

Niguel Shores  
Chemical Spraying Map

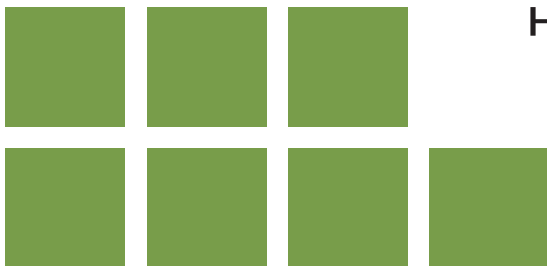
Week of: July 6 – July 10

Areas: 5, 6 and 7  
(Outlined in Red)

Application Time: From  
1pm-3pm Each Day

Products: Lifeline,  
Specticle, Atrimmec



**LIFELINE®****HERBICIDE****ACTIVE INGREDIENT:**

Glufosinate-ammonium ..... 24.5%\*

**OTHER INGREDIENTS:** ..... 75.5%**TOTAL:** ..... 100.0%

\*Equivalent to 2.34 pounds of active ingredient per U.S. gallon.

EPA Reg. No. 70506-310

**KEEP OUT OF REACH OF CHILDREN****CAUTION**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

(If you do not understand the label, find someone to explain it to you in detail.)

**FIRST AID****IF ON SKIN:**

- 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.
- Call a poison control center or doctor for treatment advice.

**IF SWALLOWED:**

- Call a poison control center or doctor for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to by a poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

Have the product container or label with you when calling a Poison Center or doctor or going for treatment. For emergency medical treatment, contact Rocky Mountain Poison and Drug Safety at 1-866-673-6671.

**NOTE TO PHYSICIAN:** If this product is ingested, endotracheal intubation and gastric lavage should be performed as soon as possible, followed by charcoal and sodium sulfate administration. You may also contact Rocky Mountain Poison and Drug Safety at 1-866-673-6671 for emergency medical treatment information.

**FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC at 1-800-424-9300.****NET CONTENTS:** \_\_\_\_\_ **GALLONS**

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION.** Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing.

### Personal Protective Equipment (PPE)

#### Applicators and other handlers must wear:

- All handlers must wear long-sleeved shirts, long pants, shoes, and socks.
- Applicators using ground boom equipment with open cabs to treat cotton must wear long-sleeved shirts, long pants, shoes, and socks plus chemical-resistant gloves.
- Mixer/loaders supporting ground boom applications to corn, canola, soybean, cotton, citrus fruit, pome fruit, stone fruit, and olives must wear long-sleeved shirts, long pants, shoes, and socks plus chemical-resistant gloves.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. 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.

### USER SAFETY RECOMMENDATIONS

#### Users should:

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Remove clothing/PPE 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.

### ENGINEERING CONTROLS STATEMENT

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.

### ENVIRONMENTAL HAZARDS

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

This pesticide is toxic to vascular plants and must be used strictly in accordance with the drift and run-off precautions on this label in order to minimize off-site exposures.

Under some conditions, this product may have a potential to run-off to surface water or adjacent land. Where possible, use methods which reduce soil erosion, including no till, limited till and contour plowing; these methods also reduce pesticide run-off. Use vegetation filter strips along rivers, creeks, streams, wetlands, etc. or on the downhill side of fields where run-off could occur to minimize water run-off.

### DIRECTIONS FOR USE

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

Do not use this product until you have read the entire label. 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.

**In the State of New York Only: Not For Use In Nassau and Suffolk Counties.**

### 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 intervals. 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 with the following exceptions:

- Canola, field corn, and soybean scouting - REI of 4 days.
- Do not move irrigation pipe within 7 days of an application for any crop.

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, including plants, soil, or water, is: coveralls worn over short-sleeved shirt and short pants; chemical-resistant gloves including barrier laminate, butyl rubber  $\geq 14$  mils, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, polyvinyl chloride (PVC)  $\geq 14$  mils, or Viton®  $\geq 14$  mils; chemical-resistant footwear plus socks; protective eyewear (goggles, face shield or safety glasses).

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applied when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. The application for trimming and edging, industrial, recreational and public areas, and farmsteads are not within the scope of the WPS. Keep unprotected persons out of treated areas until sprays have dried.

### IMPORTANT CROP SAFETY INFORMATION READ BEFORE USING THIS PRODUCT

#### Tree, Nut, Vine and Berry treatments

When applying LIFELINE herbicide to apples, berries, tree nuts and vines, avoid contact of solution, spray, drift or mist with green bark, stems or foliage, as injury may occur. Only trunks with calloused, mature brown bark may be sprayed unless protected from spray contact by nonporous wraps, grow tubes or waxed containers. Contact of LIFELINE herbicide with parts of trees, berries or vines other than mature brown bark can result in serious damage.

## PRODUCT INFORMATION

LIFELINE herbicide is a water-soluble non-selective, broad-spectrum herbicide used for control of annual and perennial grass and broadleaf weeds in a variety of crops. Uses include applications as foliar sprays in trees, vines and berry crops for control of emerged weeds; broadcast burndown applications prior to planting or crop emergence in labeled row crops; and as over-the-top applications in canola, corn, cotton, soybeans and sugar beets designated as glufosinate-resistant. LIFELINE herbicide may be used for weed control in non-glufosinate-resistant cotton when applied with a hooded sprayer in-crop.

LIFELINE herbicide may also be applied for potato vine desiccation.

### ROTATIONAL CROP RESTRICTIONS\*

Rotational crop planting intervals following application of LIFELINE herbicide are listed below. Failure to comply with these restrictions may result in illegal residues in rotated crops.

| Rotational Crop                                                                                                                                                    | Plant-back Interval<br>(Minimum Rotational Crop Planting<br>Interval from Last Application) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Canola,<br>Sweet Corn,<br>Corn,<br>Cotton,<br>Soybeans,<br>Sugar Beets                                                                                             | May be planted at any time                                                                  |
| Root and Tuber Vegetables,<br>Leafy Vegetables,<br>Brassica Leafy Vegetables,<br>Small Grains<br>(barley, buckwheat, oats, rye,<br>teosinte, triticale, and wheat) | 70 Days                                                                                     |
| All Other Crops                                                                                                                                                    | 180 Days                                                                                    |

\* See **Application Directions for Potato Vine Desiccation** for Rotational Crop Restrictions specifically after LIFELINE herbicide applications to potatoes. See **Application Directions for Sugar Beets** for Rotational Crop Restrictions specifically for this crop.

## RESISTANCE MANAGEMENT

### Herbicide Resistance Management

For resistance management, LIFELINE is a Group 10 herbicide. Any weed population may contain or develop plants naturally resistant to LIFELINE and other Group 14 herbicides. Weed species with acquired resistance to Group 10 may eventually dominate the weed population if Group 10 herbicides are used repeatedly in the same field. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance take one or more of the following steps:

- Rotate the use of LIFELINE or other Group 10 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds in a field. Whenever possible incorporate multiple weed control practices including mechanical cultivation, biological management practices, and crop rotation.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.

- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g. higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.

- Fields should be scouted before application to identify the weed species present and their growth stage to determine if the intended application will be effective. Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method including hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields and planting clean seed.

- If a weed pest population continues to progress after treatment with this product, discontinue use of this product and switch to another management strategy or herbicide with a different mode of action (MOA), if available. Treat weed escapes with an herbicide with a different MOA or use non-chemical methods to remove escapes. To the extent possible do not allow weed escapes to produce seeds, roots, or tubers.

