

37982-2

02/24/1994

1/14

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

24 FEB 1994

Chris Cheah, Ph.D.
All Pure Chemical Company
P.O. Box 268
Tracy, CA 95376

Subject: All Pure Chlorine Gas
EPA Registration No. 37982-2
Your Amendment Dated June 4, 1993

Dear Dr. Cheah:

This is in response to your labeling revised to add contact times and expanded use directions.

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable subject to the comments listed below. A stamped copy is enclosed for your records.

1. Place on the front (center) panel a referral to the remaining Precautionary Statements -- such as, "See side panel for additional precautions."

2. Submit five copies of the finished labeling before the product is released for shipment bearing the amended labeling.

Note that the subject amended labeling does not include these uses which appeared on your previous EPA-accepted labeling: "the control of algae and slime in fountains, ponds and ornamental lakes containing no fish or wildlife;" "a disinfectant and/or algacide...in municipal water supplies, sewage and waste management plants, and in commercial and industrial swimming pools;" and "a slimicide in water cooling systems and in paper mills." If you intend for these uses to continue to be included in this product's registration, submit five copies of amended composite draft labeling indicating all uses and use directions for which the product has been registered.

CONCURRENCES

| | | | | | | | | |
|---------|--|--|--|--|--|--|--|--|
| SYMBOL | | | | | | | | |
| SURNAME | | | | | | | | |
| DATE | | | | | | | | |

2/14

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If you have any questions about this letter, please call
Wallace Powell at 703-305-6938.

Sincerely,



Ruth G. Douglas
Product Manager 32
Antimicrobial Program Branch
Registration Division (7505C)

Enclosure

ALL PURE CHLORINE GAS

(Liquified Gas Under Pressure)

To be used for the control of organisms causing decay of fruits and vegetables as listed on the label. Also, for surface sanitation of packing meat house equipment, meat, fish, poultry and egg processing plant.

ACTIVE INGREDIENT: CHLORINE.....99.5%
INERT INGREDIENTS......0.5%
TOTAL:.....100.0%

KEEP OUT OF REACH OF CHILDREN

DANGER



POISON

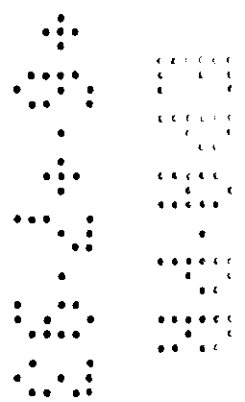
ACCEPTED
with COMMENTS
by EPA Letter D-0001
24 FEB 1994
Under the Federal Insecticide,
Fungicide, and Rodenticide Act
extended for the purpose
authorized under FIFRA Reg. 40
37982-2

STATEMENT OF PRACTICAL TREATMENT AND FIRST AID

If inhaled, move to fresh air, keep warm and quiet and call a physician. If not breathing give artificial respiration, preferably mouth to mouth. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Immediately get medical attention. Have approved U.S. Bureau of Mines Gas Masks available. Make daily inspection for leaks. Stop leak at once since it will become greater with time.

EPA REG. NO. 37982-2
EPA EST. NO. 37982-CA-1, CA-2, CA-3, WA-1

MANUFACTURED BY
ALL PURE CHEMICAL COMPANY
TRACY, CA 95376



CENTER PANEL

4/4

ACCEPTED
WITH COMMENTS
24 FEB 1994

Code,
Date
No.

37982-2

PRECAUTIONARY STATEMENTS HAZARD TO HUMANS AND DOMESTIC ANIMALS

DANGER: Corrosive to eyes, skin, mucous membranes in the presence of moisture. It is fatal if inhaled. Do not breathe air containing this gas. Do not get in eyes, on skin, or on clothing.

ENVIRONMENTAL HAZARDS: This pesticide is toxic to fish. Do not discharge into lakes, streams, ponds or public waters, unless in accordance with a NPDES permit. For guidance contact the regional office of the EPA, the state authority authorized to issue NPDES permits, or All Pure Chemical Company.

CHEMICAL-PHYSICAL HAZARDS: Chlorine is a non-flammable gas which is liquefied and under pressure. Do not drop container. Keep away from intense heat or open sunlight. Chlorine is corrosive to most metals in the presence of moisture.

