

80697-3

05/29/2013

1/16



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
WASHINGTON, DC 20460

OFFICE OF  
CHEMICAL SAFETY AND  
POLLUTION PREVENTION

Michael Kellogg  
Authorized Agent for Zhejiang Tide CropScience Co., Ltd.  
Pyxis Regulatory Consulting, Inc.  
4110 136<sup>th</sup> Street NW  
Gig Harbor, WA 98332

MAY 29 2013

Subject: Product Name: Tide Paclo 0.4% Liquid  
EPA Reg. No. 80697-3  
Submission date: 5/2/2013  
Storage and Disposal Statement Notification Change per PRN 2007-4  
OPP Decision Number: 478463

Dear Mr. Kellogg:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 2007-4. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 2007-4 and finds that the label changes requested fall within the scope of PRN 2007-4.

The label submitted with the application has been stamped "Notification" and will be placed in our records.

If you have any questions concerning this letter, please contact Kaitlin Keller at 703-308-8172 or [keller.kaitlin@epa.gov](mailto:keller.kaitlin@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Tony Kish", is written over the typed name.

Tony Kish  
Product Manager 22  
Fungicides Branch  
Registration Division (7504P)

2/16

Please read instructions on reverse before completing form.

Form Approved. OMB No. 2070-0080. Approval expires 2-28-95



United States  
Environmental Protection Agency  
Washington, DC 20460

☐ Registration  
☐ Amendment  
☒ Other

OPP Identifier Number

### Application for Pesticide - Section I

|                                                                                                                                                                                                                                                 |                                                                                                                                                                                      |                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| 1. Company/Product Number<br>80697-3                                                                                                                                                                                                            | 2. EPA Product Manager<br>T. Kish                                                                                                                                                    | 3. Proposed Classification<br><input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted |
| 4. Company/Product (Name)<br>Zhejiang Tide CropScience Co., Ltd. / Tide Paclo 0.4% Liquid                                                                                                                                                       | PM#<br>22                                                                                                                                                                            |                                                                                                            |
| 5. Name and Address of Applicant (Include ZIP Code)<br>Zhejiang Tide CropScience Co., Ltd.<br>c/o Pyxis Regulatory Consulting, Inc.<br>4110 136th St. NW<br>Gig Harbor, WA 98332<br><br><input type="checkbox"/> Check if this is a new address | 6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to:<br>EPA Reg. No. _____<br>Product Name _____ |                                                                                                            |

### Section - II

|                                                                                |                                                                                        |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| <input type="checkbox"/> Amendment - Explain below.                            | <input type="checkbox"/> Final printed labels in response to Agency letter dated _____ |
| <input type="checkbox"/> Resubmission in response to Agency letter dated _____ | <input type="checkbox"/> "Me Too" Application.                                         |
| <input checked="" type="checkbox"/> Notification - Explain below.              | <input type="checkbox"/> Other - Explain below.                                        |

**Explanation:** Use additional page(s) if necessary. (For section I and Section II.)

Notification of label change per PR Notice 2007-4. This notification is consistent with the guidance in PR Notice 2007-4 and the requirements of EPA's regulations at 40 CFR 156.10, 156.140, 156.144, 156.146, and 156.156. No other changes have been made to the labeling or the Confidential Statement of Formula for this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if the amended label is not consistent with the requirements of 40 CFR 156.10, 156.140, 156.144, 156.146, and 156.156, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

### Section - III

|                                                                                                                                                             |                                                                                          |                                                                                                   |  |                                                                                                                                              |                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| 1. Material This Product Will Be Packaged In:                                                                                                               |                                                                                          |                                                                                                   |  | 2. Type of Container                                                                                                                         |                                             |
| Child-Resistant Packaging<br><input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No                                                         | Unit Packaging<br><input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No | Water Soluble Packaging<br><input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No |  | <input type="checkbox"/> Metal                                                                                                               | <input checked="" type="checkbox"/> Plastic |
| * Certification must be submitted                                                                                                                           |                                                                                          |                                                                                                   |  | <input type="checkbox"/> Glass                                                                                                               | <input type="checkbox"/> Paper              |
| If "Yes" Unit Packaging wgt. No. per container                                                                                                              |                                                                                          | If "Yes" Package wgt. No. per container                                                           |  | Other (Specify) _____                                                                                                                        |                                             |
| 3. Location of Net Contents Information<br><input checked="" type="checkbox"/> Label <input type="checkbox"/> Container                                     |                                                                                          | 4. Size(s) Retail Container<br>1 qt., 1 gallon, 2.5 gallons, 250 gallons                          |  | 5. Location of Label Directions<br><input checked="" type="checkbox"/> On Label<br><input type="checkbox"/> On Labeling accompanying product |                                             |
| 6. Manner in Which Label is Affixed to Product<br><input checked="" type="checkbox"/> Lithograph Paper glued Stenciled <input type="checkbox"/> Other _____ |                                                                                          |                                                                                                   |  |                                                                                                                                              |                                             |