Contact your local extension specialist, certified crop advisors, and/or manufacturer for additional herbicide resistance management and/or integrated weed management recommendations for specific crops and resistant weed biotypes. Report any incidence of non-performance of this product against a particular weed species to your retailer or UPL NA Inc. representative.

## WEEDS CONTROLLED

The following weeds controlled charts are outlined by crop or crop group.

### WEEDS CONTROLLED TABLE – TREE FRUIT, TREE NUTS, VINES, BERRIES, AND OLIVES

Rates in fluid ounces of formulated product per acre for the control of weeds at selected heights. In weed populations with mixed species, apply at a rate needed for the species that requires the highest rate. See **APPLICATION INSTRUCTIONS AND CROP USE DIRECTIONS** for specific use directions. Apply as a broadcast, banded, or spot treatment application depending on the situation to control weeds listed. Regrowth may occur due to the weed stage of growth at application, low use rate, or environmental conditions. Repeat applications of LIFELINE herbicide may be necessary to control plants generating from underground part or seed.

| Weed Height in Inches                                     | Use Rate/A                                |
|-----------------------------------------------------------|-------------------------------------------|
| Weeds < 3" in height                                      | 48 fl oz/A (0.88 lb ai/A)                 |
| Weeds < 6" in height                                      | 56 fl oz/A (1.02 lbs ai/A)                |
| Weeds > 6" in height<br>and/or grasses that have tillered | 56 - 82 fl oz/A<br>(1.02 - 1.50 lbs ai/A) |

| Broadleaf Weed Control   |                                    |                         |
|--------------------------|------------------------------------|-------------------------|
| Alkali sida              | Jimsonweed                         | Pineapple weed          |
| Ammannia, purple         | Knotweed                           | Puncturevine            |
| Arrowhead, California    | Kochia                             | Purslane, common        |
| Buckwheat, wild          | Lambsquarters, common <sup>1</sup> | Radish, wild            |
| Buffalobur               | Lettuce, miner's                   | Ragweed, common         |
| Burclover, California    | Lettuce, prickly                   | Ragweed, giant          |
| Carpetweed               | London rocket                      | Redmaids                |
| Chickweed, common        | Mallow, common                     | Shepherdspurse          |
| Chinese thornapple       | Malva (little mallow)              | Smartweed, Pennsylvania |
| Cocklebur, common        | Marestail                          | Sowthistle, annual      |
| Copperleaf, Virginia     | Mayweed                            | Spurge, prostrate       |
| Cudweed                  | Morningglory, entireleaf           | Starthistle, yellow     |
| Cutleaf evening primrose | Morningglory, ivyleaf              | Sunflower, common       |
| Dodder                   | Morningglory, pitted               | Sunflower, prairie      |
| Eclipta                  | Mullein, turkey                    | Sunflower, volunteer    |
| Fiddleneck               | Mustard, wild                      | Swinecress              |
| Filaree                  | Nettle                             | Thistle, Russian        |
| Filaree, redstem         | Nightshade, black                  | Turnip, wild            |
| Fleabane, annual         | Nightshade, eastern black          | Velvetleaf <sup>1</sup> |
| Goosefoot                | Nightshade, hairy                  | Vervain                 |
| Gromwell, field          | Pennycress                         | Vetch                   |
| Groundcherry, cutleaf    | Pigweed, redroot                   | Virginia copperleaf     |
| Groundsel, common        |                                    | Willowherb, panicle     |
| Henbit                   |                                    |                         |

<sup>1</sup> For optimal control, make applications between dawn and 2 hours before sunset.

| Grass Weed Control |                        |                               |
|--------------------|------------------------|-------------------------------|
| Barnyardgrass      | Foxtail, giant         | Rush, toad <sup>s</sup>       |
| Bluegrass, annual  | Foxtail, green         | Ryegrass, annual <sup>1</sup> |
| Brome, ripgut      | Foxtail, yellow        | Sandbur, field                |
| Bromegrass, downy  | Goosegrass             | Shattercane                   |
| Canarygrass        | Johnsongrass, seedling | Sprangletop                   |
| Chess, soft        | Junglerice             | Stinkgrass                    |
| Crabgrass, large   | Oat, wild              | Wheat, volunteer              |
| Crabgrass, smooth  | Panicum, fall          | Windgrass                     |
| Cupgrass, woolly   | Panicum, Texas         | Witchgrass                    |

<sup>s</sup> Suppression

<sup>1</sup> Apply to annual ryegrass prior to 3 inches in height.

| Biennial and Perennial Weed Control |                  |                   |
|-------------------------------------|------------------|-------------------|
| Aster, white heath                  | Dogbank (hemp)   | Plantain          |
| Bindweed, field                     | Fescue           | Poison ivy/oak    |
| Bindweed, hedge                     | Goldenrod, gray  | Quackgrass        |
| Bluegrass, Kentucky                 | Guineagrass      | Rocket, yellow    |
| Bromegrass, smooth                  | Horsetail        | Rose, wild        |
| Bulrush                             | Lovegrass        | <i>Rubus</i> spp. |
| Burdock                             | Mugwort          | Spurge, leafy     |
| Canada thistle                      | Mullein, common  | Thistle, bull     |
| Clover, Alsike                      | Mustard, tansy   | Thistle, musk     |
| Clover, red                         | Nutsedge, purple | Torpedograss      |
| Clover, white                       | Nutsedge, yellow | Vaseygrass        |
| Dallisgrass                         | Onion, wild      | Woodsorrel        |
| Dandelion                           | Orchardgrass     | Yarrow, common    |
| Dock, curly                         | Paragrass        |                   |

## APPLICATION AND MIXING PROCEDURES

**Uniform, thorough spray coverage is important to achieve consistent weed control.** The use of surfactants and the addition of AMS may improve weed control. Please note that addition of MSO may cause antagonism and reduce overall performance.

Refer to the **WEEDS CONTROLLED** tables or **APPLICATIONS INSTRUCTIONS AND CROP USE DIRECTIONS** for application rates.

**Ground Application:** Apply early when weeds are small.

Apply in a minimum of 15 gallons of water per acre. Increase to a maximum of 40 gallons of water per acre if dense weed canopy exists or as required by climatic conditions.

**Aerial Application:** Apply early when weeds are small.

Thorough coverage is necessary for best weed control. For optimal weed control, apply LIFELINE herbicide in a minimum of 10 gallons per acre.

See the **MANDATORY SPRAY DRIFT MITIGATION** section for additional information on proper application of LIFELINE herbicide.

**DO NOT use flood jet nozzles, controlled droplet application equipment, or air-assisted spray equipment.**

## COMPATIBILITY TESTING

If LIFELINE herbicide will be mixed with other pesticide products, test the compatibility of the intended tank mixture before mixing the products in the spray tank. The following procedure assumes a spray volume of 25 gallons per acre. For other spray volumes, adjust the amount of the water used accordingly. Check compatibility using this process:

1. In a clear 1-quart jar, place 1.0 pint of water from the source that will be used to prepare the spray solution.
2. For each pound of a dry tank mix partner to be applied per acre, add 1.5 teaspoons to the jar.
3. For each 16 fl oz of a liquid tank mix partner to be applied per acre, add 0.5 teaspoon to the jar.
4. For each 16 fl oz of LIFELINE herbicide to be applied per acre, add 0.5 teaspoon to the jar.
5. After adding all the ingredients, place a lid on the jar and tighten, then invert 10 times to mix.
6. Allow the mixture to stand for 15 minutes, then evaluate the solution for uniformity and stability. Look for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of incompatibility. If the tank mix partners are not compatible, **DO NOT** use the mixture in a spray tank.
7. Once compatibility testing is complete, dispose of any pesticide wastes in accordance with the **STORAGE AND DISPOSAL** section of this label.