STORAGE AND DISPOSAL

Keep containers away from heat. Do not store in direct sunlight. Do not drop containers. Empty cylinders should be properly identified with return tags and returned to ALL PURE CHEMICAL COMPANY. All storage containers must have a weather resistant label attached near the outlet valve and must not be accessible to the general public. Do not contaminate water, food, or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

DIRECTIONS FOR USE:

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Directions for use are continued on the right panel.

LEFT PANEL

DIRECTIONS FOR USE:

Refer to **ALL PURE LIQUID CHLORINE INSTRUCTION BOOKLET** for commodity and surface sanitization instructions.

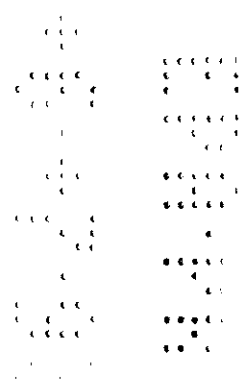
1. After treatment, moisture must be removed by a centrifugation process.
2. Mushrooms must be treated with an anti-oxidant after chlorine treatment to prevent browning.

Always read the label before using any pesticide.

Refer to the Chlorine Institute Manual for additional safety information.

ACCEPTED
 with CC# 37982-2
 in EPA Label Draft
 24 FEB 1994

Under the provisions of the Federal Insecticide, Fungicide, and Rodenticide Act, this pesticide is registered under EPA Reg. No. 37982-2



6/14

ACCEPTED
with COMMENTS

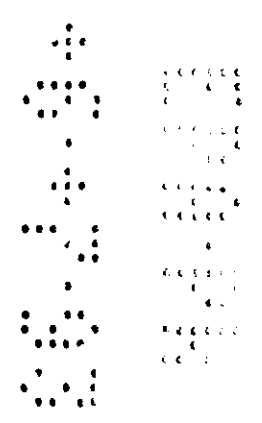
24 FEB 1994

37982-2

ALL PURE CHLORINE GAS (Liquified Gas Under Pressure)

RECOMMENDED CHLORINE CONCENTRATION LEVELS

| COMMODITY | TREATMENT METHOD | PPM OF AVAILABLE CHLORINE TO USE |
|------------------------|----------------------|----------------------------------|
| Apple | Dump Tank | 100 - 150 |
| | Fume | 30 - 50 |
| | Spray | 100 - 150 |
| Artichokes | Spray | 100 - 150 |
| Asparagus | Hydrocooler | 125 - 150 |
| | Spray | 100 - 150 |
| Bell Peppers | Dump Tank | 100 - 135 |
| | Spray | 300 - 400 |
| Broccoli | Spray | 100 - 150 |
| Brussels Sprout | Spray | 100 - 150 |
| Cabbage (Chopped) | Spray | 80 - 100 |
| | Dump Tank | 100 - 200 |
| Carrots | Fume | 100 - 200 |
| | Spray | 50 - 100 |
| | Spray | 300 - 400 |
| Cauliflower | Spray | 100 |
| Celery | Spray | 75 - 100 |
| Cherries | Spray | 80 - 100 |
| Chopped Salad | Spray | 75 - 100 |
| Com | Spray | 75 - 100 |
| Cucumbers | Spray | 50 - 200 |
| Eggs | Spray Shell | 100 - 200 |
| | Spray Product | 1 - 3 |
| Fish and Shrimp | Spray / Tank | 75 - 150 |
| Garlic | Drench | 100 - 150 |
| Grapefruit | Spray | 40 - 75 |
| | Spray | 100 |
| Kiwi Fruit | Dump Tank | 30 - 50 |
| Lemons | Spray | 40 - 75 |
| | Spray | 10 - 20 |
| Lettuce (Butter) | Spray | 80 - 100 |
| Lettuce (Chopped) | Spray | 20 - 40 |
| Lettuce (Romaine) | Processing Water | Up to 5 |
| Meat | Reused Cooling Water | ! |
| | Spray Wash | Up to 200 |
| | Hydrocooler | 30 - 75 |
| Melons (All varieties) | Spray | 100 - 200 |
| | Spray | 100 - 200 |
| Mushrooms | Spray | 10 - 100 |
| Olives | Spray / Tank | 75 - 150 |
| Onions | Spray | 75 - 120 |
| Onions (Green) | Drench | 100 - 200 |
| Oranges | Spray | 40 - 75 |
| | Hydrocooler | 30 - 75 |
| Nectaries | Spray | 50 - 100 |
| | Hydrocooler | 30 - 75 |
| Peaches | Spray | 50 - 100 |
| | Dump Tank | 200 - 300 |
| Pears | Spray | 50 - 100 |
| Peas (Pod) | Spray | 300 - 400 |
| Peppers | Hydrocooler | 30 - 75 |
| Plums | Spray | 50 - 100 |
| | Dump Tank | 30 - 100 |
| Potatoes | Fume | 200 - 300 |
| | Spray | 100 - 200 |
| | Spray | 500 - 600 |
| Potatoes (White) | Cooler | 5 - 20 |
| Poultry | Processed | 20 |
| | Spray / Tank | 50 - 100 |
| Prunes | Spray | 100 - 200 |
| Pumpkins | Spray | 100 - 150 |
| Radicis | Tank | 10 - 25 |
| | Spray | 75 - 150 |
| Spinach | Spray | 75 - 100 |
| Squash | Tank | 100 - 150 |
| Sweet Potatoes | Spray | 100 - 150 |
| | Tank | 200 - 350 |
| Turnips | Tank | 100 - 200 |
| Yams | Tank | 100 - 200 |



