

1677-164

09/16/2005

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

SEP 16 2005

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

Joy Salverda/Brian Brosdahl  
Ecolab Inc.  
370 N. Sabasha Street  
St. Paul, MN 55102-1390

Subject: Tsunami 100  
EPA Registration No 16 77-164  
Submission Dated 3/17/05

The following amendment(s), submitted in connection with registration under section 3(c)(7)(A) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, to add a pathogen reduction claim for fruit and vegetable process water, and a control claim for spoilage/decay organisms on fruits and vegetables is acceptable.

A stamped copy of the labeling accepted with conditions is enclosed. Submit three (3) copies of your final printed labeling before distributing or selling the product bearing the revised labeling.

Submit and/or cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) when the Agency requires all registrants of similar products to submit such data.

If the above conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

Should you have any questions or comments concerning this letter, please contact Marshall Swindell at (703)308-6341.

Sincerely,



Marshall Swindell  
Product Manager 33  
Regulatory Management Branch #1  
Antimicrobials Division (7510C)

# Tsunami 100

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Water Additive for Pathogen\* Reduction in  
Fruit and Vegetable Processing Water and Controlling the Growth of Spoilage and  
Decay Causing Non-Public Health Organisms on Fruit and Vegetable Surfaces

## Active Ingredients:

Peroxyacetic acid..... 15.2%  
Hydrogen peroxide ..... 11.2%

Inert Ingredients: ..... 73.6%  
Total: ..... 100.0%

ACCEPTED  
with COMMENTS  
EPA Letter Dated:

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**KEEP OUT OF REACH OF CHILDREN  
DANGER**

Under the Federal Insecticide,  
Fungicide and Rodenticide Act as  
amended, for the pesticide,  
registered under EPA Reg. No.

1677-164

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CORROSIVE:** Causes severe eye damage and skin burns. Harmful or fatal if swallowed. Do not get in eyes, on skin, or on clothing. Wear chemical goggles, rubber gloves, and protective clothing if handling concentrate. Wash thoroughly with soap and water after handling. Remove any contaminated clothing and wash before re-use.

### FIRST AID

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 -20 minutes. Call a poison control center or doctor for treatment advice.

**IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**IF SWALLOWED:** Call a poison control center or doctor immediately for treatment advice. Have a person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

### FOR EMERGENCY MEDICAL INFORMATION CALL TOLL-FREE: 1-800-328-0026

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage.

### PHYSICAL AND CHEMICAL HAZARDS:

Strong oxidizing agent. Corrosive. Do not use in concentrated form. Mix only with water according to label instructions. Never bring concentrate in contact with other sanitizers, cleaners or organic substances.

**ENVIRONMENTAL HAZARDS:** This product is toxic to birds, fish, and aquatic invertebrates. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

Used as directed, *Tsunami 100* reduces 99.9% of the pathogens *Escherichia coli* O157:H7\*, *Listeria monocytogenes*\* and *Salmonella* spp.\* in fruit and vegetable processing waters. *Tsunami 100* also provides control of spoilage and decay causing non-public health organisms present in processing waters and on the surface of post-harvest, fresh-cut and processed fruits and vegetables.

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**DIRECTIONS FOR USE**

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

**FOR PATHOGEN\* REDUCTION AND CONTROL IN FRUIT AND VEGETABLE PROCESSING**

**WATERS:**

**A. Batch systems with no makeup water added:**

1. Ensure that water is mixing in the processing vessel.
2. Add *Tsunami 100* at a rate from 2.5-6.7 fluid ounces per 100 gallons of process water. This will produce about 215-575 ppm total product and about 30-80 ppm peroxyacetic acid. At this use dilution, *Tsunami 100* will provide a 99.9% reduction against the pathogens *Escherichia coli* O157:H7\*, *Listeria monocytogenes*\* and *Salmonella* spp.\*.
3. Measure the residual peroxyacetic acid concentration in the water using a Test Kit (consult Ecolab Representative) and adjust dose as needed. Allow a 1.5 minute mixing time.

**B. Continuous systems with makeup water continuously added:**

**Initial dose:**

1. Ensure that water is mixing in the processing vessel and/or piping.
2. Add *Tsunami 100* at a rate from 2.5-6.7 fluid ounces per 100 gallons of process water. This will produce about 215-575 ppm total product and about 30-80 ppm peroxyacetic acid. At this use dilution, *Tsunami 100* will provide a 99.9% reduction against the pathogens *Escherichia coli* O157:H7\*, *Listeria monocytogenes*\* and *Salmonella* spp.\*.
3. Measure the residual peroxyacetic acid concentration in the water using a Test Kit (consult Ecolab Representative) and adjust dose as needed. Allow a 1.5 minute mixing time.

**Continuous Dosing:**

Meter *Tsunami 100* at a rate from 2.5-6.7 fluid ounces per 100 gallons of fresh makeup water added to the system. This will produce about 215-575 ppm total product and about 30-80 ppm peroxyacetic acid. Measure the residual peroxyacetic acid concentration in the water using a Test Kit (consult Ecolab Representative) and adjust dose as needed. Allow a 1.5 minute mixing time.