### Section - IV

|                                                                                                                                                                                                                                                                                    |                   |                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------|
| 1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)                                                                                                                                      |                   |                                                     |
| Name<br>Michael Kellogg                                                                                                                                                                                                                                                            | Title<br>Agent    | Telephone No. (Include Area Code)<br>(253) 853-7369 |
| <b>Certification</b><br>I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law. |                   | 6. Date Application Received<br><br>(Stamped)       |
| 2. Signature<br>                                                                                                                                                                                                                                                                   | 3. Title<br>Agent |                                                     |
| 4. Typed Name<br>Michael Kellogg                                                                                                                                                                                                                                                   | 5. Date<br>5/2/13 |                                                     |

3/6  
5/7  
PYXIS REGULATORY CONSULTING, INC.

4110 136<sup>th</sup> St. NW  
Gig Harbor, WA 98332

Phone: 253-853-7369  
Fax: 253-853-5516  
www.PyxisRC.com

May 2, 2013

COURIER DELIVERY

Tony Kish (PM 22)  
Document Processing Desk (**NOTIF**)  
Office of Pesticide Programs (7504P)  
U.S. Environmental Protection Agency  
Room S-4900, One Potomac Yard  
2777 S. Crystal Drive  
Arlington, VA 22202

RE: Zhejiang Tide CropScience Co., Ltd. – Tide Paclo 0.4% Liquid (EPA Reg. No. 80697-3)  
Revision to Container Handling Instructions per PRN 2007-4 – Addition of Refillable Container Language

Dear Mr. Kish,

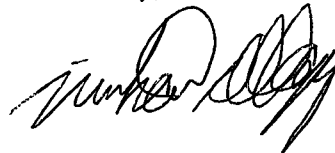
On behalf of Zhejiang Tide CropScience Co., Ltd. please find the enclosed label notification revising the container handling instructions for Tide Paclo 0.4% Liquid per PRN 2007-4. Container handling instructions for refillable containers is being added.

In support of this notification submission, we submit the following documents:

1. Completed Application for Registration (EPA Form 8570-1)
2. One (1) copy of the Tide Paclo 0.4% Liquid labeling with changes tracked
3. One (1) copy of the Tide Paclo 0.4% Liquid labeling with changes incorporated
4. Certification with Respect to Label Integrity
5. One (1) copy of the Tide Paclo 0.4% Liquid labeling on CD
6. Letter of Authorization

Please feel free to contact me by phone (253) 853-7369 or by email at Mike@PyxisRC.com if you have any questions or need any additional information.

Sincerely,



Michael Kellogg

Enclosures

cc: L. Gudino; Zhejiang Tide CropScience Co., Ltd.

# Tide Paclo 0.4% Liquid

Ornamental Plant Growth Regulator

## ACTIVE INGREDIENT:

Paclobutrazol: ((±)-(R\*,R\*)-β-[(4-chlorophenyl)methyl]-α-

(1,1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol):.....0.4%

**OTHER INGREDIENTS:** .....99.6%

**TOTAL:** .....100.0%

Tide Paclo 0.4% Liquid contains 0.12 g active ingredient per fluid ounce (4000 ppm).

## KEEP OUT OF REACH OF CHILDREN CAUTION

| FIRST AID                                                                                                                                                                                                    |                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If on skin or clothing:                                                                                                                                                                                      | <ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul> |
| HOT LINE NUMBER                                                                                                                                                                                              |                                                                                                                                                                                                                                   |
| Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may contact Chemtrec at 1-800-424-9300 for emergency medical treatment information. |                                                                                                                                                                                                                                   |

## PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Harmful if absorbed through skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

## ENVIRONMENTAL HAZARDS

For terrestrial uses: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

## NOTIFICATION

EPA Reg. No. 80697-3  
EPA Est. No.