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ALL PURE CHEMICAL COMPANY

INSTRUCTION BOOKLET ALL PURE LIQUID CHLORINE EPA REG. NO. 37982-2

ACTIVE INGREDIENT:

| | |
|-------------------------|--------|
| CHLORINE:..... | 99.5% |
| INERT INGREDIENTS:..... | 0.5% |
| TOTAL:..... | 100.0% |

ACCEPTED
with COMMENTS
in EPA Letter Dated
24 FEB 1994
Under the Federal Insecticide, Fungicide, and Rodenticide Act, this product is registered for use as a disinfectant.
EPA Reg. No. 37982-2

KEEP OUT OF REACH OF CHILDREN

DANGER  POISON

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT
IN A MANNER INCONSISTENT WITH ITS LABELING.

FOR AGRICULTURAL USE ONLY

A) SAFETY RULES:

- 1) Chlorine is corrosive to iron, brass and copper. Plastic lines should be used whenever practicable.
- 2) Locate the chlorinator outside the building or room in which people normally work. Use plastic pipe to transport the chlorinated water.
- 3) Chlorine cylinder must be chained to a wall near the chlorinator.
- 4) If the chlorinator must be located inside the building place it next to an outside wall or corner. Locate it as far away from the people working as possible.
- 5) All Pure Liquid Chlorine label should be attached to each cylinder. Above the cylinder a sign (approximately 10 x 14 inches) stating "DANGER - CHLORINE" should be posted in clear view.
- 6) Chlorine is highly reactive when in contact with OPP or SOPP. DO NOT mix chlorine with water solution or wax containing OPP or SOPP.
- 7) When chlorine and OPP is used on the same line, chlorine treated commodity should be followed by a fresh water rinse or have a minimum of 10 seconds interval between chlorine application and OPP application to allow the chlorine to dissipate.
- 8) Read and follow the chlorinator manual before operating or changing the chlorine cylinder.
- 9) Read and follow the precautionary statements and statement of practical treatment on the label before using this product.
- 10) Refer to Chlorine Institute Manual for additional safety information.

ACCEPTED
WITH COMMENTS
by EPA Lead District
24 FEB 1994
Under the authority of the Administrator,
Environmental Protection Agency, Act as
authorized by the Administrator, State
No. 37982-2

B) DAILY CHECK LIST:

- 1) Check for chlorine leak:

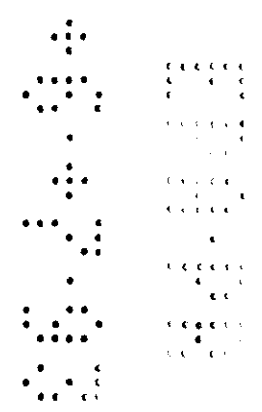
This can be done by using ammonia. Wet your finger with ammonia and go over places in the unit where leaks may occur. White smoke appears when ammonia comes in contact with chlorine gas. If a leak is detected shut the system down completely. Do not operate the system until the leak is fixed.

