

2023-2308
2023-06-05
Previously approved 2014-0981 2014-06-18

DO NOT REMOVE THIS TAG

ETHYLENE OXIDE

Fumigant gas, for the control of bacteria in spices and natural seasonings.

RESTRICTED

This product is only to be used by individuals holding an appropriate pesticide applicator certificate or license recognized by the provincial/territorial pesticide regulatory agency where the pesticide application is to occur

READ THE LABEL AND THE ATTACHED TAG BEFORE USING

DANGER

EXTREMELY

POISON



FLAMMABLE



EXPLOSIVE



ACTIVE INGREDIENT: Ethylene oxide.....100%

REGISTRATION NO. 22965

PEST CONTROL PRODUCTS ACT

Net contents: 181.44 kg

LINDE CANADA INC.
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Tel. : 905-803-1600

ETHYLENE OXIDE

- FUMIGANT GAS

ACTIVE INGREDIENT - ETHYLENE OXIDE 100% BY WEIGHT

DANGER - EXTREMELY FLAMMABLE

GENERAL INSTRUCTIONS

1. This container is equipped with an eductor tube and is designed to discharge liquid.
2. This container has been pressurized with nitrogen to a pressure of 345 kPa (50 psig) at 21.1°C (70°F). Pressure will be higher if temperature is above 21.1°C (70°F); lower if temperature is below 21.1°C (70°F). Contact supplier if, upon receipt, container pressure is below 345 kPa (50 psig) at 21.1°C (70°F).
3. Container must be in upright position when discharging. Container must be secured to prevent falling over.
4. Discharge valve outlet is provided with a CGA 510 connection which has lefthand threads.
5. EOX-style cylinders and UN 1A1 drums are also provided with a CGA 580 pressurization valve which has righthand threads. Do not discharge product from the CGA 580 pressurization valve.
6. Remove protective valve plugs and make sure valve threads are undamaged. Do not attach an ordinary pipe fitting to these valves.
7. Use steel fittings and piping or Teflon-lined stainless steel tubing. Do not use rubber, plastics, or copper materials. Ground all equipment, including cylinders, to avoid static sparks.
8. Install check valves in the discharge line from this container to processing equipment to prevent back-flow into container.
9. Connect the CGA 580 pressurization valve to a source of nitrogen using a line equipped with a pressure regulator and check valve. Nitrogen pressure must not exceed 345 kPa (50 psig). Never use compressed air or other gases to pressurize the cylinder or drum.
10. Open both valves by turning handwheel counterclockwise. Use standard "T" wrenches to open and close cylinder valves. Never use an ordinary wrench or other leverage device to open or close cylinder valves.
11. Replace valve plugs tightly in valve outlets before returning container to supplier.

STORAGE AND DISPOSAL

Store according to instructions provided on label and this tag.
Return cylinder to supplier.

FUMIGATION

1. Fumigation with Ethylene Oxide must be performed only in vacuum or gas-tight chambers designed for use with Ethylene Oxide. Ethylene Oxide may be safely used as a fumigant for the control of microorganisms in ground spices or other processed natural seasoning materials, except basil and mixtures to which salt has been added.
2. Aerate fumigated materials before use.

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ETHYLENE OXIDE
FUMIGANT GAS
REGISTRATION NO. 22965 PEST CONTROL PRODUCTS ACT
DO NOT REMOVE THIS TAG
DANGER EXTREMELY FLAMMABLE AND EXPLOSIVE
HARMFUL IF INHALED

DIRECTIONS FOR USE

Ethylene Oxide is a highly hazardous material and should be used only by personnel trained in its proper use. All persons working with Ethylene Oxide must have knowledge of the hazards of this chemical and must be trained in the proper use of required respirator equipment, monitoring and detection devices, and in the implementation of emergency procedures. This product is only to be used by individuals holding an appropriate pesticide applicator certificate or license recognized by the provincial/territorial pesticide regulatory agency where the pesticide application is to occur. Use only in accordance with directions and safety precautions listed on the label and this tag.

Safety and awareness training is required for all employees including office staff. Information and training must be provided to all employees in the facility at the beginning of employment and annually thereafter. The safety training must include, at a minimum, the following information:

- the most recent monitored ambient levels of ethylene oxide in the facility;
- the potential health effects from the levels of ethylene oxide in the facility;
- the emergency response plan and how to respond in an emergency;
- the availability of the Material Safety Data Sheet, product label and other materials related to the health hazards of exposure to ethylene oxide.

In order to reduce ambient levels of ethylene oxide, lengthy facility aeration is encouraged. A reduced ambient level of ethylene oxide greatly reduces potential long-term risks to employees not directly involved in the ethylene oxide applications

DO NOT discharge effluent containing this product into sewer systems, lakes, streams, ponds, estuaries, oceans or other waters.

For fumigation of spices and natural seasonings:

DO NOT use in or on any form of basil.

This product may only be applied to or on whole or ground spices and other processed natural seasonings (except basil and mixtures to which salt has been added) utilizing an ethylene oxide method that uses a single chamber to pre-condition and aerate with an alternating vacuum and aeration purging procedure.