## MIXING INSTRUCTIONS

**Tank Mix Instructions:** LIFELINE herbicide may be applied in tank mix combinations with labeled rates of other products. Use the tank mix partner in accordance with label limitations and restrictions. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

LIFELINE herbicide must be applied with properly calibrated and clean equipment. LIFELINE herbicide is formulated to mix readily in water. Prior to adding LIFELINE herbicide to the spray tank, ensure that the spray tank is thoroughly clean, particularly if a herbicide with the potential to injure crops was previously used (see **CLEANING INSTRUCTIONS**).

Mix LIFELINE herbicide with water to make a finished spray solution as follows:

1. Fill the spray tank half full with water.
2. Begin agitation.
3. If mixing with a flowable/wettable powder tank mix partner, prepare a slurry of the proper amount of the product in a small amount of water. Add the slurry to the spray tank.
4. Add the appropriate amount of ammonium sulfate (AMS) to the spray tank.
5. If mixing with a liquid tank mix partner, add the liquid mix partner next.
6. Complete filling the spray tank with water.
7. Add the proper amount of LIFELINE herbicide and continue agitation.
8. If foaming occurs, use a silicone-based antifoam agent.

Ensure that all spray system lines including pipes, booms, etc. have the correct concentration of spray solution by flushing out the spray system lines before starting the crop application.

If tank mix partners are added, maintain good agitation at all times until contents of the tank are sprayed. If the spray mixture is allowed to settle, thorough agitation is required to re-suspend the mixture before spraying is resumed. Keep bypass line on or near bottom of tank to minimize foaming. Screen size in nozzles or line strainers must be 50 mesh or larger.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

## CLEANING INSTRUCTIONS

**Before using LIFELINE herbicide**, thoroughly clean bulk storage tank, refillable tank, nurse tanks, spray tank, lines, and filter, particularly if a herbicide with the potential to injure crops was previously used. Ensure that equipment is thoroughly rinsed using a commercial tank cleaner.

**After using LIFELINE herbicide**, triple rinse the spray equipment and clean with a commercial tank cleaner before using for crops not labeled as glufosinate-resistant. Make sure any rinsate or foam is thoroughly removed from spray tank and boom. Rinsate may be disposed following the pesticide disposal directions on this label.

## MANDATORY SPRAY DRIFT MITIGATION

Ground Boom Applications:

- Spray at the appropriate boom height based on nozzle selection and nozzle spacing, but **DO NOT** exceed a boom height of 24 inches above target pest or crop canopy. Set boom to lowest effective height over the target pest or crop canopy based on equipment manufacturer's directions. Automated boom height controllers are recommended with large booms to better maintain optimum nozzle to canopy height. Excessive boom height will increase the potential for spray drift.
- For non-crop vegetation management ground applications, apply with the nozzle height no more than 4 feet above the ground or target vegetation, unless necessitated by the application equipment. Examples would include roadside, railroad, utility rights of way, forestry and other industrial vegetation management applications where safety or natural barriers obstruct application.
- Select nozzle and pressure that deliver medium to coarse spray droplets as indicated in nozzle manufacturer's catalogues and in accordance with ASABE Standard 572.1.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

(continued)

## MANDATORY SPRAY DRIFT MITIGATION (continued)

Aerial Applications:

- When applying aerially to crops, **DO NOT** release spray at a height greater than 10 feet above the crop canopy, unless a greater application height is necessary for pilot safety.
- Select nozzle and pressure that deliver medium to coarse spray droplets as indicated in nozzle manufacturer's catalogues and in accordance with ASABE Standard 572.1.
- When applying to crops via aerial application equipment, the spray boom must be mounted on the aircraft so as to minimize drift caused by wing tip or rotor blade vortices. The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.
- When applying to crops via aerial application equipment, applicators must use 1/2 swath displacement upwind at the downwind edge of the field.
- Nozzles must be oriented so the spray is directed toward the back of the aircraft.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

## SPRAY DRIFT ADVISORIES

**POLLINATOR ADVISORY STATEMENT:** This product contains an herbicide. Follow all label directions and precautions to minimize potential off-target exposure in order to prevent effects to non-target plants adjacent to the treated site which may serve as habitat or forage for pollinators.

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions.

## Importance of Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. **APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS! See WIND, TEMPERATURE AND HUMIDITY, and TEMPERATURE INVERSIONS sections of this label.**

## Controlling Droplet Size - Ground Boom

**Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

**Pressure** - Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. **WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.**

**Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles.

## Controlling Droplet Size - Aircraft

**Number of Nozzles** - Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.

**Nozzle Orientation** - Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations. **AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.**

**Nozzle Type** - Solid stream nozzles (including disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.

**Boom Length** - Longer booms increase drift potential. Therefore a shorter boom length is recommended.

**Application Height** - Application more than 10 feet above the canopy increases the potential for spray drift.

## BOOM HEIGHT

Setting the boom at the lowest referenced height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom should remain level with the crop and have minimal bounce.

## DRIFT REDUCTION TECHNOLOGY (DRT)

The EPA Drift Reduction Technology (DRT) Program was developed to encourage the manufacture, marketing, and use of spray technologies scientifically verified to significantly reduce pesticide drift. The use of DRTs should result in significantly less pesticide from spray applications drifting and being deposited in areas not targeted by those applications, compared to spray technologies that do not meet the minimum DRT standard. EPA-verified drift reduction technologies (DRTs) and their ratings will be added to the following webpage as they become available: <https://www.epa.gov/reducing-pesticide-drift/epa-verified-and-rated-drift-reduction-technologies>

## WIND

Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. AVOID APPLICATIONS DURING GUSTY OR WINDLESS CONDITIONS.

Note: Local terrain can influence wind patterns. Every applicator needs to be familiar with local wind patterns and how they affect spray drift.

## TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

## TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated

cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

## SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

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## APPLICATION INSTRUCTIONS AND CROP USE DIRECTIONS

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The following tables indicate use patterns, rates, minimum spray volumes, preharvest intervals and other precautions, restrictions and comments specific to each crop. Read and follow directions carefully.

LIFELINE herbicide is a foliar active herbicide with no soil residual activity. For best results, apply to emerged, young, actively growing weeds, targeting weeds less than 3" in height. Warm temperatures, high humidity and bright sunlight improves the performance of LIFELINE herbicide. Necrosis of leaves and young shoots occurs within 2 to 4 days after application under growing conditions.

Weeds that emerge after application will not be controlled. LIFELINE herbicide will have an effect on these weeds, however, speed of activity and control may be reduced.

Weed control may be reduced if application is made when heavy dew, fog, mist or rain are present or when weeds are under stress due to drought, cool temperatures, or extended periods of cloudiness.

When applying for control of lambsquarters and velvetleaf, make applications between dawn and 2 hours before sunset to avoid the possibility of reduced control.

The addition of ammonium sulfate at 1.5 - 3.0 lbs/acre may improve weed control. Rates are dependent on tank mix partners, environmental conditions, temperatures and potential for leaf burn.

