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63963-1

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 14 1994

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Mark L. Itzkoff
LIQUID AIR CORP
C/O KELLER AND HECKMAN
1001 G STREET N.W. SUITE 500 WEST
WASHINGTON, DC 20001

Subject: Label Amendment Submission of 01/14/94 in Response to PR Notice 93-7
EPA Reg. No. 63963-1
ETHYLENE

Dear Registrant:

The labeling cited above and submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is accepted subject to the comments reflected on the enclosed sheet. A copy of your proposed labeling stamped "ACCEPTED WITH COMMENTS" is enclosed.

WHAT THIS ACCEPTANCE MEANS:

Based on your certification, the Agency has accepted the labeling changes that are necessary to comply with the Worker Protection Standard (WPS) labeling requirements of 40 CFR part 156, subpart K, described in PR Notices 93-7 and 93-11. Any other labeling changes submitted in connection with this amendment application but not directly related to compliance with the WPS have not been reviewed or accepted by the Agency. If you wish to make such changes, you must submit a separate amendment application proposing them. If your product is currently suspended, the acceptance of this labeling amendment does not affect the suspension in any way.

WHAT YOU NEED TO DO NEXT:

By the next label printing make all the specified changes to your labeling. Send to EPA one (1) copy of the final printed labeling:

- BEFORE selling or distributing any product bearing the final printed labeling
- AND
- WITHIN one year from date of this acceptance.



Recycled/Recyclable
Printed with Soy/Canola Ink on paper that
contains at least 50% recycled fiber

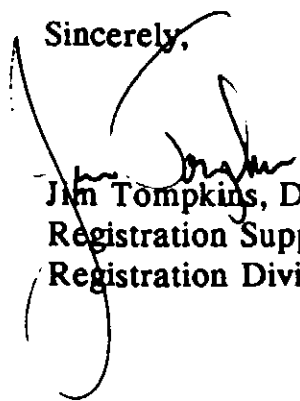
Submit the final printed labeling via the U.S. Postal Service to:

Document Processing Desk (FIN-LABEL)
Office of Pesticide Programs (7505C)
U.S. Environmental Protection Agency
401 M Street, SW
Washington, D.C. 20460-0001

Hand or courier deliveries of final printed labeling may be made to:

Document Processing Desk (FIN-LABEL)
Office of Pesticide Programs
Room 266A, Crystal Mall 2
1921 Jefferson Davis Highway
Arlington, VA 22202

Sincerely,



Jim Tompkins, Deputy Chief
Registration Support Branch
Registration Division (7505W)

Attachment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division

Mark L. Itzkoff
LIQUID AIR CORP.
C/O KELLER AND HECKMAN
1001 G STREET N.W. SUITE 500 WEST
WASHINGTON DC 20001

Comment for: EPA Reg Nr.63963-1
ETHYLENE

The following specific comments pertain to your WPS labeling submission concerning the product cited above:

The Agricultural Use Requirements section must be located in a clearly separate box on the product labeling -- with lines or other graphic indicators (such as contrasting color) to separate the section from the surrounding text.

Delete the Nonagricultural Use Requirements box on your proposed label.

Delete the crossed-out statements on your proposed label. They are redundant statements or phrases.

Correct the typographical errors circled on your proposed label.

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ETHYLENE, COMPRESSED

UN 1062

FLAMMABLE

Active ingredient - Ethylene	99.5%
Inert ingredients -	1.5%
Total	100.0%

Net Contents ____ lbs.

Establishment No. 32462-TX-001

EPA Registration No. 63963-1

IN CASE OF EMERGENCY CALL
1-800-231-1366

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 THE PRODUCT. CALL 1-800-231-1366 FOR MORE COPIES. 2) YOU ARE TRAINED TO USE CYLINDER AND CONTENTS, INCLUDING EMERGENCY PROCEDURES. 3) YOU HAVE BEEN ADVISED OF THE HAZARDS OF THE PRODUCT. SECURE CYLINDER IN STORAGE AND USE.

DANGER

PELIGRO

*Si usted no entiende la etiqueta, busque a 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.)*

Statements of Practical Treatment:

If in eyes: Flush with plenty of water. Call a physician.
If on skin: 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 frostbite: Soak in lukewarm (not hot) water. Get medical attention.

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.

Precautionary Statements

Hazard to Humans and Domestic Animals

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

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.

Physical or Chemical Hazards

Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130 degrees Fahrenheit may cause bursting.

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

Store and use with adequate ventilation. Store in cool well ventilated area. Keep cylinder away from heat, direct sunlight, open flames and spark producing devices. Keep cylinder temperature from exceeding 130° F. Close valve when not in use and when empty. Return cylinder to supplier.

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 source 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.

Do not remove this product label

BEST AVAILABLE COPY

Liquid Air Corp.
 P.O. BOX 5036
 Walnut Creek, CA 94596

ACCEPTED
 with COMMENTS
 In EPA Letter Dated
 MAR 14 1994

Under the Federal Insecticide,
 Fungicide, and Rodenticide Act
 as amended, for the pesticide
 registration under EPA Reg. No.
 63963-1

5 9 9

**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**

LIQUID AIR

AN AIR LIQUIDE GROUP COMPANY

**Liquid Air Corporation
Alphagaz Division
2121 North California Blvd.
Walnut Creek, CA 94596**

DO NOT DETACH THIS BOOKLET

DANGER

EXTREMELY FLAMMABLE

ETHYLENE is extremely flammable when mixed with air and will explode if ignited. Active Ingredient: Ethylene 95% 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 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.

The statements in the agricultural use requirements box must be properly delineated box; and they must conform to what is shown on the label sheet in terms of placement.

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.

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:

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

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

The ethylene may be broadcast throughout an infected field or it may be injected between the crop rows.

DO NOT TILL THE SOIL WITHIN 12 HOURS AFTER APPLICATION.

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 applications with other herbicides may 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.

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.

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Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of 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.

RECOMMENDED 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	90%	To initiate degreening and ripening	3-4 Days
CITRUS:	1000		90%	To initiate degreening	2 1/2 - 5 Days
Grapefruit Orange Lemon Tangerine		80-90°F 70°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 astringency 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 hulls. Thoroughly ventilate before each application.	2 1/2-3 1/2 Days Apply 2x a Day

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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. Cylinders should be stored 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 should 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 may result in an accumulation of a flammable and explosive air-gas mixture which should 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 may 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 may be done with a gas or electric heater which has been examined and LISTED FOR THIS APPLICATION by Underwriters' Laboratories, Inc. No other heater should be used in the room.

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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. The air can be changed 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 should 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 fruits and reduces the coloring time. In loosely constructed rooms, the fan would quickly drive the ethylene out and should never be used.

All electrical equipment, including lights, fan motors, switches, etc. should 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 should be conducted from the cylinder through a regulator with a flowmeter calibrated for measuring flow in cubic feet per mixture of ethylene gas. The gas then flows to the treating room through metal pipes or tubing.

THE REGULATOR SHOULD BE OPERATED AS FOLLOWS:

1. Connect the regulator to the cylinder valve. (Note the threads of the valve are left-hand). See that the union nut is 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 would usually 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 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.

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