GENERAL INSTRUCTIONS

1. Always check container valves and plugs for leaks before moving container into your facility.
2. This container is equipped with an eductor tube for liquid delivery. If ethylene oxide gas is required, use vaporizing equipment.
3. This container has been pressurized with nitrogen to a pressure of 345 kPa (50 psig) at 21°C (70°F). Pressure will be higher if temperature is above 21°C (70°F); lower if temperature is below this. Contact supplier if, upon receipt, container pressure is below 345 kPa (50 psig) at 21°C (70°F).
4. Container must be in an upright position when discharging. Cylinders must be secured to prevent falling over.
5. Liquid withdrawal valve outlet (marked "Liquid") is provided with a CGA 510 connection which has left-hand threads.
6. EOX and SS.55 style cylinders and UN 1A1 drums are also provided with a CGA 580 inert pressurizing valve (marked "Vent") which has right-hand threads. Do not discharge product from the CGA 580 inert pressurizing valve.
7. Remove protective valve plugs and make sure valve threads are undamaged. Do not attach an ordinary pipe fitting to these valves. The connections to the container valves should be brass CTA 510 and CGA 580 connectors. Use of other metals could cause damage to the brass container valves.
8. All other piping and fittings should be of steel or stainless steel, and must be capable of withstanding the pressure to be encountered. Do not use rubber, plastic, or copper materials. Install relief devices where liquid can be trapped between valves.
9. Ground all equipment, including containers, to avoid static sparks.
10. Use only spark-proof tools.
11. Use only explosion-proof electrical equipment where ethylene oxide may be present.
12. Install check valves in the discharge line from this container to processing equipment to prevent back-flow into container.

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13. Connect the CGA 580 inert pressuring valve (marked "Vent") to a source of nitrogen using a line equipped with a pressure regulator safety valve and check valve. The source of nitrogen should be used exclusively for ethylene oxide and for no other purpose. Nitrogen pressure must not exceed the service pressure of the container. Never use compressed air or other gases to pressurize the cylinder or drum.
14. To open container valves, turn handwheel counterclockwise. The liquid discharge valve is equipped with a handwheel. Do not use a wrench or other leverage device on handwheel. Use a "T" wrench to open the inert pressurizing valve on EOX and SS.55 cylinders and UN 1A1 drums.
15. Use with adequate general and local ventilation. Vapours form from this product and may travel or be moved by air currents and ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharges or other ignition sources at locations distant from product handing point.
16. Determine the quantity of product withdrawn from this container by using an appropriate scale.

FUMIGATION

Ethylene oxide may be safely used to reduce microbial load on whole and ground spices and other processed natural seasoning materials except mixtures to which salt has been added. Kills bacteria.

This product may only be applied to, or on ,whole or ground spices and other processed natural seasonings (except mixtures to which salt has been added) utilizing an ethylene oxide fumigation method that uses a single fumigation chamber to pre-condition and aerate with an alternating vacuum and aeration purging procedure.

Place spices in the treatment chamber. Assure that the mixture of ethylene oxide and air is compatible with the chamber design, then, introduce into the chamber a concentration of ethylene oxide not to exceed 500 mg/L, with a dwell time not to exceed 6 hours. Then evacuate the gas from the chamber using a sequence of not less than 21 steam washes (injections and evacuations) between 1.5 pounds per square inch absolute (PSIA) (10.3 kPa) and 5.0 PSIA (34.5 kPa) while maintaining a minimum chamber temperature of 46°C.

- A. Fumigation with ethylene oxide must be performed only in vacuum or gas-tight chambers designed for use with ethylene oxide and in accordance with directions supplied by the chamber manufacturer.
- B. Ethylene oxide fumigation cycle parameters depend on several fumigating variable factors; preconditioning (if any); exposure time; chamber air or inert gas concentration; ethylene oxide concentration; chamber temperature; humidity level; types and quantities of items to be fumigated; packaging; load configuration in the chamber; microbial challenge method; and the desired performance of the fumigated product and package.
- C. The following is a list of ranges for the critical variables which must be in proper relationship for ethylene oxide to be an effective fumigating agent. This information should be considered general, and not as a replacement for detailed information issued by manufacturers.

TEMPERATURES: 21-65°C (70-150°F)

PRE-VACUUM: typically 0.86-0.97 kg/cm² (25 to 28 inches of mercury). Use vacuums and/or inert gas purges compatible with the products and packages to be fumigated, and such that explosive atmospheres are never present in the container.

MOISTURE: relative humidity of 33% to 80%

GAS CONCENTRATION: 250 mg/L to 500 mg/L (mg/L means milligrams of ethylene oxide per litre of chamber volume)

EXPOSE TIME: 45 minutes to 20 hours

POST VACUUMS: Ethylene oxide must be removed from the chamber and vented to an appropriate ethylene oxide capture or destruction device.

AERATION: Aerate fumigated materials before use. Do not allow any person to enter the chamber of aeration area if such entry will result in exposures to ethylene oxide above the levels of 1.0 ppm (8-hour time weighted average) or provincial standard, whichever is lowest.