- 2) Correct pH and chlorine concentration:

These are the most important factors that determine the effectiveness of chlorine. The chlorine concentration should be checked at least twice daily and adjustments should be made when ever necessary. Use test paper or field colorimetric test kit to determine the chlorine concentration and pH.

- 3) All Pure Soda Ash is used as a pH buffer in the wash process. Use a 55 gallon plastic lined drum of All Pure Soda Ash. Add more when the drum is less than 3/4 full. Constant flow of fresh water to this tank is necessary. The in-flow of water should be the same as out-flow of chlorinated water. Percolate the Chlorine from the bottom of the tank and take the chlorinated water from the top.

ACCEPTED
with COMMENTS
in EPA Letter Dated:
24 FEB 1994
Under the provisions of the
Administrative Procedure Act
any person is entitled to
a hearing on the application
of the provisions of the Act.
37982-2



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24 FEB 1994

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C) DIRECTIONS FOR USE:

For surface sanitation of packing house equipment, meat, fish, poultry and egg processing plants.

For packing house use:

Clean the equipment, surfaces and brushes with fresh water and remove all the debris. Spray a solution of 50 ppm of chlorinated water on the surfaces to the point of run off. No fresh water rinse is required after chlorine treatment.

For treatment of different commodities no fresh water rinse is required.

For meat, poultry, egg and fish processing plants:

For sanitizing facilities and equipment after cleaning spray 50 ppm of chlorinated water on the surface of equipment to the point of run off. This concentration also can be used to wash and sanitize the cutting and other portable equipment. No potable water rinse is required.

If the poultry plant is in use and continues sanitizing is required use 20 ppm of chlorinated water.

COMMODITY TREATMENT METHOD PPM OF AVAILABLE CHLORINE TO USE

| | | |
|---------------|------------------|------------------|
| Apples | Dump Tank | 100 - 150 |
| | Flume | 30 - 50 |
| | Spray | 100 - 150 |

Submerge the apples for a minimum of 45 seconds. Do not exceed 90 seconds contact time in dump tank or flume. Spray until thoroughly wet.

| | | |
|-------------------|--------------|------------------|
| Artichokes | Spray | 100 - 150 |
|-------------------|--------------|------------------|

Spray until thoroughly wet.

| | | |
|------------------|--------------------|------------------|
| Asparagus | Hydrocooler | 125 - 150 |
| | Spray | 100 - 150 |

Hydrocool for 20 - 30 minutes. Spray until thoroughly wet.

| | | |
|---------------------|------------------|------------------|
| Bell Peppers | Dump Tank | 100 - 135 |
| | Spray | 300 - 400 |

Spray until thoroughly wet. Remove after 2 - 5 minutes contact time in the dump tank.

| | | |
|-----------------|--------------|------------------|
| Broccoli | Spray | 100 - 150 |
|-----------------|--------------|------------------|

Spray until thoroughly wet.

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COMMODITY TREATMENT METHOD PPM OF AVAILABLE CHLORINE TO USE

| | | |
|------------------------|--------------|------------------|
| Brussels Sprout | Spray | 100 - 150 |
|------------------------|--------------|------------------|

Spray until thoroughly wet.

| | | |
|--------------------------|--------------|-----------------|
| Cabbage (Chopped) | Spray | 80 - 100 |
|--------------------------|--------------|-----------------|

Spray until thoroughly wet. After treatment the adhered moisture must be removed by a centrifugation process.

| | | |
|----------------|------------------|------------------|
| Carrots | Dump Tank | 100 - 200 |
| | Flume | 100 - 200 |
| | Spray | 50 - 100 |

Remove the carrots from dump tank and flume after 1-5 minutes contact time. Spray until thoroughly wet.

| | | |
|--------------------|--------------|------------------|
| Cauliflower | Spray | 300 - 400 |
|--------------------|--------------|------------------|

Spray until thoroughly wet.