MAY 29 2013

Manufactured for:  
Zhejiang Tide CropScience Co., Ltd.  
21 Hubble  
Irvine, CA 92618

Net Contents:  
Shake Well Before Each Use

### PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category C on an EPA chemical resistance category selection chart.

#### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride, or viton
- Shoes plus socks

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

#### USER SAFETY RECOMMENDATIONS

##### Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately, if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**IMPORTANT:** Read the entire directions for use and the Limited Warranty and Disclaimer before using this product.

#### DIRECTIONS FOR USE

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. Read all label directions carefully before use.

**Do not** use at residential sites for the ornamentals listed on this label.

#### 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), notification to workers, and restricted-entry interval. 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. 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
- Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride, or viton
- Shoes plus socks

## GENERAL INFORMATION

Tide Paclo 0.4% Liquid is a plant growth regulator for use at non-residential sites for ornamental plants grown in containers in nurseries, greenhouses, shadehouses and interiorscapes.

Tide Paclo 0.4% Liquid can be readily absorbed by plant roots and translocated to the active growing points. Applications of Tide Paclo 0.4% Liquid produce a long-lasting, uniform retardation with little effect on flower size. Applications of Tide Paclo 0.4% Liquid can be made without phytotoxic effects at any time in the growing cycle up to, at, or near the point that marketable size is reached.

## MIXING INSTRUCTIONS

Half fill the spray or drench tank with clean water. Accurately measure the required amount of Tide Paclo 0.4% Liquid as shown in Table 1. Add Tide Paclo 0.4% Liquid to the tank and fill the tank with the remaining required amount of water to achieve the desired concentration.

**Table 1 - Tide Paclo 0.4% Liquid Dilution Table**

| Tide Paclo 0.4% Liquid<br>(Desired ppm) | Fl. oz. per Gallon | ml/cc per Gallon |
|-----------------------------------------|--------------------|------------------|
| 1                                       | 0.032              | 1.0              |
| 2                                       | 0.064              | 1.9              |
| 3                                       | 0.096              | 2.8              |
| 4                                       | 0.13               | 3.8              |
| 5                                       | 0.16               | 4.7              |
| 10                                      | 0.32               | 9.5              |
| 20                                      | 0.64               | 19.0             |
| 25                                      | 0.8                | 24.0             |
| 30                                      | 1.0                | 28.0             |
| 40                                      | 1.3                | 38.0             |
| 50                                      | 1.6                | 47.0             |
| 100                                     | 3.2                | 95.0             |
| 200                                     | 6.4                | 190.0            |

## APPLICATION TECHNIQUES

Desired height control with Tide Paclo 0.4% Liquid can be obtained with three different types of applications: sprays, drenches or bulb soaks.

Under certain conditions, sequential spray applications may be desirable.

Frequent agitation of the Tide Paclo 0.4% Liquid solution and proper application techniques are critical in order to achieve desired results. Be sure of your calculations, volume measurements and sprayer calibration. When in doubt, recalculate.

### APPLICATION — SPRAY

In spray applications, Tide Paclo 0.4% Liquid penetrates into plant stems and is translocated to the terminal where it reduces internode elongation. When applying a spray application, it is important that:

- Adequate spray volume is used to thoroughly wet plant stems. The misting technique used for some other growth regulators, where only upper leaves are covered with a light spray, will not produce desired results with Tide Paclo 0.4% Liquid.
- Sprays are not applied to the point of excessive runoff into the potting media. The spray volume which drips down into the media may be desirable as it will be taken up by the roots and increase the

effectiveness of Tide Paclo 0.4% Liquid. However, too much runoff into the media may result in excessive height control.

- The spray technique provides thorough, consistent, uniform coverage of all plants. Failure to do so may result in non-uniform height control.

Tide Paclo 0.4% Liquid may be applied at any time of the day without danger of burning leaves or causing chlorosis.

Overhead irrigation or rain 30 minutes after spray applications does not reduce the effectiveness of Tide Paclo 0.4% Liquid.

Addition of wetting agents for spray applications is not necessary.

The recommended spray volume for small plants in small containers or plug trays which are closely spaced is 1-2 qts./100 sq. ft. of bench space.

For larger plants with a well-developed canopy, a spray volume of 3 qts./100 sq. ft. of bench space is recommended.

