

63963-1

10/6/2003

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ACTUAL SIZE

ETHYLENE, COMPRESSED UN 1962



Active Ingredient - Ethylene 99.97%
Other Ingredients- 0.03%
Total 100%

Net Contents _____ lbs.

**IN CASE OF EMERGENCY CALL
1-800-424-9300**

Establishment No. 32452-TX-001
EPA Registration No. 83983-1

Keep out of reach of children

**WARNING: DO NOT HANDLE CYLINDER OR USE CONTENTS UNTIL:
1) YOU HAVE READ AND UNDERSTAND THE MATERIAL SAFETY
DATA SHEET(S) FOR THIS PRODUCT. CALL 1-800-291-1568 FOR
MORE COPIES. 2) YOU ARE TRAINED TO USE CYLINDER AND
CONTENTS, INCLUDING EMERGENCY PROCEDURES. SECURE
CYLINDER IN STORAGE AND USE.**

DANGER PELIGRO

Si usted no entiende la etiqueta, busque alguien para que se la explique a usted en detalle.
(If you do not understand this label, find someone to explain it to you in detail.)

FIRST AID

If in eyes: Flush with plenty of water. Call a physician.
If in eye: Wash with plenty of soap and water. Get medical attention.
If inhaled: Remove victim to fresh air. If not breathing, give artificial respiration,
preferably mouth-to-mouth. Get medical attention.
In case of ingestion: Soak in lukewarm (not hot) water. Get medical attention.

Precautionary Statements

Hazard to Humans and Domestic Animals

DANGER: Liquefied or pressurized gas can cause frost burns. Do not get in eyes or on skin. Harmful if inhaled. Avoid breathing vapors.

Personal Protective Equipment (PPE): Wear long-sleeved shirt, long pants, waterproof gloves, shoes plus socks and protective eyewear while handling cylinders or any application equipment under pressure.

Applicators and other handlers who handle this pesticide for any use NOT covered by the Worker Protection Standard (40 CFR Part 170) - In general, only agricultural plant uses are covered by the WPS - must not enter unventilated areas unless wearing a respirator approved by NIOSH/MSHA for this use.

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washing, use detergent and hot water. Keep and wash PPE separately from other laundry.

Physical or Chemical Hazards

Extremely flammable. Contents under pressure. Keep away from heat, flame, and sparks. Do not puncture or incinerate container. Exposure to temperatures above 129°F (52°C) may cause bursting.

DO NOT REMOVE THIS PRODUCT LABEL.

Directions for Use General Classification

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the Agency responsible for pesticide regulation.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

See directions in the attached booklet.

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.
Pesticide Storage: Store in a cool, ventilated area. Do not store near heat or flames.
Pesticide Disposal: Do not empty container to the atmosphere.
Container Disposal: Return used container with at least 25 PSIG pressure.

Environmental Hazards

Leak: Evacuate area and move personnel upwind. Stop flow of gas and ventilate area if without risk. Leaking cylinder may be vented outside away from ignition sources and people. Contact supplier for instructions.
Fire: If possible, stop flow of gas supply and allow fuel to consume itself. Use water spray or fog nozzle to keep cylinder and surrounding areas cool. Move cylinder away from fire, if without risk.

NOTICE

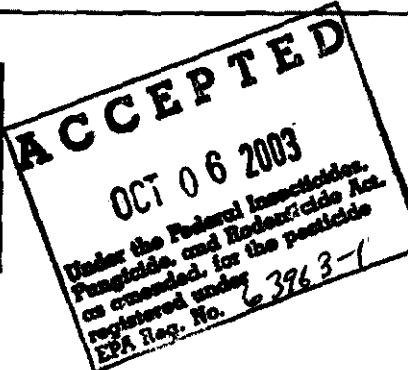
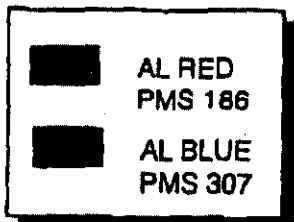
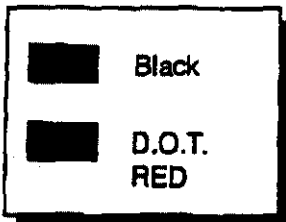
Buyer assumes all responsibility for safety and use not in accordance with directions.