**FOR TREATMENT OF FRUIT AND VEGETABLE SURFACES AND PROCESS WATERS:**

Mix *Tsunami 100* with water either batchwise or continuously to produce about 215-575 ppm total product and about 30-80 ppm peroxyacetic acid in use solution. This can be accomplished by initially adding *Tsunami 100* at a rate from 2.5-6.7 fluid ounces per 100 gallons of process water. The fruits and vegetables can be sprayed or submerged in the resulting solution for a minimum contact time of 45 seconds, followed by adequate draining. At this use dilution, *Tsunami 100* will control the growth of spoilage and decay causing non-public health organisms in process waters and on the surface of fruits and vegetables. This product is not intended for control of any public health organisms on fruit and vegetable surfaces.

**FOR TREATMENT OF SEEDS NOT INTENDED FOR HUMAN OR ANIMAL CONSUMPTION:**

Apply to seeds as directed to control seedborne microorganisms that cause plant disease or spoilage and decay of developing seedlings. Only treat seeds of the crops listed on this label. Mix *Tsunami 100* with clean water either batchwise or continuously to no more than 11,500 ppm total product (1750 ppm residual peroxyacetic acid) in use solution. This can be accomplished by adding 20 fluid ounces *Tsunami 100* per 16.4 gallons of water. The volume of treatment solution should be at least two times greater than the volume of seeds to be treated. The seeds should be submerged in the treatment solution and agitated for 30 minutes. Following treatment, remove seeds from treatment solution and dry.

**ACCEPTED  
with COMMENTS  
EPA Letter Dated:**

**SEP 16 2005**

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registered under EPA Reg. No.**

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Tsunami 100 can be used on the following types of fresh, post harvest and further processed fruits and vegetables:

Vegetables

- ◆ Root and tuber vegetables: Carrot, potato, radish, rutabaga, sweet potato, yam, sugar beet
- ◆ Leaves of root and tuber vegetables: Turnip greens and sugar beet
- ◆ Bulb vegetables: Onion (dry bulb and green), leek, garlic, shallot
- ◆ Leafy vegetables: Lettuce (head and leaf), celery, fennel, endive, escarole, parsley, radicchio, rhubarb, spinach
- ◆ Brassica leafy vegetables: Broccoli, Brussel sprouts, cabbage, cauliflower, mustard greens, mustard spinach
- ◆ Legumes [succulent or dried], bean (green, kidney, lima, mung, navy, pinto, snap, wax), pea (chickpea, lentil, dwarf, garden, English, field, edible pea pod), alfalfa, and soybean
- ◆ Fruiting vegetables: Pepper (bell, pimento, hot, sweet), tomato, tomatillo, eggplant
- ◆ Cucurbits: Cucumber, melon (cantaloupe, crenshaw melon, honeydew, honey ball melon, mango melon, muskmelon, pineapple melon, watermelon), summer squash, pumpkins, winter squash

Fruits

- ◆ Citrus fruits: Sweet and sour orange, lemon, lime, tangelo, tangerine, mandarin, citrus citron, kumquats, grapefruit
- ◆ Pome fruits: Apples and pears
- ◆ Stone fruits: Sour and sweet cherry, peach, nectarine, plum, prune
- ◆ Small Fruits and berries: Blackberries, blueberries, red and black raspberries

Sprouts and seeds of: vegetables and fruits that are listed on this label including, root & tuber vegetables, bulb vegetables, leafy vegetables, Brassica leafy vegetables, legumes, fruiting vegetables, cucurbits, citrus fruits, pome fruits, stone fruits, small fruits and berries, mustard

Tree nuts: Almond, Brazil, filbert, cashew, pecan, walnut (black & English), macadamia, chestnut

Cereal grains: Corn, barley, oats, rice, wheat, triticale, wild rice, sweet corn

Herbs and Spices: Basil, chives, coriander, dill, lemongrass marjoram, sage, savory, tarragon, thyme

Miscellaneous: Asparagus, avocado, artichoke, banana, cranberry, fig, grape, kiwifruit, mango, mushroom, okra, peanut, persimmon, pineapple, raisins, strawberry, water chestnut, watercress

**STORAGE & DISPOSAL:**

**DO NOT CONTAMINATE WATER, FOOD OR FEED BY STORAGE OR DISPOSAL**

**PESTICIDE STORAGE:** Product should be kept cool and in a vented container to avoid any explosion hazard.

**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:**

[4 gallon or 50 gallon] Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

[300 gallon tote] Verify that the tote is empty. Do not rinse or clean. Seal tote and contact Ecolab for return.

FOR COMMERCIAL OR INSTITUTIONAL USE ONLY  
STRONG OXIDIZING AGENT

EPA Reg. No. 1677-164

EPA Est.: 1677-MN-1 (P), 60156-IL-1 (SI), 1677-CA-2 (R), 1677-TX-1 (Q), 1677-OH-1 (H), 1677-IL-2 (J), 1677-PR-1 (B), 1677-CA-1 (S), 1677-GA-1 (M), 1677-WV-1 (V)

Superscript refers to first letter of date code

Manufactured by:  
Ecolab Inc., Food & Beverage Division  
370 N. Wabasha Street  
St. Paul, MN 55102

Tsunami 100 Label

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Net Contents:
4 U.S. Gallons (15.1 liters)
50 U.S. Gallons (189 liters)
300 U.S. Gals. (1134 liters)

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