Using sequential applications may provide more uniform growth regulation and safety against over application. In general, sequential spray applications are to be applied using 50-100% of the lower recommended rate. Growers in cooler climates may have to use lower rates.

With some plant species, particularly chrysanthemums, hibiscus and azaleas, individual lateral shoots will outgrow the other laterals, causing non-uniform plant appearance. This results when individual laterals do not receive enough chemical when spray is applied. The use of sequential applications will reduce this problem.

## APPLICATION - DRENCH

Drench applications can be made indoors or outdoors. When applications are made it is important that:

- Applications should be made to moist media. This may be achieved by watering plants the day before application. Applications to dry media can result in poor distribution.
- Consideration is given to the growing media. Media containing bark of high organic matter may require the use of higher application rates.
- When applied as a drench through sub-irrigation in saucers, benches, or flooded floors, reduce rates by 50-75%. The optimum rates for continuous application in the irrigation water is about 10-33% of the rate needed for a one-time sub-irrigation application.
- Attention should be given to a more uniform distribution of drench solution if multiple plants are growing in the same pot. Uniform distribution is required to achieve uniform height control.

## DRENCH RATES AND VOLUME

Table 2 provides a guide to determine the appropriate drench volume needed for the specified pot sizes based on the capacity of a 6-inch "Azalea" type pot. Individual pots vary in style and depth, affecting capacity. Growers must determine the appropriate concentration and volume of drench to apply according to the pot volume, media and species/variety of plant considered.

**Table 2 – Drench Volume Guidelines**

| Pot Diameter<br>(inches) | Drench Volume<br>(fl. oz./pot) | mg of Paclobutrazol/pot |       |       |       |
|--------------------------|--------------------------------|-------------------------|-------|-------|-------|
|                          |                                | 1 ppm                   | 2 ppm | 3 ppm | 4 ppm |
| 4                        | 2                              | 0.063                   | 0.125 | 0.188 | 0.250 |
| 5                        | 3                              | 0.094                   | 0.188 | 0.282 | 0.375 |
| 6                        | 4                              | 0.125                   | 0.250 | 0.375 | 0.500 |
| 8                        | 10                             | 0.313                   | 0.625 | 0.938 | 1.25  |
| 10                       | 25                             | 0.783                   | 1.56  | 2.35  | 3.125 |
| 10" hanging basket       | 15                             | 0.470                   | 0.939 | 1.41  | 1.878 |
| 12                       | 40                             | 1.25                    | 2.50  | 3.75  | 5.00  |

## APPLICATION — PREPLANT BULB SOAKS

Soaking of bulbs in solution of Tide Paclo 0.4% Liquid is also a very effective way to attain height control. The rates used and length of soaking time will vary, depending on the species. See the section on BULB CROPS for specific recommendations.

## OTHER FACTORS AFFECTING PLANT RESPONSE TO TIDE PACLO 0.4% LIQUID

In addition to proper application technique, environmental and cultural factors can affect the plant's response to Tide Paclo 0.4% Liquid:

- Cultural practices can affect plant response to Tide Paclo 0.4% Liquid. Conditions causing vigorous growth require higher rates of Tide Paclo 0.4% Liquid to achieve the desired effect. Plants grown with close spacing or in smaller pots and using high water and fertility levels may require an increase in the amount of Tide Paclo 0.4% Liquid needed.
- Conditions causing vigorous growth require higher rates of Tide Paclo 0.4% Liquid to achieve the desired effect. Temperature can be the overriding factor in determining the amount of Tide Paclo 0.4% Liquid needed. Growers in warm climates need to use higher rates and/or more applications compared to growers in cooler climates. The amount of Tide Paclo 0.4% Liquid needed and the number of applications may also vary depending on the time of year with higher rates and/or applications needed during warm months.
- Different varieties or cultivars within a given plant species may require a higher or lower rate of Tide Paclo 0.4% Liquid. Growers should consult with plant and seed suppliers for vigor and other growth characteristics for newly released varieties. Taller, more vigorous varieties generally require more Tide Paclo 0.4% Liquid than do naturally shorter, less vigorous varieties.

## DETERMINING OPTIMUM RATES

Optimum Tide Paclo 0.4% Liquid rates will vary between growers and will depend on the desired final plant height, growing conditions, application techniques, species, and variety or cultivar. To determine the optimum rates for your situation before Tide Paclo 0.4% Liquid is applied to a large number of plants, conduct trials with small numbers of plants using the recommended rates. Growers may find they have to adjust application rates, techniques, timings and treatment periods to achieve the desired effect.