Spray volume of 15 gallons of water per acre minimum. If dense canopy, large weeds or unfavorable growing conditions are present, increase water volume to 20 gallons of water per acre.

For optimal yield, early season weed removal is important.

**To maximize weed control, do not cultivate from 5 days before an application to 7 days after an application.**

LIFELINE herbicide is rainfast 4 hours after application; therefore rainfall within 4 hours may necessitate retreatment.

Consult your local Cooperative Extension Service for guidelines on optimum application timing for LIFELINE herbicide in your region.

| Crop                                                                                                                                                                                                                                                                                                                          | Use Pattern                                                                                                                                                                 | Rate/Acre                                                                                                                                                                                                                                                                                            | Directions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Restrictions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <b>POME FRUIT</b><br><b>(Crop Group 11-10)</b><br>Apples,<br>Crabapple,<br>Loquat,<br>Mayhaw,<br>Quince,<br>Pear,<br>Oriental Pear,<br>Azarole,<br>Medlar,<br>Tejocote,<br>cultivars, varieties<br>and/or hybrids of<br>these                                                                                                 | Broadcast<br>Banded<br>Directed Spray<br>Spot Treatments<br>See <b>APPLICATION METHODS</b> section for additional information on Banded, Directed Spray and Spot Treatments | <b>Weeds &lt; 3"</b><br><b>in height</b><br>48 fl oz/A<br>(0.88 lb ai/A)<br><b>Weeds &lt; 6"</b><br><b>in height</b><br>56 fl oz/A<br>(1.02 lbs ai/A)<br><b>Weeds &gt; 6"</b><br><b>in height and/or</b><br><b>grasses that</b><br><b>have tillered</b><br>56 - 82 fl oz/A<br>(1.02 - 1.50 lbs ai/A) | Apply to emerged, young, actively growing weeds.<br>Uniform, thorough spray coverage is necessary to achieve consistent weed control.<br>Avoid direct spray, drift or mist to desirable vegetation, green bark, stems or foliage, as injury may occur.<br>Only trunks with callused, mature brown bark may be sprayed unless protected from spray contact by nonporous wraps, grow tubes, or waxed containers.<br>When tank mixing with a residual herbicide no additional surfactant is needed. | <b>DO NOT</b> apply more than 82 fl oz (1.50 lbs ai)/A in a single application.<br><b>DO NOT</b> make more than 3 applications per year at the maximum rate of 82 fl oz (1.50 lbs ai)/A, and <b>DO NOT</b> apply closer than 14 days apart.<br><b>DO NOT</b> graze, harvest and/or feed treated orchard cover crops to livestock.<br><b>DO NOT</b> aerially apply.<br><b>DO NOT</b> apply through any type of irrigation system.<br><b>DO NOT</b> make spot spray applications to suckers as tree injury may occur.<br><b>DO NOT</b> apply within 14 days of harvest.<br><b>DO NOT</b> apply more than 246 fl oz (4.5 lbs ai)/A through any combination of use patterns per year. |
| <b>CITRUS</b><br><b>(Crop Group 10-10)</b><br>Calamondin,<br>Citrus citron,<br>Citrus hybrids<br>(chironja, tangelo,<br>tangor),<br>Grapefruit,<br>Kumquat,<br>Lemon,<br>Lime,<br>Mandarin<br>(tangerine),<br>Orange<br>(sour, sweet),<br>Pummelo,<br>Satsuma mandarin,<br>cultivars, varieties<br>and/or hybrids of<br>these | Broadcast<br>Banded<br>Directed Spray<br>Spot Treatments<br>See <b>APPLICATION METHODS</b> section for additional information on Banded, Directed Spray and Spot Treatments | <b>Weeds &lt; 3"</b><br><b>in height</b><br>48 fl oz/A<br>(0.88 lb ai/A)<br><b>Weeds &lt; 6"</b><br><b>in height</b><br>56 fl oz/A<br>(1.02 lbs ai/A)<br><b>Weeds &gt; 6"</b><br><b>in height and/or</b><br><b>grasses that</b><br><b>have tillered</b><br>56 - 82 fl oz/A<br>(1.02 - 1.50 lbs ai/A) | Apply to emerged, young, actively growing weeds.<br>Uniform, thorough spray coverage is necessary to achieve consistent weed control.<br>Avoid direct spray, drift or mist to desirable vegetation, green bark, stems or foliage, as injury may occur.<br>Only trunks with callused, mature brown bark may be sprayed unless protected from spray contact by nonporous wraps, grow tubes, or waxed containers.                                                                                   | <b>DO NOT</b> apply more than 82 fl oz (1.50 lbs ai)/A in a single application.<br><b>DO NOT</b> make more than 3 applications per year at the maximum rate of 82 fl oz (1.50 lbs ai)/A, and <b>DO NOT</b> apply closer than 14 days apart.<br><b>DO NOT</b> graze, harvest and/or feed treated orchard cover crops to livestock.<br><b>DO NOT</b> aerially apply.<br><b>DO NOT</b> apply through any type of irrigation system.<br><b>DO NOT</b> make spot spray applications to suckers as tree injury may occur.<br><b>DO NOT</b> apply within 14 days of harvest.<br><b>DO NOT</b> apply more than 246 fl oz (4.5 lbs ai)/A through any combination of use patterns per year. |
| <b>GRAPES</b><br>Raisin,<br>Table,<br>Wine                                                                                                                                                                                                                                                                                    | Broadcast<br>Banded<br>Directed Spray<br>Spot Treatments<br>See <b>APPLICATION METHODS</b> section for additional information on Banded, Directed Spray and Spot Treatments | <b>Weeds &lt; 3"</b><br><b>in height</b><br>48 fl oz/A<br>(0.88 lb ai/A)<br><b>Weeds &lt; 6"</b><br><b>in height</b><br>56 fl oz/A<br>(1.02 lbs ai/A)<br><b>Weeds &gt; 6"</b><br><b>in height and/or</b><br><b>grasses that</b><br><b>have tillered</b><br>56 - 82 fl oz/A<br>(1.02 - 1.50 lbs ai/A) | Apply to emerged, young, actively growing weeds.<br>Uniform, thorough spray coverage is necessary to achieve consistent weed control.<br>Avoid direct spray, drift or mist to desirable vegetation, green bark, stems, or foliage as injury may occur.<br>Only trunks with callused, mature brown bark may be sprayed unless protected from spray contact by nonporous wraps, grow tubes, or waxed containers.                                                                                   | <b>DO NOT</b> apply more than 82 fl oz (1.50 lbs ai)/A in a single application.<br><b>DO NOT</b> make more than 3 applications per year at the maximum rate of 82 fl oz (1.50 lbs ai)/A, and <b>DO NOT</b> apply closer than 14 days apart.<br><b>DO NOT</b> aerially apply.<br><b>DO NOT</b> apply through any type of irrigation system.<br><b>DO NOT</b> make spot spray applications to suckers as tree injury may occur.<br><b>DO NOT</b> apply within 14 days of harvest.<br><b>DO NOT</b> apply more than 246 fl oz (4.5 lbs ai)/A through any combination of use patterns per year.                                                                                       |

