

Royal MH-30[®] Xtra brand



Department of Agriculture
STATE OF HAWAII

LICENSED

PERIOD **2012-2014** LIC. NO.

Net

Contents:



Department of Agriculture
STATE OF HAWAII

LICENSED

PERIOD **2009-2011** LIC. NO.



Department of Agriculture
STATE OF HAWAII

LICENSED

PERIOD **2015-2017** LIC. NO.

9433.54

Growth Regulator - with Sorbatran[®]

Controls Tobacco Sucker Growth

Growth Regulator For Potatoes and Onions

Active Ingredient: (% by weight)

maleic hydrazide, potassium salt (CAS No. 28382-15-2)

(1,2-dihydro-3,6-pyridazinedione, potassium salt)..... 30.3%*

Inert Ingredients:..... 69.7%

Total:..... 100.0%

*Contains 2.25 pounds of maleic hydrazide per gallon.

*Contains 270 grams of maleic hydrazide per liter.

KEEP OUT OF REACH OF CHILDREN CAUTION

FIRST AID

IF ON SKIN OR ON CLOTHING

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15 to 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 to 20 minutes.
- Remove contact lens, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

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

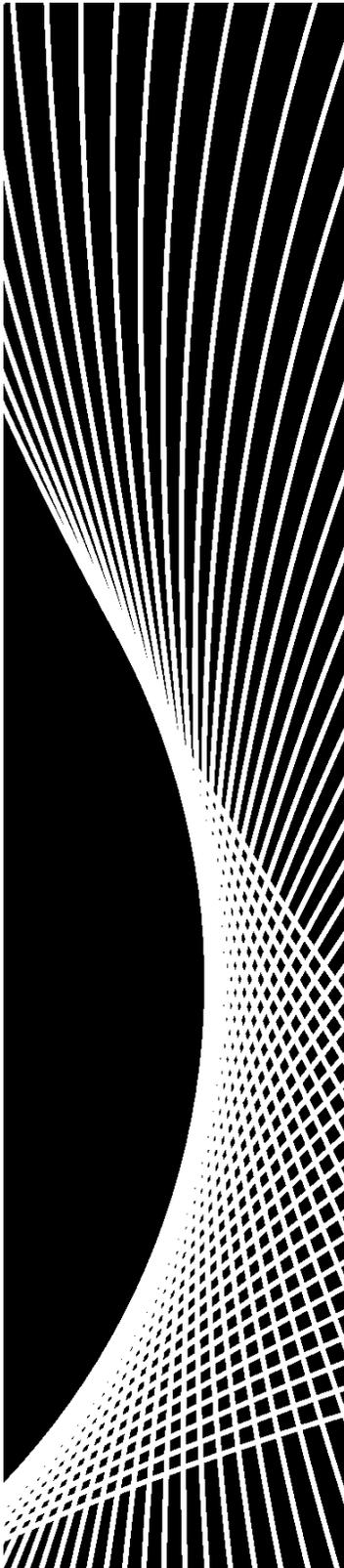
EMERGENCY PHONE 800-292-5898
SAFETY DATA AND INFORMATION 866-430-2775
TRANSPORTATION EMERGENCY (CHEMTREC) 800-424-9300

EPA REG. NO. 400-452
 EPA EST. NO.
 011/052108

Manufactured for:
 Chemtura Corporation
 199 Benson Road
 Middlebury, CT 06749



www.chemtura.com



**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION**

Causes moderate eye injury. Harmful if absorbed through skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

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

Applicators and Other Handlers Must Wear: long-sleeved shirt and long pants; chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride; shoes plus socks.

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.

When handlers use closed systems, enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

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.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water by disposal of equipment washwaters.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all label directions carefully before use.

Do not apply this product through any type of irrigation system.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. 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) 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 made of any waterproof material, shoes plus socks.

DIRECTIONS FOR USE: TOBACCO

BENEFITS

To prevent sucker development on flue-cured, burley, dark, Maryland and cigar (Pennsylvania and Wisconsin) tobacco.

GENERAL INFORMATION

ROYAL MH-30® XTRA is a potassium salt formulation of maleic hydrazide used to prevent sucker development in tobacco. Because ROYAL MH-30 XTRA is absorbed and moves inside the tobacco plant, spraying the whole plant is not necessary. See APPLICATION NOTES for important additional information.