The rates recommended on this label are rate ranges and should be used only as guidelines. Always start trials at the lowest recommended rate and work up as required. DO NOT exceed the maximum recommended rate.

Run initial trials using the rates recommended in Table 3.

**Table 3. Recommended Trial Rates (PPM) By General Plant Type\***

| Plant Type                                     | Spray | Drench | Bulb Soak      |
|------------------------------------------------|-------|--------|----------------|
| Bedding Plants                                 | 30    | 1      | N/A            |
| Bedding Plant Plugs                            | 5     | NR     | N/A            |
| Flowering/Foliage Plants (annual or perennial) |       |        |                |
| - Herbaceous Species                           | 30    | 1      | N/A            |
| - Woody Species                                | 50    | 2      | N/A            |
| Woody Landscape Plants                         | 100   | 4      | N/A            |
| Bulb Crops                                     | 100   | 10     | 20 (@ 15 min.) |

NR = Use is not recommended

N/A = Use is not applicable

\*The recommended trial rates are based on information developed primarily in the Sunbelt Region. Growers in regions north of the Sunbelt should run initial tests using 0.5 x the recommended trial rates listed in Table 3.

#### USE AND RATE RECOMMENDATIONS BY CROP

Read and fully understand the section on "DETERMINING OPTIMUM RATES" before applying to a large number of plants.

##### A. AZALEAS (FLORIST)

**Spray applications** are effective in the rate range of 100 to 200 ppm.

**Drench applications** are effective in the rate range of 5 to 15 ppm.

Applications to control plant height and promote flower bud initiation should be made when new growth after final pruning is 1.5 – 2 inches long.

Applications to reduce bypass shoot development should be made after bud set when bypass shoots are barely visible, or about 5 to 7 weeks prior to cooling.

##### B. BEDDING PLANTS

**Spray applications** of Tide Paclo 0.4% Liquid will provide height control of most bedding plants at a wide rate range of 5 to 90 ppm. The rate ranges for some specific bedding plants are:

| Plant                  | Rate Range (ppm) | Plant               | Rate Range (ppm) |
|------------------------|------------------|---------------------|------------------|
| Ageratum               | 15-45            | Marigold (African)* | 30-60            |
| Alyssum                | 40-60            | Marigold (French)   | 15-30            |
| Celosia                | 15-45            | Pansy               | 5-15             |
| Coleus                 | 15-30            | Petunia             | 15-45            |
| Dahlia                 | 15-45            | Salvia              | 20-60            |
| Dianthus               | 20-60            | Snapdragon*         | 30-90            |
| Impatiens (Standard)   | 10-45            | Verbena             | 15-30            |
| Impatiens (New Guinea) | 2.5-15           | Zinnia              | 15-45            |

\*Apply at an early stage of plant growth with good stem coverage, especially for vigorous varieties.

- Do not use on fibrous begonias, as they are very sensitive to Tide Paclo 0.4% Liquid.
- Do not use on annual Vinca (periwinkle) as Tide Paclo 0.4% Liquid may cause spotting of foliage, especially at high temperatures.

- For species not listed, growers should determine optimum rates starting with a rate of 30 ppm in the Sunbelt Region and 15 ppm in the Northern Belt Region. Time of application should begin when new growth in height or width reaches 2 inches or when plants reach desired size to hold them at a marketable stage.
- Late application timing and/or excessive rates may slow the growth of plants when transplanted. To avoid this, apply multiple applications at 0.25 to 0.5 the optimum rate.
- High rates of Tide Paclo 0.4% Liquid may delay flowering, especially of impatiens and petunias.

**Media sprays** can be used to control the height of vigorous plugs, such as impatiens and salvia that show excessive elongation soon after transplant. Rate recommendations for applications made just prior to transplant are in the range of 20-60 ppm, applied in a volume of 2 qts./100 sq. ft.

**Drench applications** are effective on bedding plants but are recommended only for those plants in containers 6 inches or larger. User should determine optimum rates, starting at 1 ppm. Applications of Tide Paclo 0.4% Liquid are not recommended for containers less than 6 inches due to sensitivity and extremely low rates needed.