AIR LIQUIDE AMERICA L.P.
P.O. BOX 448229
Houston, TX 77056

S9213-1

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JOB # _____ FOR _____
PROOF NO. _____ DATE SENT _____
READ THIS PROOF CAREFULLY
MARK CORRECTIONS AND ALTERATIONS CLEARLY
 Proof OK as is OK with corrections
 New Proof Wanted
Signed _____ Date _____

Downey Decal & Graphics, Inc.
27470 Keller Rd., Manteca, CA 95231
(909) 672-6192 Fax (909) 672-6194

#03-6709F AIR LIQUIDE, S9213-1, 09/29/03

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**DO NOT DETACH
THIS BOOKLET**

DANGER

EXTREMELY FLAMMABLE

Keep this cylinder away from heat, flame and
fires and spark producing devices.

STORE IN WELL VENTILATED COOL PLACE

The contents of this cylinder must
be used in accordance with the
directions in this Booklet.

APPROXIMATE PRESSURE WHEN FULL

1200 PSIG AT 70° F

**ETHYLENE GAS
Directions for Use**



Air Liquide America L.P.
P.O. Box 460229
Houston, TX 77056

10/03 #1040.1 © Air Liquide America L.P.

DANGER

EXTREMELY FLAMMABLE

ETHYLENE is extremely flammable when mixed
with air and will explode if ignited. Active
Ingredient: Ethylene 99.97% by weight. Flammable
in air between 2.7% and 36% by volume.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its
labeling and with the Worker Protection Standard,
40 CFR Part 170. This Standard contains
requirements for the protection of agricultural
workers on farms, forests, nurseries, and
greenhouses, and handlers of agricultural
pesticides. It contains requirements for training,
decontamination, notification, and emergency
assistance. It also contains specific instructions
and exceptions pertaining to the statements on this
label and about Personal Protective Equipment
(PPE). The requirements in this box only apply to
uses of this product that are covered by the Worker
Protection Standard.

Do not enter or allow worker entry into treated
areas during the restricted entry interval (REI) of 12
hours. Exception: if the product is soil-injected or
soil-incorporated, the Worker Protection Standard,
under certain circumstances, allows workers to
enter the treated area if there will be no contact
with anything that has been treated.

PPE required for early entry to treated areas that is
permitted under the Worker Protection Standard
and that involves contact with anything that has
been treated, such as plants, soil, or water is:
coveralls, waterproof gloves, shoes plus socks, and
protective eyewear.

PINEAPPLE PLANT 2.5 lb./acre. To induce
flowering when plant is mature - apply as pressure
spray using 500-800 gallons water/acre vegetative
growth. Use of china clay, bentonite or other
suitable absorbent in suspension in the water is
recommended.

3 8 6

WITCHWEED CONTROL CROPS: Corn, Cotton, Peanuts, Soybeans

APPLICATION DATES: May through July

PRECONDITIONING PERIOD: The witchweed seeds must be exposed to adequate moisture and temperatures above 72°F for a period of at least two weeks prior to application of the ethylene.

APPLICATION: A soil injector is used to apply the ethylene and the gas is delivered from the cylinder through a regulator and a flowmeter. Shanks attached to a tool bar release the gas approximately 6 to 10 inches below the soil surface. The maximum shank spacing will not exceed 40 inches. The rate of application is 1.5 pounds per acre (1.5 pounds per acre equals 19.47 cubic feet). The treatment rate can be calculated using the following formula:

$$\left(\frac{\text{Tractor Speed, MPH}}{0.12} \right) \left(\frac{\text{Treatment width, ft}}{\text{The application rate, cubic ft. per acre}} \right) = \text{flow rate in cubic feet per hour.}$$

NOTE: The flow meter is used to measure the flow rate in cubic feet per hour of the gas applied.

