced concrete, well drained.
- A secured and locked area.
- Cylinders should never be stored where the temperature will exceed 125 °F (51.7 °C).
- A means of securing all cylinders.
- Away from building ventilation intakes.

### SECURING CYLINDERS

Cylinders must be stored in an upright position and protected from falling. Protection against falls can include the use of cylinder pallets with straps, walls and securing chains, or pens constructed from steel handrail or like construction.

### DISPOSAL INSTRUCTIONS

Once used, ECO<sub>2</sub>FUME<sup>®</sup> cylinders are to be returned only to an authorized distributor or their designated point of return. This applies to all cylinders, regardless of the quantity of material remaining in the cylinder.

## SPILL AND LEAK PROCEDURES

### GENERAL

All releases can produce high levels of gas, and therefore, attending personnel must wear a self-contained breathing apparatus (SCBA) or its equivalent when the concentration of phosphine gas is unknown. If the concentration is known, other NIOSH/MSHA approved respiratory protection must be worn.

### WHAT TO DO

In the event of an accidental release, evacuate the area immediately. A response into the leak area should only be attempted by trained emergency responders. If it is possible to shut off the source of the leak from a remote area, it should be done. Otherwise, evacuate the area and call for assistance.

### WHO TO CALL

CYTEC operates a 24-hour Emergency Response and Incident Management System (ERIM). For emergencies involving spill, leak, fire, exposure or accident call CHEMTREC: 1-800/424-9300. Outside the US or Canada call 703/527-3887.

### EMERGENCY RESPONDERS

All emergency responses should be made in level B protection which includes neoprene, butyl rubber or PVC gloves, Seranex coated Tyvek suit, rubber boots and an air-supplied respirator. Refer to the Application manual for more detailed recommendations for handling, storage, spill and leak procedures.

### **WARRANTY**

**Seller warrants that the product conforms to its chemical description and when used according to label directions under normal conditions of use, it is reasonably fit for the purpose stated on the label. Seller makes no other warranty, either expressed or implied, and buyer assumes all risk should the product be used contrary to label instructions.**