Specific bedding plants that have been shown to be responsive to Tide Paclo 0.4% Liquid are:

|          |                        |            |
|----------|------------------------|------------|
| Ageratum | Dianthus               | Petunia    |
| Alyssum  | Impatiens (Standard)   | Salvia     |
| Celosia  | Impatiens (New Guinea) | Snapdragon |
| Coleus   | Marigold               | Verbena    |
| Dahlia   | Pansy                  | Zinnia     |

### C. BEDDING PLANT PLUGS

**Spray applications** of Tide Paclo 0.4% Liquid can also be used to effectively control height of bedding plant plugs. The recommended rate range of 1 to 20 ppm is much lower than the rate range for older bedding plants.

| Plant                | Rate Range (ppm) | Plant             | Rate Range (ppm) |
|----------------------|------------------|-------------------|------------------|
| Ageratum             | 5-10             | Marigold (French) | 5-10             |
| Celosia              | 5-10             | Pansy             | 1-5              |
| Coleus               | 5-10             | Petunia           | 5-10             |
| Dahlia               | 5-10             | Salvia            | 5-10             |
| Dianthus             | 10-20            | Snapdragon        | 10-20            |
| Impatiens (Standard) | 0.5-10           | Verbena           | 5-10             |
| Marigold (African)   | 10-20            | Zinnia            | 5-10             |

For bedding plant plugs not specifically listed above, the user should determine optimum rates starting with a rate of 5 ppm. Timing of application should normally begin at the 1 to 2 true leaf stage.

**Media sprays** can be used to control the height of vigorous plugs, such as marigold and snapdragon, that show excessive elongation soon after emergence. Rate recommendations for applications made at the time of, or within one week after seeding, are in the range of 5-30 ppm, applied in a volume of 2 qts./100 sq. ft.

**Drench applications** are not recommended for bedding plant plugs due to the sensitivity and extremely low rates needed.

**For all uses of Tide Paclo 0.4% Liquid on plugs**, determining optimum rates should include an evaluation of the crop performance after transplanting to insure that treatment does not excessively reduce growth during the finished stage or in the landscape.

## D. BULB CROPS

Height control can be achieved on a variety of bulb crops by any of the three application types.

**Spray applications**, although moderately effective, are the least desirable method for controlling height. Sequential applications are recommended in order to achieve desired uniformity. Applications should begin when plants are 2 to 4 inches tall.

**Drench applications** are very effective in the rate range of 8 to 160 ppm. Optimum rates vary widely, depending on species. Timing of application will also vary, depending on species. For bulbs requiring a cold period, Tide Paclo 0.4% Liquid should be applied 1 to 5 days after thermal treatment. For most other bulb types, application should be made when newly emerged shoots are 1 to 2 inches tall.

**Preplant bulb soaks** are also very effective. Effective rates for most species are in the range of 5 to 25 ppm, with a soaking time of 5-15 minutes. In general, lower use rates will require longer soaking times.

The following table gives recommended rate ranges and length of soaking time for a variety of bulb species:

| Bulb Type   | Spray Rate (ppm) | Drench Rate (ppm) | Preplant Bulb Soak Rate (ppm) / Soak Time |
|-------------|------------------|-------------------|-------------------------------------------|
| Amaryllis   | ND               | 200               | 100 / 1 hr.                               |
| Caladium    | 100-200          | 2-16              | 60 / 30 min.                              |
| Calla Lily  | ND               | 5-15              | 20 / 15 min.                              |
| Dahlia      | ND               | 10-40             | >40 / 29 min.                             |
| Freesia     | ND               | 2-4               | 100-300 / 1 hr.                           |
| Hybrid Lily | 200-500          | 4-30              | 5-30 / 15 min.                            |
| Montbretia  | ND               | ND                | 20-30 / 15 min.                           |
| Tulip       | ND               | 5-40              | 2-5 / 1 hr.                               |

ND = Rates for this particular use have not been determined. For these applications the user should run trials using the rates recommended in Table 3.

Run initial trials using the rates outlined in the section on "DETERMINING OPTIMUM RATES".

## E. CHRYSANTHEMUMS (POT)

Tide Paclo 0.4% Liquid is effective in controlling the height of pot chrysanthemums when applied as either a spray or drench.

**Spray applications** are effective at rates of 50 to 200 ppm. Applications should begin when axillary shoots are 2 to 3 inches long. Tide Paclo 0.4% Liquid can be applied earlier to vigorous varieties if additional control is desired.