Apply ethylene by broadcast throughout an infected field or inject it between the crop rows.

Witchweed commonly occurs in sandy soil, however, the use of ethylene to control witchweed is not restricted to soil texture. In coarse sandy soil the ethylene disperses in a 48 inch radius from the point of injection, while a 30 inch radius of dispersal is found in clay soils.

For use by or under the supervision of USDA personnel only. Sequential application with other herbicides will result in crop injury. Injection between row crops without additional weed control techniques will give no witchweed control in current season.

TECHNICAL REFERENCE "A Witchweed Seed Germination Stimulant" Robert E. Epica, USDA Witchweed Method Development Laboratory, Whiteville, NC.

For use by or under the supervision of Federal and/or State personnel in accordance with the U.S. Department of Agriculture's manual instructions for witchweed eradication or control.

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

DOSAGE: To be used in air, in a tightly enclosed treatment room. Do not degreen until time to ready the fruit for market.

Measure Fruit	PPM	Temp	RH	USE	Time of Exposure
BANANA	1000	65-70°F	90%	To initiate degreening and ripening	3-4 Days
CITRUS:	1000		90%	To initiate degreening	24-5 Days
Grapefruit Orange/Lemon Tangerine		80-90°F 70°F	90%	Use adequate ventilation before each application	Apply 2x a Day
MELONS: Honeydew	1000	65°F	90%	To initiate degreening	3-4 Days
PEARS: Barlett Bosc	1000	65°F		To initiate degreening and ripening Use adequate ventilation before each application	4-8 Days Apply 2x a Day
PERSIMMON	1000	65°F	90%	To initiate degreening to remove stringency and to soften	2 Days
PINEAPPLE	1000	65°F	40%	To initiate degreening	3-4 Days
TOMATOES	1000	65-75°F	85-95%	To initiate degreening and ripening	8 Days observe daily
WALNUTS	1000	70-80°F	Low	To loosen nuts. Thoroughly ventilate before each application	24-34 Days Apply 2x a Day

4 8 6

WITCHWEED CONTROL CROPS: Corn, Cotton, Peanuts, Soybeans

APPLICATION DATES: May through July

PRECONDITIONING PERIOD: The witchweed seeds must be exposed to adequate moisture and temperatures above 72°F for a period of at least two weeks prior to application of the ethylene.

APPLICATION: A soil injector is used to apply the ethylene and the gas is delivered from the cylinder through a regulator and a flowmeter. Shanks attached to a tool bar release the gas approximately 6 to 10 inches below the soil surface. The maximum shank spacing will not exceed 40 inches. The rate of application is 1.5 pounds per acre (1.5 pounds per acre equals 19.47 cubic feet). The treatment rate can be calculated using the following formula:

$$\frac{\text{(Tractor Speed, MPH)} (0.12) \text{(Treatment width, ft)}}{\text{(The application rate, cubic ft. per acre)}} = \text{flow rate in cubic feet per hour.}$$

NOTE: The flow meter is used to measure the flow rate in cubic feet per hour of the gas applied.

Apply ethylene by broadcast throughout an infected field or inject it between the crop rows.

Witchweed commonly occurs in sandy soil, however, the use of ethylene to control witchweed is not restricted to soil texture. In coarse sandy soil the ethylene disperses in a 48 inch radius from the point of injection, while a 30 inch radius of dispersal is found in clay soils.

For use by or under the supervision of USDA personnel only. Sequential application with other herbicides will result in crop injury. Injection between row crops without additional weed control techniques will give no witchweed control in current season.