| Crop                                                                                                                                                                                                                                                                    | Use Pattern                                                                                                                                                                                 | Rate/Acre                                                                                                                                                                                                                                                              | Directions                                                                                                                                                                                                                                                                                                                                                                                                                              | Restrictions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>STONE FRUIT<br/>(Crop Group 12-12)</b><br>Apricot,<br>Cherry<br>(sweet, tart),<br>Nectarine,<br>Peach,<br>Plum<br>(chickasaw,<br>damson,<br>Japanese),<br>Plumcot,<br>Prune (fresh)                                                                                  | Broadcast<br>Banded<br>Directed Spray<br>Spot Treatments<br>See <b>APPLICATION<br/>METHODS</b> section for<br>additional information<br>on Banded, Directed<br>Spray and Spot<br>Treatments | <b>Weeds &lt; 3"<br/>in height</b><br>48 fl oz/A<br>(0.88 lb ai/A)<br><b>Weeds &lt; 6"<br/>in height</b><br>56 fl oz/A<br>(1.02 lbs ai/A)<br><b>Weeds &gt; 6"<br/>in height and/or<br/>grasses that<br/>have tillered</b><br>56 - 82 fl oz/A<br>(1.02 - 1.50 lbs ai/A) | Apply to emerged, young, actively growing<br>weeds.<br>Uniform, thorough spray coverage is<br>necessary to achieve consistent weed<br>control.<br>Avoid direct spray, drift or mist to desirable<br>vegetation, green bark, stems, or foliage as<br>injury may occur.<br>Only trunks with callused, mature brown<br>bark may be sprayed unless protected from<br>spray contact by nonporous wraps, grow<br>tubes, or waxed containers.  | <b>DO NOT</b> apply more than 82 fl oz<br>(1.50 lbs ai)/A in a single application.<br><b>DO NOT</b> make more than 2 applications<br>per year at the maximum rate of<br>82 fl oz (1.50 lbs ai)/A, and <b>DO NOT</b><br>apply closer than 28 days apart.<br><b>DO NOT</b> graze, harvest and/or feed<br>treated orchard cover crops to<br>livestock.<br><b>DO NOT</b> aerially apply.<br><b>DO NOT</b> apply through any type of<br>irrigation system.<br><b>DO NOT</b> make spot spray applications<br>to suckers as tree injury may occur.<br><b>DO NOT</b> apply within 14 days of harvest.<br><b>DO NOT</b> apply more than 164 fl oz<br>(3.0 lbs ai)/A through any combination<br>of use patterns per year. |
| <b>TREE NUTS<br/>(Crop Group 14)</b><br>Almond,<br>Beech nut,<br>Brazil nut,<br>Butternut,<br>Cashew,<br>Chestnut,<br>Chinquapin,<br>Filbert (hazelnut),<br>Hickory nut,<br>Macadamia<br>(bush nut),<br>Pecan,<br>Pistachio,<br>Walnut (black and<br>English (Persian)) | Broadcast<br>Banded<br>Directed Spray<br>Spot Treatments<br>See <b>APPLICATION<br/>METHODS</b> section for<br>additional information<br>on Banded, Directed<br>Spray and Spot<br>Treatments | <b>Weeds &lt; 3"<br/>in height</b><br>48 fl oz/A<br>(0.88 lb ai/A)<br><b>Weeds &lt; 6"<br/>in height</b><br>56 fl oz/A<br>(1.02 lbs ai/A)<br><b>Weeds &gt; 6"<br/>in height and/or<br/>grasses that<br/>have tillered</b><br>56 - 82 fl oz/A<br>(1.02 - 1.50 lbs ai/A) | Apply to emerged, young, actively growing<br>weeds.<br>Uniform, thorough spray coverage is<br>necessary to achieve consistent weed<br>control.<br>Avoid direct spray, drift or mist to desirable<br>vegetation, green bark, stems, or foliage,<br>as injury may occur.<br>Only trunks with callused, mature brown<br>bark may be sprayed unless protected from<br>spray contact by nonporous wraps, grow<br>tubes, or waxed containers. | <b>DO NOT</b> apply more than 82 fl oz<br>(1.50 lbs ai)/A in a single application.<br><b>DO NOT</b> make more than 3 applications<br>per year at the maximum rate of<br>82 fl oz (1.50 lbs ai)/A, and <b>DO NOT</b><br>apply closer than 14 days apart.<br><b>DO NOT</b> graze, harvest and/or feed<br>treated orchard cover crops to<br>livestock.<br><b>DO NOT</b> aerially apply.<br><b>DO NOT</b> apply through any type of<br>irrigation system.<br><b>DO NOT</b> make spot spray applications<br>to suckers as tree injury may occur.<br><b>DO NOT</b> apply within 14 days of harvest.<br><b>DO NOT</b> apply more than 246 fl oz<br>(4.5 lbs ai)/A through any combination<br>of use patterns per year. |
| <b>BERRIES<br/>(Bushberry<br/>Subgroup 13b)</b><br>Bushberries,<br>Blueberry,<br>Currant,<br>Elderberry,<br>Gooseberry,<br>Huckleberry,<br>Lingonberry,<br>Juneberry,<br>Salal                                                                                          | Broadcast<br>Banded<br>Directed Spray<br>Spot Treatments<br>See <b>APPLICATION<br/>METHODS</b> section for<br>additional information<br>on Banded, Directed<br>Spray and Spot<br>Treatments | <b>Weeds &lt; 3"<br/>in height</b><br>48 fl oz/A<br>(0.88 lb ai/A)<br><b>Weeds &lt; 6"<br/>in height</b><br>56 fl oz/A<br>(1.02 lbs ai/A)<br><b>Weeds &gt; 6"<br/>in height and/or<br/>grasses that<br/>have tillered</b><br>56 - 82 fl oz/A<br>(1.02 - 1.50 lbs ai/A) | Apply to emerged, young, actively growing<br>weeds.<br>Uniform, thorough spray coverage is<br>necessary to achieve consistent weed<br>control.<br>Avoid direct spray, drift or mist to desirable<br>vegetation, green bark, stems, or foliage,<br>as injury may occur.<br>Only trunks with callused, mature brown<br>bark may be sprayed unless protected from<br>spray contact by nonporous wraps, grow<br>tubes, or waxed containers. | <b>DO NOT</b> apply more than 82 fl oz<br>(1.50 lbs ai)/A in a single application.<br><b>DO NOT</b> make more than 2 applications<br>per year at the maximum rate of<br>82 fl oz (1.50 lbs ai)/A, and <b>DO NOT</b><br>apply closer than 14 days apart.<br><b>DO NOT</b> aerially apply.<br><b>DO NOT</b> apply through any type of<br>irrigation system.<br><b>DO NOT</b> make spot spray applications<br>to suckers as tree injury may occur.<br><b>DO NOT</b> apply within 14 days of harvest.<br><b>DO NOT</b> apply more than 164 fl oz<br>(3.0 lbs ai)/A through any combination<br>of use patterns per year.                                                                                             |