| | | |
|---------------|--------------|------------|
| Celery | Spray | 100 |
|---------------|--------------|------------|

Spray until thoroughly wet.

| | | |
|-----------------|--------------|-----------------|
| Cherries | Spray | 75 - 100 |
|-----------------|--------------|-----------------|

Spray until thoroughly wet.

| | | |
|----------------------|--------------|-----------------|
| Chopped Salad | Spray | 80 - 100 |
|----------------------|--------------|-----------------|

Spray until thoroughly wet. After treatment the adhered moisture must be removed by a centrifugation process.

| | | |
|-------------|--------------|-----------------|
| Corn | Spray | 75 - 100 |
|-------------|--------------|-----------------|

Spray until thoroughly wet.

| | | |
|------------------|--------------|-----------------|
| Cucumbers | Spray | 75 - 100 |
|------------------|--------------|-----------------|

Spray until thoroughly wet.

| | | |
|-------------|----------------------|------------------|
| Eggs | Spray Shell | 50 - 200 |
| | Spray Product | 100 - 200 |

Spray until thoroughly wet.

| | | |
|-------------------------|--------------|--------------|
| Fish and Shrimps | Spray | 1 - 3 |
|-------------------------|--------------|--------------|

Spray until thoroughly wet.

| | | |
|---------------|---------------------|-----------------|
| Garlic | Spray / Tank | 75 - 150 |
|---------------|---------------------|-----------------|

Remove from tank after 2 - 5 minutes contact. Spray until thoroughly wet.

| | | |
|-------------------|---------------|------------------|
| Grapefruit | Drench | 100 - 150 |
| | Spray | 40 - 75 |

Spray until thoroughly wet. Drench for 3 - 5 minutes. For citrus quarantine treatment, use 200 ppm of available chlorine at pH 6.0 - 7.5, in drench tank.

ACCEPTED
 BY: [Signature]
 24 FEB 1994
 37982-2

12/14

COMMODITY TREATMENT METHOD PPM OF AVAILABLE CHLORINE TO USE

| | | |
|--|-----------------------------|------------------|
| Kiwi Fruit | Spray | 100 |
| Spray until thoroughly wet. | | |
| Lemons | Dump Tank | 30 - 50 |
| | Spray | 40 - 75 |
| Remove from tank after 2 - 3 minutes contact time. Spray until thoroughly wet. | | |
| Lettuce (Butter) | Spray | 10 - 20 |
| Spray until thoroughly wet. | | |
| Lettuce (Chopped) | Spray | 80 - 100 |
| Spray until thoroughly wet. After treatment the adhered moisture must be removed by a centrifugation process. | | |
| Lettuce (Romaine) | Spray | 20 - 40 |
| Spray until thoroughly wet. | | |
| Meat | Processing Water | Up to 5 |
| | Reused Cooling Water | 1 |
| | Spray Wash | Up to 200 |
| Spray with chlorinated water containing 200 ppm of available chlorine for carcass wash and spray water. | | |
| Melons (All varieties) | Hydrocooler | 30 - 75 |
| | Spray | 100 - 200 |
| Spray until thoroughly wet. Hydrocool for 20 - 30 minutes. | | |
| Mushrooms | Spray | 100 - 200 |
| Mushrooms must be treated with an anti-oxidant after chlorine treatment to prevent browning. | | |
| Olives | Spray | 10 - 100 |
| Spray until thoroughly wet. | | |
| Onions | Spray / Tank | 75 - 150 |
| Remove from tank after 2 - 3 minutes contact time. Spray until thoroughly wet. | | |
| Onions (Green) | Spray | 75 - 120 |
| Spray until thoroughly wet. | | |
| Oranges | Drench | 100 - 200 |
| | Spray | 40 - 75 |
| Spray until thoroughly wet. Drench for 3 - 5 minutes. For citrus quarantine treatment, use 200 ppm of available chlorine at pH 6.0 - 7.5 in drench tank. | | |

ACCEPTED
 BY THE U.S. DEPT. OF AGRICULTURE
 24 FEB 1994
 37982-2
 U.S. DEPT. OF AGRICULTURE
 ARS
 ARS No. 37982-2
 ARS No. 37982-2