TECHNICAL REFERENCE "A Witchweed Seed Germination Stimulant" Robert E. Epice, USDA Witchweed Method Development Laboratory, Whiteville, NC.

For use by or under the supervision of Federal and/or State personnel in accordance with the U.S. Department of Agriculture's manual instructions for witchweed eradication or control.

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

DOSAGE: To be used in air, in a tightly enclosed treatment room. Do not degreen until time to ready the fruit for market.

Mature Fruit	PPM	Temp	RH	USE	Time of Exposure
BANANA	1000	65-70°F	80%	To initiate degreening and ripening	3-4 Days
CITRUS:	1000		90%	To initiate degreening	24-6 Days
Greenfruit Orange, Lemon, Tangerine		80-90°F	80%	Use adequate ventilation before each application	Apply 2x a Day
MELONS: Honeydew	1000	65°F	80%	To initiate degreening	3-4 Days
PEARS: Bartlett, Bosc	1000	65°F		To initiate degreening and ripening. Use adequate ventilation before each application	4-8 Days Apply 2x a Day
PERSIMMON	1000	65°F	80%	To initiate degreening to remove stringency and to soften	2 Days
PINEAPPLE	1000	65°F	40%	To initiate degreening	3-4 Days
TOMATOES	1000	65-75°F	85-95%	To initiate degreening and ripening	6 Days observe daily
WALNUTS	1000	70-80°F	Low	To loosen nuts. Thoroughly ventilate before each application	24-50 Days Apply 2x a Day

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INDOOR STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

Pesticide Storage: Store in a cool, ventilated area. Do not store near heat of flame.

Pesticide Disposal: Do not empty container into the atmosphere.

Container Disposal: Return used container with at least 25 PSIG pressure

**GENERAL PRECAUTIONS
DANGER: EXTREMELY FLAMMABLE**

1. DO NOT USE OPEN FLAME HEATERS, EXPOSED ELEMENT ELECTRIC HEATERS OR ANY SPARK PRODUCING ELECTRICAL EQUIPMENT SUCH AS ELECTRIC MOTORS WITH EXPOSED BRUSHES. USE FANS WITH AN INDUCTION TYPE OR SEALED-IN MOTOR.

2. Post "DANGER: EXTREMELY FLAMMABLE" and "NO SMOKING" signs inside the sweating room, on the outside of all doors, and in the vicinity of the cylinders and measuring apparatus.

3. Store cylinders in a well-ventilated area. When discharged from a cylinder in a confined space, ethylene gas replaces the air, and may be harmful. Do not breathe vapors.

4. Use only metal connections and piping capable of withstanding a working pressure of 2,000 pounds per square inch.

5. CYLINDERS MUST BE SECURED IN AN UPRIGHT POSITION WHEN DISCHARGING, and must be grounded before discharging in order to avoid static sparks.

6. CYLINDER VALVE OUTLET CONNECTION IS CGA 350 (LEFT-HAND THREAD); USE REGULATOR ESPECIALLY MADE FOR ETHYLENE GAS.

7. Comply with all insurance requirements, laws, ordinances and regulations.

**DIRECTIONS FOR USE
DANGER: EXTREMELY FLAMMABLE
AMOUNT OF GAS NEEDED**

Each application of ethylene shall consist of not more than one cubic foot of ethylene to 1,000 cubic feet of room space. Use of an additional quantity of ethylene will not speed up the coloring process. An excess quantity of ethylene will result in an accumulation of a flammable and explosive air-gas mixture which must be avoided.

Before starting the treatment, it is necessary to determine the cubic content of the room by multiplying the length by the width by the height. No allowance is made for the space occupied by the fruit. For instance a room 20 feet long, 15 feet wide, and 10 feet high contains 3,000 cubic feet and requires a maximum of three cubic feet of ethylene, per treatment.