Sequential applications of lower rates generally provide more uniformly shaped plants than single-spray applications.

**Drench applications** are effective at recommended rates of 1 to 4 ppm.

Begin applications when axillary shoots are 2 to 3 inches long.

Earlier applications can be made to vigorous varieties. Seasonably late applications are sometimes required at the time of disbud to prevent late stretch. Unlike spray applications, the drench can be safely applied with little to no effect on flowering.

Uniform application is critical to uniform crop development.

## F. PERENNIALS

Perennial plants make up a wide variety of plant forms, many of which grow very tall. Others, which may have naturally low growing foliage, will develop flowers on tall spikes which, when in flower, may be difficult to ship or display. Using Tide Paclo 0.4% Liquid to control height of large, unruly perennial species has become an effective strategy to increase their attractiveness and marketability.

**Spray applications** of Tide Paclo 0.4% Liquid are effective on a wide variety of perennial plants in the rate range of 30-200 ppm.

**Drench applications** are effective in the 1-30 ppm range, and are useful to hold or tone plants when they are at or near a marketable size.

Recommended rates for some perennial plants are:

| Plant            | Spray Rate<br>(ppm) | Drench Rate<br>(ppm) |
|------------------|---------------------|----------------------|
| Alcea rosea      | 30-50               | 1-2                  |
| Asclepias        | 30-60               | ND                   |
| Chrysanthemum    | 50-200              | 1-4                  |
| Coreopsis        | 80-100              | 5-10                 |
| Delphinium       | 30-60               | ND                   |
| Digitalis        | 80-160              | 2-4                  |
| Eupatorium       | >240                | 8-10                 |
| Gaura            | >30                 | 30                   |
| Jacobinia (Pink) | 5-10                | 0.5-1                |
| Monarda          | 60-160              | >4                   |
| Salvia           | 40-60               | ND                   |
| Stokesia         | 40-80               | ND                   |
| Verbena          | 120-160             | >3                   |
| Veronica         | 20-40               | ND                   |

> = Greater than

ND = Rates for this particular use have not been determined. For these applications the user should run trials using the rates recommended in Table 3.

For species not specifically listed, trials should be conducted using the rates outlined in the section on "DETERMINING OPTIMUM RATES".

## G. GERANIUMS

Geraniums are particularly sensitive to Tide Paclo 0.4% Liquid. The user must determine optimum rates before applying to large numbers of plants.

**Spray applications** of Tide Paclo 0.4% Liquid at recommended rates of 10 to 30 ppm will effectively control growth of geraniums. Early applications may require lower rates to avoid overstretching. Timing of application for zonal geraniums is when growth is 1.5 to 2 inches long; for seed geraniums, 2 to 4 weeks after transplanting or when needed.

Tide Paclo 0.4% Liquid will reduce late stretch when applied as the flower stems begin to elongate.

**Drench applications**, although effective, should be made with caution due to the extreme sensitivity of geraniums to Tide Paclo 0.4% Liquid. Trials should be conducted to determine optimum rates.

## H. HIBISCUS

**Spray applications** at 30 to 150 ppm will effectively reduce shoot elongation. Application should be made when laterals are 1 to 4 inches long, depending on desired final plant size.

Single applications will control lateral growth for 3 to 6 weeks. Sequential applications may provide more uniform plant shape. Tide Paclo 0.4% Liquid can be applied 1 to 2 weeks prior to flowering to prevent late stretch.

**Drench applications** will also effectively reduce shoot elongation. Trials should be conducted using recommended rates outlined in the section on DETERMINING OPTIMUM RATES.

## I. POINSETTIAS

**Spray applications** of Tide Paclo 0.4% Liquid will effectively control height of poinsettias. Recommended rates are 10 to 30 ppm for most areas of the U.S. In southern Florida, higher rates of 15 to 45 ppm are recommended.

Single applications may be made using the higher recommended rates. However, sequential applications initially using lower rates will provide better safety against overly retarded plants. For subsequent applications use 50 to 100% of the initial rate, depending on plant vigor at the time of reapplication.

Applications to slower growing varieties in cool climates should begin when axillary shoots are 2 to 3 inches long. For vigorous growing varieties in warm climates, applications should begin when axillary shoots are 1.5 to 3 inches long.

