

**CYTEC**

ECO₂FUME[®] Fumigant Gas

DESCRIPTION

ECO₂FUME fumigant gas is a ready-to-use, non-flammable mixture of phosphine and carbon dioxide that enables highly effective fumigation in a wide variety of sealed-storage applications. It is dispensed external to storage or structures using simple techniques which avoids applicator exposure and enhances worker safety. ECO₂FUME fumigant gas can be transported easily and disperses and penetrates foods and non-foods quickly. Internal concentration levels of phosphine can be managed by adjusting the amount of fumigant released from the cylinder at any stage of the fumigation process. ECO₂FUME fumigant is quickly and easily aerated. It produces no waste by-products or dust residues, thus eliminating the hazardous deactivation and disposal issues typically associated with traditional fumigants.

TECHNICAL SPECIFICATIONS

Formulation of ECO₂FUME

- Phosphine (PH₃): 2% (by weight)/2.6% by volume
- Carbon Dioxide (CO₂): 98%

Packaging

- High-pressure steel or aluminum cylinder
- Gross weight of full cylinder: 93.45 – 94.82 kg (steel),
71 – 72 kg (aluminum).
- Gross weight of empty cylinder: 62.45 – 63.82 kg. (steel)
41 – 42 kg (aluminium)
- Net weight of ECO₂FUME fumigant gas per cylinder: 31 kg.
(1.34 lbs/620 grams PH₃)
- Cylinders are packaged in steel racks (12 or 16 cylinders per rack)
- Total weight of cylinders and rack: 1654 .54 kg (steel cylinder)
964 Kg (aluminium cylinders 12 per rack)
- Cylinder valve connection: CGA 350 (left-handed thread), Type 40 left hand thread for Asia Pacific
- Cylinder configuration: fitted with a "dip" tube
- Internal cylinder pressure: 5778 kPa@21°C (838 psig@70°F)

Equipment

- Copper, stainless steel or hydraulic dispensing lines of suitable pressure rating*, SIROFLO dispenser

*Contact a Cytec technical representative for exact specifications.

Dispensing Rate

- 0.4 - >36 lbs./min. ECO₂FUME fumigant gas, or 3.6 - >320 grams phosphine/min.*

*Cylinders can be manifolded together to achieve higher-end dispensing rates.

Fumigation Capabilities

- One (1) gas cylinder is capable of fumigating 2210 m³ (62,270 bushels, 78,000 ft³)
- Low dose, slow release fumigation of multiple silos using SIROFLO fumigation approach



APPROVED STORAGE AND APPLICATIONS

Storage

- Bins and silos
- Warehouses
- Tarps and bunkers
- Railcars, ship-holds, sea containers and trailers
- Mills and food processing plants

Storage size limitations: none

Pests Eliminated (Major pests)

- Weevils (Rice, Granary)
- Indian Meal Moth
- Lesser Grain Borer
- Grain Beetles (Rusty, Saw-Toothed, Merchant)
- Flour Beetles (Red, Confused)
- Cigarette Beetle
- Warehouse Moth
- Warehouse Beetle

Items Protected

- Seed, wheat, corn, rice and other grains
- Nuts, dried fruits, vegetables, cocoa and coffee beans
- Flour and other processed foods
- Animal feed and feed ingredients
- Tobacco and other non-food items
- Cut flowers, foliage and woody shrubs
- Exported fresh fruits and vegetables such as apples, grapes, kiwi, oranges, garlic, onions, etc.

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PRODUCT BENEFITS

Advantages of ECO₂FUME fumigant gas compared to traditional fumigants:

- Non-flammable
 - This eliminates spontaneous flammability associated with metal phosphides, which can cause fires within the fumigated space
- Fast-acting
 - Required concentration levels are achieved in minutes or hours, not days
- Easy application and control
 - ECO₂FUME is pre-mixed and operators can easily vary concentration levels and exposure periods, ensuring elimination of all insect stages
- Enhanced worker safety
 - ECO₂FUME fumigant gas comes in ready-to-use cylinders that eliminates worker contact
- No waste generation or disposal
 - ECO₂FUME gas yields no waste by-products and is residue free
- Environmentally friendly
 - Unlike alternatives, ECO₂FUME gas will not harm the ozone layer
- Cost-effective

Refer to Cytec's Material Safety Data Sheet, EPA approved product label and application manual for safe handling information

CYTEC

Technology ahead of its time™

Asia/Pacific - Cytec Australia, Holdings Pty, Ltd., Baulkham Hills, NSW, 61-2-9846-6200 • **Canada** - Cytec Canada Inc., Niagara Falls, Ontario, 1-904-374-5939 **Europe** - Cytec Industries France, Rungis-Cedex, 33-1-4180-1700 • **United States** - Cytec Industries Inc., West Paterson, NJ, 1-973-357-3100

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