| Crop                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Use Pattern                                                                                                                                                                 | Rate/Acre                                                                                                                                                                                                                                          | Directions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Restrictions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| <b>OLIVES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Broadcast<br>Banded<br>Directed Spray<br>Spot Treatments<br>See <b>APPLICATION METHODS</b> section for additional information on Banded, Directed Spray and Spot Treatments | <b>Weeds &lt; 3" in height</b><br>48 fl oz/A<br>(0.88 lb ai/A)<br><b>Weeds &lt; 6" in height</b><br>56 fl oz/A<br>(1.02 lbs ai/A)<br><b>Weeds &gt; 6" in height and/or grasses that have tillered</b><br>56 - 82 fl oz/A<br>(1.02 - 1.50 lbs ai/A) | Apply to emerged, young, actively growing weeds.<br><br>Uniform, thorough spray coverage is necessary to achieve consistent weed control.<br><br>Avoid direct spray, drift or mist to desirable vegetation, green bark, stems, or foliage, as injury may occur.<br><br>Only trunks with callused, mature brown bark may be sprayed unless protected from spray contact by nonporous wraps, grow tubes, or waxed containers.                                                                                                                                                                                                                                                                                                                  | <b>DO NOT</b> apply more than 82 fl oz (1.50 lbs ai)/A in a single application.<br><b>DO NOT</b> make more than 3 applications per year at the maximum rate of 82 fl oz (1.50 lbs ai)/A, and <b>DO NOT</b> apply closer than 14 days apart.<br><b>DO NOT</b> graze, harvest and/or feed treated orchard cover crops to livestock.<br><b>DO NOT</b> aerially apply.<br><b>DO NOT</b> apply through any type of irrigation system.<br><b>DO NOT</b> make spot spray applications to suckers as tree injury may occur.<br><b>DO NOT</b> apply within 14 days of harvest.<br><b>DO NOT</b> apply more than 246 fl oz (4.50 lbs ai)/A through any combination of use patterns per year. |
| <b>POTATOES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Vine Desiccation                                                                                                                                                            | 21 fl oz/A<br>(0.38 lb ai/A)                                                                                                                                                                                                                       | Apply at the beginning of natural senescence of potato vines.<br><br>Potato varieties with heavy or dense vines may require an application of another desiccation product to complete vine desiccation.<br><br>Thorough coverage of the potato vines to be desiccated is essential. Use sufficient volume of water (20 to 100 gpa).<br><br>Vary the gallons of water per acre and spray pressure as indicated by the density of the potato vines.<br><br>Increase spray volume to at least 30 gallons of water per acre when potato canopy is dense or under cool and dry conditions.<br><br>Apply with the spray boom as low as possible to achieve thorough coverage of the potato vines for best control and to minimize drift potential. | <b>DO NOT</b> apply to potatoes grown for seed.<br><b>DO NOT</b> apply more than 21 fl oz (0.38 lb ai)/A in a single application.<br><b>DO NOT</b> split application or make more than 1 application per year.<br><b>DO NOT</b> harvest potatoes until 9 days or more after application.<br><b>DO NOT</b> apply more than 21 fl oz (0.38 lb ai)/A per year.                                                                                                                                                                                                                                                                                                                        |
| <p>- Canola, corn, cotton, soybean and sugar beets may be planted at any time after an application of LIFELINE herbicide as a potato vine desiccant.</p> <p>- Wheat, barley, buckwheat, millet, oats, rye sorghum or triticale may be planted 30 days or more after an application of LIFELINE herbicide as a potato vine desiccant.</p> <p>- All other crops may be planted 120 or more days after an application of LIFELINE herbicide as a potato vine desiccant.</p> |                                                                                                                                                                             |                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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## SUCKER CONTROL

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When applied to suckers that are young, green, and uncalloused, LIFELINE herbicide will reduce or eliminate sucker growth. For sucker control, make a split application approximately 4 weeks apart at 56 fl oz of product/A (1.02 lbs ai/A) in a broadcast application. Thorough coverage of all sucker foliage is necessary for optimum control. Suckers must not exceed 12 inches in length. **DO NOT** make spot applications to trunk as injury may occur.

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## TANK MIX PARTNER INSTRUCTIONS

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Because LIFELINE herbicide does not provide residual weed control or control of unexposed plant parts, certain herbicide tank mixes may aid in the performance of LIFELINE herbicide or be added to provide residual herbicide activity. No additional surfactant is needed with any tank mix partner. LIFELINE herbicide may be applied in tank mix combinations with labeled rates of other products that are labeled for the timing and method of application for the crop to be treated. Always use the tank mix partner in accordance with the label limitations and restrictions. **DO NOT** exceed label dosage rates. LIFELINE herbicide may not be mixed with any product containing a label prohibition against such mixing. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

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## APPLICATION METHODS

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### BANDED SPRAY APPLICATIONS – TREE FRUIT, TREE NUTS, VINES, BERRIES, AND OLIVES

Banded applications may be used using the following formula to calculate the amount of herbicide needed for orchard or vineyard strip sprays:

|                      |   |               |   |                  |
|----------------------|---|---------------|---|------------------|
| Band width in inches |   |               |   | Amount of        |
| Row width in inches  | X | Rate per acre | = | herbicide needed |
|                      |   | broadcast     |   | for treatment    |

### SPOT OR DIRECTED SPRAY APPLICATIONS – TREE FRUIT, TREE NUTS, VINES, BERRIES, AND OLIVES

For spot or directed spray applications mix LIFELINE herbicide at 1.7 fl oz of product (0.33 lb ai) per gallon of water. Apply to undesirable vegetation foliage until wet but prior to runoff. Ensure uniform and complete coverage. Thoroughly clean the sprayer following use. **DO NOT** make spot or directed spray applications to tree or vine trunk as injury may occur.

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## TANK MIXTURES

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See **COMPATIBILITY TESTING** section of this label if tank mixing with other pesticide products.

For all crops certain herbicide tank mixes may aid in the performance of LIFELINE herbicide or be added to provide residual herbicide activity. When tank mixing with a residual herbicide no additional surfactant is needed. LIFELINE herbicide may be applied in tank mix combinations with labeled rates of other products labeled for the timing and method of application for the crop to be treated. The tank mix partner must be used in accordance with the label limitations and restrictions. No label dosage rates may be exceeded. LIFELINE herbicide may not be mixed with any product containing a label prohibition against such mixing.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

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## FALLOW FIELDS OR POST HARVEST

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LIFELINE herbicide may be used as a substitute for tillage in fallow fields to control or suppress weeds listed in the **WEEDS CONTROLLED** table section of this label. Applications may be made in fallow fields, post-harvest, before planting or emergence of any crop listed on this label.

Apply LIFELINE herbicide at 22 - 29 fl oz/A (0.40 - 0.53 lb ai/A) to fallow fields to control specific weeds. LIFELINE herbicide must be applied with ammonium sulfate. Tank mixes with 2,4-D, glyphosate or atrazine and LIFELINE herbicide will enhance total weed control. Always follow the precautions and directions of use of the most restrictive label of products used in tank mix combinations. See the **APPLICATION AND MIXING PROCEDURES** section of this label for additional information on how to apply this product. See the **PRODUCT INFORMATION** section of this label for rotational crop restrictions.

### Restrictions

- **DO NOT** apply more than 29 fl oz/A (0.53 lb ai)/A in a single application.
- **DO NOT** make more than 3 applications per year at a minimum retreatment interval of 14 days.
- **DO NOT** apply more than 87 fl oz/A (1.59 lbs ai)/A per year.

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## FARMSTEAD AREAS

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When applied as listed, LIFELINE herbicide controls undesirable plant vegetation in non-crop areas listed under the header **WHERE TO APPLY**. Refer to **WEEDS CONTROLLED** tables for list of weeds controlled.

Apply as a spot or directed spray treatment application depending on the situation to control weeds. Regrowth may occur due to the weed stage of growth at application, low use rate, or environmental conditions. Repeat applications may be necessary to control plants generating from underground part or seed. Apply 48 - 82 fl oz (0.88 - 1.50 lbs ai)/A per application.

See the **APPLICATION AND MIXING PROCEDURES** section of this label for additional information on how to apply this product. See the **PRODUCT INFORMATION** section of this label for rotational crop restrictions.

