

## VAPORPH<sub>3</sub>OS<sup>®</sup> Phosphine Fumigant

### Onsite Blending with Air

#### Description

VAPORPH<sub>3</sub>OS phosphine fumigant is a cylinderized source of pure phosphine for the fumigation of post-harvest products or storage structures. VAPORPH<sub>3</sub>OS is designed for use in conjunction with Cytec-approved blending equipment capable of diluting the phosphine concentration to below its lower flammability limit of 1.8% (vol.). On-site blending with the surrounding air as a dilution gas can achieve this result.



The resulting mixture of phosphine and air that is dispensed from the Horn Diluphos System (HDS)\* blending equipment can be added directly to the fumigation space or existing recirculation systems. The on-site blending of VAPORPH<sub>3</sub>OS with air is an attractive option when frequent fumigation is required. The portability of the blending equipment gives the fumigator flexibility in usage at multiple sites. It can also be installed at locations where centralized dispensing stations are beneficial.

#### Technical Specifications

##### VAPORPH<sub>3</sub>OS Formulation

- Phosphine (PH<sub>3</sub>): 100%

VAPORPH<sub>3</sub>OS is pyrophoric and intended for use in accordance with its EPA-approved label.

##### Packaging

- High-pressure steel cylinder
- Gross weight of full cylinder: 191-195 lbs. (87-89 kg)
- Gross weight of empty cylinder: 143-147 lbs. (65-67 kg)

- Net weight of VAPORPH<sub>3</sub>OS phosphine fumigant per cylinder: 48.5 lbs./22kg
- Cylinder valve connection: CGA 350 (left-handed thread)
- Internal cylinder pressure: 500 psig@70°F
- Pressure of dispensed mixture: 1-2 psig (approximate)

##### Equipment

- VAPORPH<sub>3</sub>OS gas can be blended on-site with the surrounding air using Cytec-approved blending equipment. The Horn Diluphos System (HDS)\* is approved and available for this application. The equipment can be designed to meet dosing requirements, and features a computer interface that facilitates its operation. The blender has many built-in safety systems which monitor the blending and delivery of the fumigant while providing warnings and automatic shut-off if necessary. The HDS is a mobile unit designed to allow easy transportation to different sites.

Models	HDS 80	HDS 200	HDS 800	HDS 30	
Air flow m <sup>3</sup> /hr.	80	200	800	28	
Concentration PH <sub>3</sub> , ppm	0-10,000	0-10,000	0-10,000	0-10,000	
PH, flow g/min.	19	47	190	1-6	
Power	South America	220-1 VAC, 4 Amp. 50 Hz.	380-3 VAC, 4 Amp. 50 Hz.	380-3 VAC, 26 Amp. 50Hz.	220-1 VAC, 4 Amp. 50Hz.
	U.S.A.	208-1 VAC, 6 Amp. 60 Hz.	208-3 VAC, 7 Amp. 60 Hz.	460-3 VAC, 26 Amp. 60 Hz.	110-1 VAC, 4 Amp. 60 Hz.
	Australia	240-1 VAC, 4 Amp. 50 Hz.	415-3 VAC, 4 Amp. 50 Hz.	415-3 VAC, 26 Amp. 50 Hz.	240-1 VAC, 4 Amp. 50 Hz.
Dimensions cm**	91(l)* 76(w)* 95(h)	90(l)*76(w)*95(h)	150(l)*101(w)*158(h)	33 (l)*75(w)*78(h)	

\* Available from Fosfoquim - [www.fosfoquim.cl](http://www.fosfoquim.cl) or [www.fosfoquimusa.com](http://www.fosfoquimusa.com)

\*\* Dimensions do not include cylinders.

##### Fumigation Capabilities

- One (1) cylinder of VAPORPH<sub>3</sub>OS is capable of fumigating 2,750,000 ft<sup>3</sup> (77,882 m<sup>3</sup> or ~ 2,210,000 bushels)

\* Available from Fosfoquim - [www.fosfoquim.cl](http://www.fosfoquim.cl) or [www.fosfoquimusa.com](http://www.fosfoquimusa.com)

## Approved Storage and Applications Include\*

### Storage

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

Storage size limitations: none

### 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

### Pests Eliminated

- 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

\*Refer to approved application manual for complete list of storages, applications and target pests.

## Product Benefits

Advantages of VAPORPH<sub>3</sub>OS with air, compared to traditional fumigants, include:

- Non-flammable (after mixture with air)
  - This eliminates spontaneous flammability associated with metal phosphides, which can cause fires within the fumigated space
- Non reactive with moisture or water

- Fast-acting
  - Required concentration levels are achieved in minutes or hours, not days
  - Only approved phosphine fumigant for 24 hour exposure time
- Easy application and control
  - Operators can easily vary concentration levels and exposure periods, ensuring elimination of all insect stages
- Enhanced worker safety
  - Product is dispensed directly into sealed storage or structure from the outside. External applications eliminate confined space entry scenarios.
- No waste generation or disposal
  - VAPORPH<sub>3</sub>OS yields no waste by-products, or dust residue that require retrieval and proper disposal
- Environmentally friendly
  - VAPORPH<sub>3</sub>OS will not harm the ozone layer
  - No effect on global warming
- Cost-effective

## Safety Information

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

• Email: [custinfo@cytec.com](mailto:custinfo@cytec.com) Worldwide Contact Info: [www.cytec.com](http://www.cytec.com) US Toll Free: 800-652-6013 Tel: (+1) 973-357-3193 •

Disclaimer: Cytec Industries Inc. in its own name and on behalf of its affiliated companies (collectively, "Cytec") decline any liability with respect to the use made by anyone of the information contained herein. The information contained herein represents Cytec's best knowledge thereon without constituting any express or implied guarantee or warranty of any kind (including, but not limited to, regarding the accuracy, the completeness or relevance of the data set out herein). Nothing contained herein shall be construed as conferring any license or right under any patent or other intellectual property rights of Cytec or of any third party. The information relating to the products is given for information purposes only. No guarantee or warranty is provided that the product and/or information is adapted for any specific use, performance or result and that product and/or information do not infringe any Cytec and/or third party intellectual property rights. The user should perform its own tests to determine the suitability for a particular purpose. The final choice of use of a product and/or information as well as the investigation of any possible violation of intellectual property rights of Cytec and/or third parties remains the sole responsibility of the user.

TRADEMARK NOTICE: The ® indicates a Registered Trademark in the United States and the ™ or \* indicates a Trademark in the United States. The mark may also be registered, the subject of an application for registration or a trademark in other countries.