Cycle parameters and post cycle aeration parameters (temperature, time, air flow-rate) can affect residue levels. The user must determine that the parameters chosen result in goods which comply with applicable Federal and Provincial residue requirements.

- D. The fumigation cycle parameters should be those prescribed by the equipment manufacturer. If other cycle parameters are used, the safety and efficacy of the alternate cycle parameters must be validated and are the responsibility of the user. NEVER USE PARAMETERS WHICH ALLOW FLAMMABLE MIXTURES OF ETHYLENE OXIDE AND AIR TO ENTER THE CHAMBER.

STORAGE AND RETURN OF CONTAINERS: Follow instructions provided on label.

BEFORE USING READ THE TAG

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DANGER: Contains Ethylene Oxide. Cancer hazard and reproductive hazard. Flammable liquid and gas under pressure. Can form explosive mixtures with air. Can cause eye and skin burns. Can cause irritation of respiratory tract. May cause nervous system damage and cataracts. Symptoms of exposure may be delayed. Can become reactive if heated or contaminated.

PRECAUTIONS: KEEP OUT OF REACH OF CHILDREN.

Do not breathe gas. Do not get liquid in eyes, on skin or clothing. Keep away from heat, flame and sparks. Store and use with adequate ventilation, and use only in closed systems. Container temperature should not exceed 52°C (125°F). Keep oil, grease, and other combustible materials away from cylinder. Do not drop cylinder. Transport it on a trolley.

Wear a long-sleeved shirt, long pants, shoes plus socks, and chemical-resistant gloves during mixing, loading, transfer, application or any other handling activities. A NIOSH/MSHA approved respirator must also be worn under the following conditions:

- when the ambient ethylene oxide concentration is 1 to 50 ppm – wear a full-face piece respirator with ethylene oxide approved canister, front or back mounted;
- when the ambient ethylene oxide concentration is 51 to 2,000 ppm – wear (1) a positive-pressure supplied-air respirator equipped with full-face piece, hood, or helmet; or (2) a continuous-flow supplied-air respirator (positive-pressure) equipped with hood, helmet, or suit;
- when the ambient ethylene oxide concentration is greater than 2,000 ppm or unknown (e.g., emergency situations) - wear (1) a positive-pressure self-contained breathing apparatus equipped with full-face piece; or (2) a positive-pressure full-face piece supplied-air respirator equipped with an auxiliary positive-pressure self-contained breathing apparatus (SCBA).

The respiratory protection must fit properly, any obstruction to a proper fit must be removed (e.g., beard, long sideburns).

When handlers could have eye or skin contact with ethylene oxide or ethylene oxide solutions, such as during maintenance and repair, vessel cleaning, or cleaning up spills, they must wear:

- chemical-resistant attire, such as an apron, protective suit, or footwear that protects the area of the body that might contact ethylene oxide or ethylene oxide solutions, and, or face-sealing goggles, a full face shield, or a full-face NIOSH/MSHA-approved respirator.

NOTE: Suck-back into cylinder may cause rupture. Always use a back flow preventive device in the piping.

IN EMERGENCY: Call 1-800-363-0042 (24 hours).

FIRST AID: If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice. In case of contact with eyes, hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes then continue rinsing eye. Call a poison control centre or doctor for treatment advice. In case of contact with skin or clothing, take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice. If swallowed, call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION : Treat symptomatically.

IN CASE OF FIRE: Do not extinguish burning gas if flow cannot be shut off immediately. Move container away from fire if without risk. Use water spray or fog nozzle to keep container cool.

IN CASE OF LEAK: Evacuate area and keep personnel upwind. Shut off all sources of ignition. Use self-contained breathing apparatus and protective clothing and shut off leak if without risk.

NATURE OF RESTRICTION: This product is only to be used by individuals holding an appropriate pesticide applicator certificate or license recognized by the provincial/territorial pesticide regulatory agency where the pesticide application is to occur.

NOTICE TO USER: This pest control product is to be used only in accordance with the directions on the label. It is an offense under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label.

STORAGE AND RETURN OF CONTAINERS: This product must be stored away from lodging for humans, normal work areas and animal quarters, to avoid inadvertent exposure. To control ethylene oxide polymer growth use all fumigant gas on a first-in, first-out basis. A good rule of thumb is to use ethylene oxide within 12 months of the fill date marked on the container (batch number). Do not store outside in direct sunlight. To minimize polymer growth ethylene oxide should not be stored in any place where the temperature consistently exceeds 38°C (100°F).

STORE IN AN AREA WITH ADEQUATE VENTILATION

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RETURN CONTAINER TO SUPPLIER FOR REUSE.

BEFORE RETURNING CONTAINER TO SUPPLIER:

- A.*** Pressurize container with nitrogen to 345 kPa (50 psig) total pressure at 21°C (70°F) and be sure container valves are closed.
- B.*** Replace valve plugs tightly in valve outlet. If valve plugs are not available contact supplier.
- C.*** Check container valves and plugs for leaks prior to shipment. If leaks are detected contact supplier.

DO NOT REMOVE LABEL

CLOSE VALVE ON CONTAINER WHEN NOT IN USE OR EMPTY.

BEFORE USING READ THE LABEL AND THE TAG