APPLICATION EQUIPMENT

Best results are obtained when ROYAL MH-30 XTRA is applied to the upper $\frac{1}{3}$ to $\frac{1}{2}$ of the plant. To obtain satisfactory control, it is very important to apply equal amounts of ROYAL MH-30 XTRA to each plant, at the correct time.

Flue-Cured Tobacco

Apply ROYAL MH-30 XTRA with powered spray equipment. Sprayers with 3 full cone nozzles per row, applying either a coarse spray (i.e., 20 to 30 psi) or a fine spray (40 to 50 psi), will give equivalent sucker control. **Do not use drop nozzles**, since such systems can deposit undesired spray on the underside of the leaves or on the lowest leaves, which are harvested first.

Burley, Maryland, Dark and Cigar (Pennsylvania and Wisconsin) Tobacco

Apply ROYAL MH-30 XTRA with motorized field sprayers (high-clearance or tractor-mounted) equipped with solid cone nozzles that deliver a coarse spray at 20 to 30 psi in a uniform spray pattern. For example, application may be made with a broadcast arrangement over the row on 20 to 24 inch boom spacings, or with a three solid cone nozzle arrangement directed over the row. With any sprayer setup, the application must provide good, uniform coverage of the crop.

ROYAL MH-30 XTRA may also be applied with hand-held equipment, provided that a uniform spray pattern is delivered.

RATE AND TIMING OF APPLICATION

Apply the higher rate of ROYAL MH-30 XTRA when plants are very vigorous. Always remove any suckers present at topping time.

Flue-Cured Tobacco

Apply 1.0 to 1.5 gallon of ROYAL MH-30 XTRA in 40 to 50 gallons of water per acre as a coarse or fine spray. Application should be made 5 to 7 days after the last contact treatment, or when the uppermost harvestable leaves are a minimum of 8 inches long.

Burley and Maryland Tobacco

Top and sucker the plants when 10 to 25% of the plants in the field have one open flower. Remove all existing suckers and apply ROYAL MH-30 XTRA within 24 hours at a rate of 1.0 to 1.5 gallon in 50 gallons of water per acre. Tip leaves to be harvested should be at least 8 inches long at time of topping, suckering and ROYAL MH-30 XTRA application.

Dark Tobacco

Apply 1.0 to 1.5 gallon of ROYAL MH-30 XTRA in 50 gallons of water per acre. Apply ROYAL MH-30 XTRA within 24 hours after topping. Topping should be done when 10 to 25% of the plants in the field have one open flower. Existing suckers should be removed at topping time.

Wisconsin Cigar Tobacco

Apply 1.0 to 1.5 gallon of ROYAL MH-30 XTRA in 50 gallons of water per acre. Apply ROYAL MH-30 XTRA within 24 hours after topping. Tobacco should be topped between the time when the first flowers open and not later than when 50% of the plants are in flower. Existing suckers should be removed at topping time.

Pennsylvania Cigar Tobacco

Apply 1.0 to 1.5 gallon of ROYAL MH-30 XTRA in 50 gallons of water per acre. Apply ROYAL MH-30 XTRA within 24 hours of topping. Topping should be done when 25 to 50% of the plants in the field have one open flower. Existing suckers should be removed at topping time.

APPLICATION NOTES: TOBACCO

1. Always follow dosage recommendations carefully and spray field uniformly. Too little ROYAL MH-30 XTRA may result in less than desired sucker control; too much may reduce quality of tips.
2. Use only one application of ROYAL MH-30 XTRA per year, unless rains occur within 6 hours after application. Should washoff occur within 6 hours, a single repeat application may be made to ensure effective sucker control.
3. To control tobacco suckers effectively, apply ROYAL MH-30 XTRA at the proper time. Spraying too early in the season may prevent normal development of top leaves; spraying too late will allow some sucker growth.
4. Compatibility studies with ROYAL MH-30 XTRA and foliage applied fungicides and insecticides have not been completed. Separate application is recommended.
5. Do not use on tobacco plants grown for seed production.
6. Do not spray tobacco in the middle of hot, dry days when leaves are severely wilted. For best results spray during the early morning, or all day on cloudy days, avoiding late afternoon or night applications.
7. Closely hand-suckered tobacco or tobacco treated with ROYAL MH-30 XTRA will not ripen as rapidly as poorly suckered tobacco. Also, under some conditions ROYAL MH-30 XTRA treated tips have a tendency to turn yellow prematurely. This is not harmful and does not mean that your tobacco is ripe. Therefore, do not harvest tobacco treated with ROYAL MH-30 XTRA by using time and color of the leaves as your only guide to ripeness. Use other characteristics indicative of ripeness such as:
 - a. Fading of color from midrib.
 - b. Change in apparent leaf texture.

