

## NOTICE TO USER

This control product is to be used only in accordance with the directions on this label. It is an offence under the *Pest Control Products Act* to use a control product under unsafe conditions.

## NATURE OF RESTRICTION

ECO<sub>2</sub>FUME<sup>®</sup> Fumigant Gas is a Restricted Use Pesticide due to the acute inhalation toxicity of phosphine, PH<sub>3</sub> gas. This product is to be stored apart from lodging for humans, animals, animal quarters, and normal work areas to avoid inadvertent exposure. For retail sale to and use only by provincially licensed persons for those uses covered by the applicator's certification or persons trained in accordance with the application manual working under the direct supervision and in the physical presence of the certified applicator. Physical presence means on-site or on the premises. ECO<sub>2</sub>FUME<sup>®</sup> Fumigant Gas 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 labelling.

## TOXICOLOGICAL INFORMATION

### NOTE TO PHYSICIAN – THIS IS PHOSPHINE, IT IS NOT PHOSGENE

ECO<sub>2</sub>FUME<sup>®</sup> Fumigant Gas 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, epigastria 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 colour), 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). Ingestion can cause lung and brain symptoms, but damage to the viscera (body cavity organs) is more common. Poisoning may result in (1) pulmonary edema, (2) liver elevated serum GOT, LDH and alkaline phosphatase, reduced prothrombin, hemorrhage and jaundice (yellow skin colour) 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 for 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 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.

## PHYSICAL AND CHEMICAL HAZARDS

Phosphine may ignite spontaneously at levels above its lower flammability limit of 1.8% v/v. 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 54°C (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> Fumigant Gas 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. Under high vacuum conditions, phosphine gas may cause an explosive hazard. Do not apply fumigant in vacuum chambers.

**NOTICE TO BUYER: Seller's guarantee shall be limited to the terms set out on the label and, subject thereto, the buyer assumes the risk to persons or property arising from the use or handling of this product and accepts the product on that condition.**

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

A phosphine-containing fumigant for use in controlling pests in listed raw agricultural commodities, animal feeds, processed foods, non-food products and stored tobacco.

## RESTRICTED USE PESTICIDE

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

For retail sale to and use only by appropriately provincially licensed persons for those uses covered by the applicator's certification or persons trained in accordance with this 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. Consult local pesticide regulatory authorities about use permits which may be required. Read and follow the label and the product's Application Manual, which contains complete instructions for the safe use of this pesticide.

### READ THE LABEL AND ATTACHED APPLICATION MANUAL BEFORE USING

GUARANTEE: By Weight  
Phosphine Gas (PH<sub>3</sub>).....2%\*

\*2.6% by volume

Registration No. 27684  
PEST CONTROL PRODUCTS ACT

## DANGER



**POISON**



**EXPLOSIVE**

**LIQUID IS CORROSIVE TO EYES AND SKIN**

**KEEP OUT OF REACH OF CHILDREN AND UNAUTHORIZED PERSONNEL**

Net Contents: 31.0 kg. (68.3 lb.)

CYTEC CANADA INC.  
9061 Garner Road  
Niagara Falls, Ontario, Canada,  
L2E 6T4

Emergency Phone: Canada (905)356-8310 US 1-800/424-9300 or 703/527-3887

**THIS PRODUCT IS ACCOMPANIED BY AN APPROVED LABEL AND AN APPLICATION MANUAL. READ AND UNDERSTAND THE ENTIRE LABEL AND APPLICATION MANUAL. ALL PARTS OF THE LABEL AND APPLICATION MANUAL ARE EQUALLY IMPORTANT FOR SAFE AND EFFECTIVE USE OF THIS PRODUCT. CALL CYTEC CANADA INC. IF YOU HAVE ANY QUESTIONS OR DO NOT UNDERSTAND ANY PART OF THE LABEL OR APPLICATION MANUAL. If Application Manual is lost, contact CYTEC CANADA INC. to obtain a replacement copy.**

### 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. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

**If Inhaled:** Move person to fresh air. If person is not breathing, immediately call for emergency medical support, then begin cardiopulmonary resuscitation including artificial respiration, preferably with a bag-valve-mask device if possible. Rescuers within the areas of potentially unsafe levels of this product (the "HOT ZONE") should employ appropriate personal protective equipment such as SCBA during the resuscitation of the victim. Keep person warm. Call a poison control center or doctor for further treatment advice.

**If on Skin:** May cause frostbite to unprotected skin upon contact with dispensing equipment while gas is discharging rapidly. Treat as thermal burn. Take off contaminated clothing and allow clothes to aerate in ventilated room prior to laundering. Call a poison control center or doctor for treatment advice.

**If in Eyes:** 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. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice. Never introduce oil or ointment into eyes without medical advice.

### SEE BELOW AND OPPOSITE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

#### PRECAUTIONS

**DANGER – POISON, KEEP OUT OF REACH OF CHILDREN AND UNAUTHORIZED PERSONNEL. Fatal if inhaled. Do not inhale vapour. Contains Extremely Hazardous Vapour.** The liquid may cause burns. Do not get in eyes, on skin or on clothing. Do not eat, drink or smoke while handling ECO<sub>2</sub>FUME<sup>®</sup> Fumigant Gas. Use in well ventilated areas. Contains flammable and toxic phosphine (hydrogen phosphide) gas. Phosphine gas may deaden the sense of smell. Do not depend solely on the odour to detect ECO<sub>2</sub>FUME<sup>®</sup> Fumigant Gas. Appropriate respiratory protection must be worn during all following operations: application of the fumigant from within a structure, initiation of aeration and after aeration when testing prior to re-entry, attending to spills and leaks. Fumigated areas must be aerated to 0.3 ppm hydrogen phosphide or less prior to re-entry by unprotected workers. For hydrogen phosphide levels between 0.3 – 15 ppm, the minimum protection required is a NIOSH/MSHA approved air-purifying full-face gas mask with a chin style, front- or back-mounted canister approved for phosphine OR any NIOSH/MSHA approved self-contained breathing apparatus with a full face-piece. For hydrogen phosphide levels up to 50 ppm, any NIOSH/MSHA approved supplied air respirator with a full face piece and is operated in a positive pressure mode may be worn. In situations where the hydrogen phosphide concentration is unknown, or to escape from conditions which are Immediately Dangerous to Life or Health (IDLH), a NIOSH/MSHA approved self-contained breathing apparatus (SCBA) with a full face-piece must be worn and operated in a positive pressure mode. If a beard or long sideburns interfere with the fit of respiratory protection, they must be shaven.

#### RESIDUE STATEMENT

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., contact 1-866-375-4648 or [www.cropro.org](http://www.cropro.org).

#### 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> Fumigant Gas cylinders be stored outdoors in a dedicated and properly designed and labelled storage area. The following are recommended for outdoor storage: 1) A firm and level surface, preferably reinforced concrete, well drained. 2) A secured and locked area. 3) Cylinders should never be stored where the temperature will exceed 51.7 °C (125 °F). 4) A means of securing all cylinders. 5) 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 hand rail or like construction.

#### DISPOSAL INSTRUCTIONS

Do not reuse this cylinder for any purpose. Once used, ECO<sub>2</sub>FUME<sup>®</sup> Fumigant Gas 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) with full face piece and operated in pressure demand mode when the concentration of phosphine gas is unknown. If the concentration is known, other NIOSH/MSHA approved respiratory protection must be worn as specified in the Application Manual (Section V.3 – Requirements for Availability of Respiratory Protection).

**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.