### Restrictions

- **DO NOT** apply more than 82 fl oz (1.50 lbs ai)/A in a single application.
- **DO NOT** make more than 3 applications per year at a minimum retreatment interval of 14 days.
- **DO NOT** apply more than 246 fl oz (4.5 lbs ai)/A per year.

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## NON-CROP USES

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LIFELINE herbicide is a non-selective water-soluble herbicide for application as a foliar spray for the control of a broad spectrum of emerged annual and perennial grass and broadleaf weeds. Plants that have not yet emerged at the time of application will not be controlled. **THOROUGH SPRAY COVERAGE IS IMPORTANT**. Visual effects and control from application of LIFELINE herbicide occur within 2 to 4 days after application under good growing conditions.

This product is non-selective and will injure or kill all green vegetation contacted by the spray. Avoid all contact with foliage or green tissue of desirable vegetation. Avoid direct spray or drift onto green, thin, or uncalloused bark of desirable vegetation or plant injury may result. If desirable vegetation is contacted, rinse with sprayed portion with water immediately.

## WHERE TO APPLY

LIFELINE herbicide may be used on the following military, private, and public lands:

- |                                                                                     |                                                         |
|-------------------------------------------------------------------------------------|---------------------------------------------------------|
| • access roads                                                                      | • lumbar yards                                          |
| • airfields                                                                         | • mulched areas                                         |
| • airports                                                                          | • natural areas and brush control                       |
| • alleys                                                                            | • nurseries                                             |
| • along fences                                                                      | • parking areas                                         |
| • around commercial or industrial structures or outbuildings                        | • parks                                                 |
| • around farm and ranch structures and outbuildings                                 | • paths                                                 |
| • around ornamental gardens                                                         | • paved areas                                           |
| • around ornamental trees and shrubs (including Christmas trees)                    | • petroleum and other tank farms                        |
| • bare ground                                                                       | • pipeline, power, telephone, and utility rights of way |
| • barrier strips                                                                    | • power stations                                        |
| • beaches*                                                                          | • preplant to turf and ornamental plants                |
| • campgrounds                                                                       | • pumping installations                                 |
| • canals                                                                            | • railroad rights of way                                |
| • Conservation Reserve Program (CRP)*                                               | • ramps                                                 |
| • construction sites                                                                | • recreation areas                                      |
| • ditch banks                                                                       | • refineries                                            |
| • drive-in theaters                                                                 | • resorts                                               |
| • driveways                                                                         | • schools                                               |
| • dry ditches                                                                       | • sewage disposal areas                                 |
| • fencerows                                                                         | • shadehouses                                           |
| • firebreaks                                                                        | • shelter belts                                         |
| • fuel storage areas                                                                | • sidewalks                                             |
| • golf courses* (excluding greens, tees, aprons, fairways, and roughs)*             | • site preparation areas for conifer and hardwood       |
| • gravel yards                                                                      | • sports areas                                          |
| • greenhouses                                                                       | • storage areas                                         |
| • habitat restoration and management areas                                          | • substations                                           |
| • highways and roadsides (including aprons, medians, guardrails, and right of ways) | • tennis courts                                         |
| • industrial areas                                                                  | • trails                                                |
| • industrial plant sites                                                            | • uncropped farmstead areas                             |
| • landscapes                                                                        | • vacant lots                                           |
| • lanes                                                                             | • walkways                                              |
|                                                                                     | • wastelands                                            |
|                                                                                     | • wildlife food plots*                                  |
|                                                                                     | • wildlife habitat areas                                |
|                                                                                     | • wildlife openings                                     |

\*Not for use in California

## Conservation Reserve Program (CRP)

Not for use in California. LIFELINE herbicide may be used to suppress competitive growth and seed production of undesirable vegetation when rotating out of CRP acres. Apply 48 to 56 fl oz (0.88 to 1.0 lb ai) per acre of LIFELINE herbicide in early spring, before CRP grasses break dormancy, for selective applications with broadcast spray equipment. After desirable perennial grasses have reached dormancy, late fall applications may be made. Some stunting of CRP perennial grasses may occur if applications are made when plants are not dormant.

## Trimming and Edging

LIFELINE herbicide may be used for trimming and edging areas listed under the header **WHERE TO APPLY**. For control of weeds emerging from seed, the use of LIFELINE herbicide in a tank mix with pre-emergence herbicides is

advised. If spraying in areas adjacent to desirable plants, use a shield made of cardboard, plywood, or sheet metal while spraying to help prevent spray from contacting foliage of desirable plants.

## Public and Recreational Areas

When applied as a spot or directed spray application, this product controls annual and perennial weeds listed on this label, in areas listed under the header **WHERE TO APPLY**.

## Dormant Bermudagrass

LIFELINE herbicide may be used to control winter annual weeds in well-established ornamental dormant hybrid or common Bermudagrass. **Apply only when the turf is fully dormant and weather is cool, and prior to spring green-up or severe turfgrass injury or delayed green-up may occur.** For best results, apply LIFELINE herbicide at a rate of 56 - 82 fl oz (1.0 - 1.5 lbs ai)/A after most weeds have germinated and are in an early growth stage. Applications of LIFELINE herbicide may also be used to suppress or control target biennial or perennial weeds. Avoid high volume and spot applications where spray volume exceeds 80 gallons per acre or injury or delayed green-up may occur.

## Restrictions for Dormant Bermudagrass

- **DO NOT** apply more than 82 fl oz (1.5 lbs ai)/A in a single application.
- **DO NOT** apply more than 82 fl oz (1.5 lbs ai)/A per year for this use.
- **DO NOT** make more than one application per year.

## Ornamentals and Christmas Trees

When applied as advised by this label, this product may be used for the control of undesired vegetation in site preparation prior to planting, around and within shade and greenhouses, and as a directed spray around containers and field-grown established ornamentals and Christmas trees.

## Ornamental and Christmas Tree Restrictions

- **DO NOT** apply directly to or allow drift to contact desirable green tissue or green, thin, or uncalloused bark of desirable vegetation or injury may result.
- **DO NOT** apply LIFELINE herbicide as an over-the-top broadcast spray in ornamentals and shade or Christmas trees.

For pre-plant site preparation applications for control of annual and perennial weeds listed on this label, in ornamental and Christmas tree plantings, ornamental and Christmas trees may be planted into the treated area after the restricted entry interval (REI) of 12 hours has elapsed.

LIFELINE herbicide may be used between and around containers and in site preparation for new plantings, and to control in-row weeds in field-grown wood plants. Apply LIFELINE herbicide as a directed spray.

**For greenhouse and shadehouse applications where LIFELINE herbicide is used to control weeds, air circulation fans must be turned off during application. Apply LIFELINE herbicide as a directed spray, using large droplet and low-pressure type nozzles. Avoid drift and direct contact with desirable vegetation.**

## Greenhouse and Shadehouse Restrictions

- **DO NOT** use in greenhouses or shadehouses containing edible crops.

## Site Preparation for Conifer and Hardwood Production Areas

Prior to planting conifer and hardwood species, LIFELINE herbicide can be used as a site preparation treatment.

- **DO NOT** apply LIFELINE herbicide as an over-the-top broadcast spray to desirable conifer or hardwood plantings.
- Restricted Entry Interval (REI) for seedling conifer and hardwood treats to be planted into the treated area: 12 hours.