8. If tobacco plants have been grown under drought conditions, absorption of ROYAL MH-30 XTRA may be slow, and results may not be as good as when plants have been grown under normal conditions.
9. Allow at least 7 days after application before harvest.
10. Even though ROYAL MH-30 XTRA is non-volatile, no drift should be permitted onto nearby crops.
11. SURFACE WATER ADVISORY: Under some conditions, maleic hydrazide may have a significant potential for runoff into surface water (primarily via dissolution in runoff water), for several days post-application. Conditions favoring runoff include poorly draining soils or wet soils with readily visible slopes, frequently flooded areas, areas where an intense or sustained rainfall is forecast to occur within 48 hours, areas overlying extremely shallow ground water, and areas overlying tile drainage systems that flow to surface water.

ALWAYS SHAKE OR STIR WELL BEFORE USE.

DIRECTIONS FOR USE: POTATOES

GENERAL INFORMATION

ROYAL MH-30 XTRA is a potassium salt formulation of maleic hydrazide used on potatoes for control of tuber sprouting in storage and other benefits. To allow translocation of chemical down to the tubers, ROYAL MH-30 XTRA should be applied after tubers are formed and while vines are still green and are free from insects, diseases or other disorders. See APPLICATION NOTES for additional important information.

FOR USE ON POTATOES EAST OF THE ROCKY MOUNTAINS

BENEFITS

May Improve Grade

ROYAL MH-30 XTRA may improve the grade of potatoes, especially Russet Burbank variety, if the application is made prior to any secondary tuber formation.

Sprout Control

ROYAL MH-30 XTRA will control sprouting of potatoes in storage. However, ROYAL MH-30 XTRA will not make a poor-keeping potato such as Norgold or Norchip store as well as a good-keeping variety.

Undersize Potatoes

ROYAL MH-30 XTRA will help reduce any additional "sets" of potatoes, thus decreasing the number of undersized potatoes in the field at harvest.

Reduces Shrinkage

ROYAL MH-30 XTRA applications can reduce shrinkage in storage up to 15 percent.

Reduction of Volunteer Potatoes

ROYAL MH-30 XTRA will reduce the number of volunteer potatoes the following spring because of its ability to control sprouting.

TIMING OF APPLICATION

Timing of application may occur as early as 2 to 3 weeks past full bloom when the primary and secondary inflorescences have lost most of their flowers and a few third order inflorescences and buds are present. This occurs when a few lower leaves show a yellow color. APPLICATION PRIOR TO THIS TIME MAY RESULT IN PHYTOTOXICITY AND REDUCED TUBER SIZE. The following tuber sizes may also be used as a guide, provided the above conditions have been met:

Russet Burbank and other Russet (elongated) types

The smallest tubers that will reach the harvestable size should be 1.5 to 2 inches in diameter and elongating at the time of spraying, except for Norgold, which must be at least 2 inches in diameter at the time of spraying.

Other varieties (round types)

The smallest tubers that will reach the harvestable size should be 1.5 inch in diameter at the time of spraying, except for Norchip, which must be at least 2 inches in diameter at the time of spraying.

RATE OF APPLICATION

Ground Application

Use 1 to 1.33 gallon of ROYAL MH-30 XTRA per acre in a minimum of 30 gallons of water per acre. Use the 1.33 gallon rate when vines are robust and in areas where the vines stay green and vigorous up through the time of crop desiccation. The higher rate should also be used on varieties that sprout readily in storage (such as Norgold) or when potatoes will be stored under extended high temperatures.

Aerial Application

Use 1 to 1.33 gallon of ROYAL MH-30 XTRA per acre in a sufficient quantity of water to gain complete and uniform coverage. Use the 1.33 gallon rate when vines are robust and in areas where the vines stay green and vigorous up through the time of crop desiccation. The higher rate should also be used on varieties that sprout readily in storage (such as Norgold) or when potatoes will be stored under extended high temperatures. Do not fly at heights of less than 8 to 12 feet. Maintaining this height will give more uniform coverage and aid in preventing excessive build up of chemical on the left side of the treated swath. These heights should be reduced if cross-wind velocities exceed 2 to 4 MPH.