THE PROPER TEMPERATURE

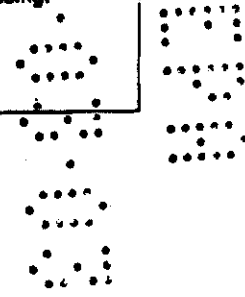
Keep the temperature between 65°F and 90°F depending on the type and condition of the fruit. If the room becomes cooler than 65°F, the coloring process is slow. At temperatures over 80°F, bacterial growth and rotting will be accelerated.

When the room must be heated, a hot water or steam pipe system is the most suitable. NEVER USE AN OPEN FLAME. The heating must be done with a gas or electric heater which has been examined and LISTED FOR THIS APPLICATION by Underwriters' Laboratories, Inc. Use no other heater in the room.

APPLICATION

Ventilate the room before each application of ethylene, particularly if the room is well sealed. Fruits "breathe" and, like human beings, need plenty of oxygen. Change air by opening the doors and windows for about half an hour before each treatment is made. In specially constructed or large sweating rooms, a ventilating fan must be provided. A fan is also useful for circulating the air and ethylene mixture. BUT ONLY IN SPECIALLY BUILT AIRTIGHT ROOMS. It assists the ethylene to penetrate closely packed fruit and reduces the coloring time. In loosely constructed rooms a fan quickly drives the ethylene out and should never be used.

All electrical equipment, including lights, fan motors, switches, etc. must comply with National Electric Code for Class 1, Group D equipment and installations. Ethylene is introduced into the room in accurately measured quantities at regular intervals of time. The gas must be conducted from the cylinder through a regulator with a flowmeter calibrated for measuring flow in cubic feet per minute of ethylene gas. The gas then flows to the treating room through metal pipes or tubing.



6 7 6

THE REGULATOR SHOULD BE OPERATED AS FOLLOWS:

1. Connect the regulator to the cylinder valve. (Note the threads of the valve are left-handed). The union nut must be drawn up tight to prevent any leak at this point. Soapy water applied to this joint will indicate leaks by expanding bubbles. **NEVER USE A MATCH OR OPEN FLAME TO CHECK FOR FLAMMABLE GAS LEAKS.**

2. Attach a flexible metal hose from the outlet connection of the regulator to the piping which leads to the building or vault containing the fruit. **THIS LEAD-IN PIPE MUST BE GROUNDED.**

3. See that the handwheel on the regulator is backed up by turning it to the left so that it is loose. Open the valve at the top of the cylinder **SLOWLY** by turning to the left all the way.

4. Assume the sweating room is 20 feet long, 15 feet wide, and 10 feet high, or 3,000 cu. ft. in volume. This will require approximately three (3) cu. ft. of ethylene. Time the gas flow by holding a watch in one hand, and turn the pressure adjusting screw clockwise until the needle starts to move. Start the timing from this point, and continue to turn the pressure adjusting screw in, until the pointer shows 1/2 cu. ft. of ethylene is flowing from the cylinder each minute. Allow the ethylene to flow for six minutes (six minutes times 1/2 cu. ft. per minute equals three cu. ft.) and then reverse the handwheel counterclockwise until it is loose.

THEN CLOSE THE CYLINDER VALVE TIGHTLY.

5. Detach the hose from the regulator so that it becomes impossible for any more ethylene to get into the ripening room.

A low rate of flow, rather than a high rate, is desirable as the longer time required will assure greater accuracy in measuring the gas. The following rates of flow are recommended:

For Rooms up to 5,000 cu. ft. in volume: 1/2 cu. ft. per minute.

For Rooms up to 5,000 and 10,000 cu. ft.: 1 cu. ft. per minute.

For Rooms over 10,000 cu. ft.: 2 to 2 1/2 cu. ft. per minute.

THOROUGH VENTILATION IS ESSENTIAL. It is customary to treat the fruits twice each day, usually in the morning and at night. In many cases, better results are obtained from four treatments per day at 6 hour intervals.