Sequential applications may be applied 1 to 3 times, at 7 to 14-day intervals, depending on plant vigor/growth.

Seasonably late applications of Tide Paclo 0.4% Liquid will reduce plant height, but, like most PGR's may also reduce bract size. To prevent this, Tide Paclo 0.4% Liquid should not be applied after initiation of short days. As a guide, do not apply Tide Paclo 0.4% Liquid sprays after October 1 for areas outside of Florida, or after October 25 In Florida.

**Drench applications** are also an effective means of height control, and are most commonly used for late season application to plants which have initiated bracts or have reached or are near their desired marketing size.

Drench applications of Tide Paclo 0.4% Liquid should be applied when axillary shoots are 1.5 to 2 inches long. Late applications can safely be made after initiation of short days to prevent late stretch with minimal effect on bract size.

Use concentrations of 0.25 to 3 ppm (based on 4 fl. oz. / 6 inch pot), depending on variety, location and timing.

**NOTE:** Optimum Tide Paclo 0.4% Liquid rates and timings for both spray and drench applications to poinsettias will vary depending on the variety.

## J. WOODY PLANTS

Tide Paclo 0.4% Liquid is effective in controlling height and initiating flower bud formation on a wide variety of woody plants using both spray or drench applications. Effective rates vary with species. For all applications, growers should run initial tests as outlined in the "DETERMINING OPTIMUM RATES" section of this label.

Examples of woody plants on which Tide Paclo 0.4% Liquid can be applied are:

|               |              |           |              |
|---------------|--------------|-----------|--------------|
| Azalea        | Euonymus     | Juniper   | Photinia     |
| Bougainvillea | Hibiscus     | Kalmia    | Pine         |
| Camellia      | Hydrangea    | Ligustrum | Rhododendron |
| Cotoneaster   | Ilex (Holly) | Magnolia  | Rose         |

## K. FLOWERING & FOLIAGE PLANTS (Not specifically listed)

Tide Paclo 0.4% Liquid is effective as a spray or drench application in controlling height on a wide variety of other flowering and foliage plants not specifically listed on this label. It can be used as either a holding agent to stop growth (e.g., interiorscape) or a toning agent to slow growth (e.g. when pot crops or hanging baskets are at or near marketable size). Herbaceous species tend to require lower rates than woody species. Run initial trials using the rates as outlined in the "DETERMINING OPTIMUM RATES" section of this label.

### USE DIRECTIONS FOR CHEMIGATION

In addition to the above use rates and recommendations, the following precautions must be observed when using this product in any type of irrigation system:

Apply this product only through the following systems:

1. Micro-irrigation such as spaghetti-tube or drip emitters.
2. Hand-held calibrated equipment such as the hand-held wand with injector.
3. Sub-irrigation, such as ebb and flow and flooded floor systems, or through individual saucers.

Do not apply this product through any other type of irrigation system. Crop injury or lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. If you have any questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts. Do not connect an irrigation system, (including greenhouse systems), used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place. A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

### FLOOR (BASIN), FURROW AND BORDER CHEMIGATION

1. Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from back flow if water flow stops.
2. Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:
  - a. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
  - b. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
  - c. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
  - d. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
  - e. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
  - f. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

A pesticide supply tank is not recommended. Apply Tide Paclo 0.4% Liquid continuously for the duration of the water application.

### **CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEM:**

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days of the year.

Chemigation systems connected to public water systems must contain a functional, reduced pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water systems should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the flow outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

### **STORAGE AND DISPOSAL**

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

**PESTICIDE STORAGE:** Keep container closed when not in use.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

#### **CONTAINER HANDLING:**

**Nonrefillable Container (five gallons or less):** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Nonrefillable Container (greater than five gallons):** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two

more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Refillable Container:** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

#### LIMITED WARRANTY AND DISCLAIMER

Our recommendations for use of this product are based upon tests believed to be reliable. The use of this product being beyond control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such use or the results to be obtained if not used in accordance with printed directions and established safe practice. To the extent consistent with applicable law, buyer's exclusive remedy and manufacturer's or seller's exclusive liability for any and all claims, losses, damages or injuries resulting from the use or handling of this product, whether or not based in contract, negligence, strict liability in tort or otherwise shall be limited, at the manufacturer's option to replacement of, or the repayment of the purchase price for, the quantity of product with respect to which damages are claimed.

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