FOR USE ON POTATOES WEST OF THE ROCKY MOUNTAINS

BENEFITS

May Improve Grade

ROYAL MH-30 XTRA may improve grade of potatoes if the application is made prior to any secondary tuber growth.

Sprout Control

ROYAL MH-30 XTRA will control sprouting of potatoes in storage. However, ROYAL MH-30 XTRA will not make a poor-keeping variety store as well as a good-keeping variety.

Reduces Shrinkage

ROYAL MH-30 XTRA applications can reduce shrinkage in storage up to 15 percent.

Reduction of Volunteer Potatoes

ROYAL MH-30 XTRA will reduce the number of volunteer potatoes the following spring because of its ability to control sprouting.

TIMING OF APPLICATION

ROYAL MH-30 XTRA should be applied when the smallest tubers that you want to harvest are 2 to 2.5 inches in diameter or about 2 to 2.5 ounces in weight. This usually occurs about 3 to 4 weeks after full bloom or 11 to 12 weeks after emergence on the Russet Burbank variety. The smallest tubers that are required to reach marketable size should be starting to elongate on Russet Burbank or similar varieties at the time of treatment. APPLICATION PRIOR TO THIS TIME MAY RESULT IN PHYTOTOXICITY AND REDUCED TUBER SIZE. If vines are to be desiccated, apply ROYAL MH-30 XTRA at least 2 weeks prior to vine desiccation for good sprout control and storage benefits. DO NOT APPLY TO POTATO PLANTS THAT ARE UNDER STRESS.

RATE OF APPLICATION

Ground Application

Use 1 to 1.33 gallon of ROYAL MH-30 XTRA per acre in a minimum of 30 gallons of water per acre. Use the 1.33 gallon rate when vines are robust and in areas where the vines stay green and vigorous up through the time of crop desiccation.

Aerial Application

Use 1 to 1.33 gallon of ROYAL MH-30 XTRA per acre in a minimum of 10 gallons of water per acre. Use the 1.33 gallon rate when vines are robust and in areas where the vines stay green and vigorous up through the time of crop desiccation. Do not fly at heights of less than 8 to 12 feet. Maintaining this height will give more uniform coverage and aid in preventing excessive build up of chemical on the left side of the treated swath. These heights should be reduced if cross-wind velocities exceed 2 to 4 MPH.

DIRECTIONS FOR USE: ONIONS

GENERAL INFORMATION

ROYAL MH-30 XTRA will control sprouting in storage of onions (dry bulb), shallots (dry bulb) and garlic. See APPLICATION NOTES for additional important information.

TIMING OF APPLICATION

ROYAL MH-30 XTRA should be applied when the bulbs are fully mature, have at least 5 to 8 green leaves, and necks soft enough for the tops to fall if they have not already done so. The spray is often applied when 50 percent of the tops have fallen but all tops are still green. This condition usually occurs about 10 to 14 days before harvest time. Green tops are essential for the absorption and effectiveness of ROYAL MH-30 XTRA.

NOTE: Avoid spraying edible onions too early. If spraying is done earlier than two weeks before maturity, spongy bulbs may result.

RATE OF APPLICATION

Ground Application

Use 7 pints of ROYAL MH-30 XTRA per acre in a minimum of 30 gallons of water per acre.

Aerial Application

Use 7 pints of ROYAL MH-30 XTRA per acre in a minimum of 10 gallons of water per acre. Do not fly at heights of less than 8 to 12 feet. Maintaining this height will give more uniform coverage and aid in preventing excessive build-up of chemical on the left side of the treated swath. These heights should be reduced if cross-wind velocities exceed 2 to 4 MPH.

ONION VARIETIES

Use of ROYAL MH-30 XTRA should be combined with selection of a good-keeping variety. Do not apply to onion varieties with poor-keeping quality. ROYAL MH-30 XTRA will not make a poor-keeping variety store as well as a good-keeping variety.

SPRAY ADJUVANTS FOR ONIONS

West of the Rocky Mountains: Use a commercial non-ionic surfactant similar to X-77® or R-11® at the rate of 1 quart per 100 gallons of spray solution in arid sections of the U.S. Such products may help provide better coverage and aid in translocation of ROYAL MH-30 XTRA. The commercial surfactant must be cleared for application to growing crops.