13/14

COMMODITY TREATMENT METHOD PPM OF AVAILABLE CHLORINE TO USE

| | | |
|------------|-------------|----------|
| Nectarines | Hydrocooler | 30 - 75 |
| | Spray | 50 - 100 |

Spray until thoroughly wet. Hydrocool for 20 - 30 minutes.

| | | |
|---------|-------------|----------|
| Peaches | Hydrocooler | 30 - 75 |
| | Spray | 50 - 100 |

Spray until thoroughly wet. Hydrocool for 20 - 30 minutes.

| | | |
|-------|-----------|-----------|
| Pears | Dump Tank | 200 - 300 |
|-------|-----------|-----------|

Remove from tank after 2 - 3 minutes contact time.

| | | |
|------------|-------|----------|
| Peas (Pod) | Spray | 50 - 100 |
|------------|-------|----------|

Spray until thoroughly wet.

| | | |
|---------|-------|-----------|
| Peppers | Spray | 300 - 400 |
|---------|-------|-----------|

Spray until thoroughly wet.

| | | |
|-------|-------------|---------|
| Plums | Hydrocooler | 30 - 75 |
| | Spray | 50-100 |

Spray until thoroughly wet. Hydrocool for 20 - 30 minutes.

| | | |
|----------|-----------|-----------|
| Potatoes | Dump Tank | 30 - 100 |
| | Flume | 200 - 300 |
| | Spray | 100 - 200 |

Remove from tank and flume after 2 - 5 minutes contact time.

| | | |
|------------------|-------|-----------|
| Potatoes (White) | Spray | 500 - 600 |
|------------------|-------|-----------|

This concentration of chlorine should be used only if bleaching of potatoes is desirable. Spray until thoroughly wet on cleaned potatoes.

| | | |
|---------|-----------|--------|
| Poultry | Cooler | 5 - 20 |
| | Processed | 20 |

Remove from cooler after up to one hour contact time. For processed spray until thoroughly wet.

| | | |
|--------|--------------|----------|
| Prunes | Spray / Tank | 50 - 100 |
|--------|--------------|----------|

Remove from tank after 1 - 3 minutes contact time. Spray until thoroughly wet.

| | | |
|----------|-------|-----------|
| Pumpkins | Spray | 100 - 200 |
|----------|-------|-----------|

Spray until thoroughly wet.

| | | |
|----------|-------|-----------|
| Radishes | Spray | 100 - 150 |
| | Tank | 10 - 25 |

Remove from tank after 1 - 1 1/5 minutes contact time. Spray until thoroughly wet.

| | | |
|---------|-------|----------|
| Spinach | Spray | 75 - 150 |
|---------|-------|----------|

Spray until thoroughly wet.

24 FEB 1994
 37982-2
 U.S. DEPARTMENT OF AGRICULTURE
 AGENCY FOR INTERNATIONAL DEVELOPMENT
 WASHINGTON, D.C. 20550

14/14

| COMMODITY | TREATMENT METHOD | PPM OF AVAILABLE CHLORINE TO USE |
|-----------|------------------|----------------------------------|
|-----------|------------------|----------------------------------|

| | | |
|--------|-------|----------|
| Squash | Spray | 75 - 100 |
|--------|-------|----------|

Spray until thoroughly wet.

| | | |
|----------------|------|-----------|
| Sweet Potatoes | Tank | 100 - 150 |
|----------------|------|-----------|

Remove after 2 - 3 minutes of contact time in the tank.

| | | |
|----------|-------|-----------|
| Tomatoes | Spray | 100 - 150 |
| | Tank | 200 - 350 |

Remove after 2 - 3 minutes of contact time in the tank. Spray until thoroughly wet.

| | | |
|---------|------|-----------|
| Turnips | Tank | 100 - 200 |
|---------|------|-----------|

Remove after 2 - 3 minutes of contact time in the tank.

| | | |
|------|------|-----------|
| Yams | Tank | 100 - 200 |
|------|------|-----------|

Remove after 2- 3 minutes of contact time in the tank.

ACCEPTED
 WITH COMMENTS
 24 FEB 1994
 37982-2
 U.S. DEPARTMENT OF AGRICULTURE
 Agricultural Marketing Service
 Reg. No.

14/14