East of the Rocky Mountains: Use of surfactants is not normally recommended.

®X-77 is a registered trademark of Loveland Industries, Inc.

®R-11 is a registered trademark of Wilbur-Ellis Company.

APPLICATION NOTES: POTATOES AND ONIONS

1. Always follow dosage recommendations carefully and spray field uniformly. Uniform and complete coverage is essential for satisfactory results.
2. Uneven application may result in bud end cracking and/or "elephant hide" on potato tubers.
3. To obtain desired results, plants should not be stressed from either too little or excessive water before or after application.

4. Do not use on potato plants grown for seed production.
5. Use only one application of ROYAL MH-30 XTRA per year.
6. Spray potatoes or onions at least 24 hours before rain or applying overhead irrigation. Rain or overhead irrigation occurring within 24 hours after application may reduce effectiveness.
7. At least a 2-week interval should be allowed between a ROYAL MH- 30 XTRA application to potatoes and the use of a vine desiccant.
8. Although ROYAL MH-30XTRA is non-volatile, no drift should be permitted onto nearby crops. Particular care should be taken to prevent drift when aerial applications are being made.
9. SURFACE WATER ADVISORY: Under some conditions, maleic hydrazide may have a significant potential for runoff into surface water (primarily via dissolution in runoff water), for several days post-application. Conditions favoring runoff include poorly draining soils or wet soils with readily visible slopes, frequently flooded areas, areas where an intense or sustained rainfall is forecast to occur within 48 hours, areas overlying extremely shallow ground water, and areas overlying tile drainage systems that flow to surface water.
10. TEMPERATURE: ROYAL MH-30 XTRA should be applied at temperatures below 85°F or at temperatures below 80°F if the temperature is expected to exceed 85°F later that day. ROYAL MH-30 XTRA is water soluble and under high temperature and low humidity conditions will crystallize on the leaf surface and will not be readily absorbed into the plant.
11. SPRAY ADJUVANTS: For potatoes, do not add additional wetting agents or commercial spray adjuvants to ROYAL MH-30 XTRA spray solutions. For onions, see Directions for Use.
12. COMPATIBILITY: Although ROYAL MH-30 XTRA is compatible with most commonly used foliar insecticides and fungicides, separate application is recommended.
13. Occasional injury to the terminal growth of potato foliage has been observed following the application of ROYAL MH-30 XTRA. However, trials and usage indicate that this does not adversely affect the yield or the quality of the potato tubers at harvest, provided that the product has been applied according to label directions.

ALWAYS SHAKE OR STIR WELL BEFORE USE

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in original container only. After partial use, replace lid and close tightly. Store in a secure place that is temperate, dry and out of direct sunlight. Store ROYAL MH-30 XTRA at temperatures above 32°F; storage above 40°F is preferred. The active ingredient in ROYAL MH-30 XTRA will separate from the surfactant at temperatures above 134°F. If containers have been exposed to high temperatures, the contents can be remixed by lowering the temperature of the entire formulation below 134°F and applying agitation. ALWAYS SHAKE OR STIR WELL BEFORE USE.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. 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.

EQUIPMENT CLEANING: ROYAL MH-30 XTRA is not corrosive to spray equipment. Following applications, all spray equipment should be thoroughly rinsed with water. Do not contaminate water by disposal of equipment washwaters.

CONTAINER DISPOSAL

Nonrefillable Container

Plastic Containers: Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Then offer container for recycling, reconditioning, or puncture and dispose of in a sanitary landfill, by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Triple rinse as follows: For containers with capacities equal to or less than 5 gallons: Empty the remaining contents into application or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ 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.

For containers with capacities greater than 5 gallons or 50 lbs.: Empty remaining contents into application equipment or a mix tank. Fill the container ¼ 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.

Recycling: Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact the Ag Container Recycling Council (ACRC) at 1-877-952-2272 (toll free) or www.acrecycle.org.

Refillable Container

Mini-Bulk Containers: 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 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 procedure two more times.

IMPORTANT NOTICE—Seller warrants that this product conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with the directions and instructions specified on the label under normal conditions of use, **but neither this warranty nor any other warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of this product, contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to seller, and buyer assumes the risk of any such use.**

MH-30® is a Registered Trademark of Chemtura Corporation
 SORBATRAN® is a Registered Trademark of Chemtura Corporation for its proprietary spray adjuvant.

©Copyright 2008, Chemtura Corporation