## WHEN TO APPLY

LIFELINE herbicide is a foliar-active material and works best when weeds are actively growing. Weed control may be reduced when applications are made to weeds under stress due to drought or cool temperatures.

Weeds under stress or in dense populations will require application of the highest rate indicated. Always apply at the labeled rate. Repeat applications or tank mixes of LIFELINE herbicide plus one or more appropriate residual herbicides will be needed to control weeds emerging from underground parts or seeds. When tank mixing with other herbicides, follow the label with the most restrictive directions for use and precautions. No label dosage rates may be exceeded.

Regrowth may occur due to the weed stage of growth at application, low use rate, or environmental conditions. Repeat treatments may be necessary to control weeds generating from underground parts or seeds.

## APPLICATION DIRECTIONS

Applications may be made as a broadcast, banded or spot treatment basis depending on the situation.

| Application Method             | Use Rate                                                                        | Directions                                                                                                                                                                                                                                                                                                                                                                                                                         | Restrictions                                                                                                                                                                                               |
|--------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Spot or Directed Applications  | 1 - 2 fl oz (0.02 - 0.04 lb ai) per gallon of water                             | Use rate depends on weed species being controlled. Spray undesirable vegetation foliage on a spray-to-wet basis. Ensure uniform and complete coverage. Use a coarse spray. Backpack, pump-up, and hydraulic sprayers may be used. Thoroughly clean the sprayer following use.                                                                                                                                                      | <b>DO NOT</b> apply beyond runoff.<br><b>DO NOT</b> spray during windy conditions.<br><b>DO NOT</b> exceed single maximum and yearly maximum broadcast use rates.                                          |
| Broadcast or Boom Applications | 48 - 72 fl oz (0.88 - 1.32 lbs ai) per acre in a minimum of 40 gallons of water | Use rate depends on weed species being controlled. Use 30-psi spray pressure minimum. For smaller weeds 3 inches or less, use the lower rate. For weeds 6 inches or less use the upper end of the rate range.                                                                                                                                                                                                                      | <b>DO NOT</b> apply more than 72 fl oz (1.32 lbs ai)/A in any single application.<br><b>DO NOT</b> apply more than once per year. <b>DO NOT</b> apply more than 72 fl oz (1.32 lbs ai)/A in a single year. |
| Aerial Applications            | 48 - 72 fl oz (0.88 - 1.32 lbs ai) per acre in a minimum of 5 gallons of water  | Use rate depends on weed species being controlled. For smaller weeds 3 inches or less, use the lower rate. For weeds 6 inches or less use the upper end of the rate range. See <b>MANDATORY SPRAY DRIFT MITIGATION</b> and <b>SPRAY DRIFT ADVISORIES</b> sections. Drift control additives may be used. If a drift control additive is used, observe and follow all directions and precautions as specified on the additive label. | <b>DO NOT</b> apply more than 72 fl oz (1.32 lbs ai)/A in any single application.<br><b>DO NOT</b> apply more than once per year. <b>DO NOT</b> apply more than 72 fl oz (1.32 lbs ai)/A in a single year. |

## WEEDS CONTROLLED

|                                                                                                                                                  |                                                                                                                                           | Directions and Restrictions                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Brush* Controlled or Suppressed</b>                                                                                                           |                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                           |
| Blackberry<br>Deer brush<br>Douglas fir<br>Gallberry<br>Hazel<br>Honeysuckle<br>Huckleberry<br>Maple<br>Multiflora rose<br>Oak<br>Poison ivy/oak | Pine<br>Roundleaf<br>Greenbrier<br>Salmonberry<br>Sweetgum<br>Sumac<br>Thimbleberry<br>Trumpet creeper<br>Vine maple<br>Western red cedar | LIFELINE herbicide will provide control or suppression of these listed perennial wood weed species when applied as recommended. Apply 32 to 96 fl oz (0.59 to 1.76 lbs ai) per acre. When conditions are not optimum for good spray penetration, use the higher recommended use rate.<br><b>DO NOT</b> exceed 1.9 gallons (4.5 lbs ai) per acre per year. |

\* Not for use in California.

|                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                 | Spot Application                                                   | Broadcast Application                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------|
| <b>Broadleaf Weeds</b>                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                 |                                                                    |                                                  |
| Annual sowthistle<br>Bindweed<br>Buffalobur<br>Burdock<br>Canada thistle<br>Chickweed<br>Clover<br>Common cocklebur<br>Curly dock<br>Dandelion<br>Dogbane (hemp)<br>Field gromwell<br>Filaree<br>Fleabane<br>Goldenrod<br>Horsetail<br>Jimsonweed<br>Kochia<br>Lambsquarters<br>Leafy spurge<br>London rocket<br>Malva (little mallow)<br>Marestail<br>Mugwort | Musk thistle<br>Nettle<br>Nightshade<br>Pennycress<br>Pigweed, redroot<br>Plantain<br>Prickly lettuce<br>Purslane<br>Ragweed<br>Russian thistle<br>Shepherdspurse<br>Smartweed<br>Tansy mustard<br>Velvetleaf<br>Vervain<br>Virginia copperleaf<br>White heath aster<br>Wild buckwheat<br>Wild mustard<br>Wild onion<br>Wild rose<br>Wild turnip<br>Woodsorrel<br>Yellow rocket | Apply<br>1 - 2 fl oz<br>(0.02 - 0.04 lb ai)/<br>gallon<br>of water | Apply<br>48 - 72 fl oz<br>(0.88 - 1.32 lbs ai)/A |
| <b>Grasses and Sedges</b>                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                 |                                                                    |                                                  |
| Annual bluegrass<br>Bahagrass<br>Barley<br>Barnyardgrass<br>Bermudagrass<br>Carpetgrass<br>Crabgrass<br>Cupgrass<br>Dallisgrass<br>Downy brome<br>Fall panicum<br>Fescue                                                                                                                                                                                       | Giant foxtail<br>Goosegrass<br>Green foxtail<br>Guineagrass<br>Johnsongrass<br>(rhizome)<br>Kentucky bluegrass<br>Lovegrass<br>Nutsedge<br>Paragrass<br>Quackgrass<br>Ryegrass                                                                                                                                                                                                  | Apply<br>1 - 2 fl oz<br>(0.02 - 0.04 lb ai)/<br>gallon<br>of water | Apply<br>48 - 72 fl oz<br>(0.88 - 1.32 lbs ai)/A |

(continued)

|                                       |                | Spot Application                                                      | Broadcast Application                               |
|---------------------------------------|----------------|-----------------------------------------------------------------------|-----------------------------------------------------|
| <b>Grasses and Sedges (continued)</b> |                |                                                                       |                                                     |
| Sandbur                               | Torpedograss   | Apply<br>1 - 2 fl oz<br>(0.02 -<br>0.04 lb ai)/<br>gallon<br>of water | Apply<br>48 - 72 fl oz<br>(0.88 -<br>1.32 lbs ai)/A |
| Shattercane                           | Vaseygrass     |                                                                       |                                                     |
| Smallflower                           | Wheat          |                                                                       |                                                     |
| Alexandergrass                        | Wild oat       |                                                                       |                                                     |
| (Signalgrass)                         | Windgrass      |                                                                       |                                                     |
| Smooth brome                          | Yellow foxtail |                                                                       |                                                     |
| Stinkgrass                            |                |                                                                       |                                                     |

#### Use Notes

1. Use higher rates within the specified rate range for weed sized listed when vegetation cover is dense or when weeds are growing under stressed conditions including drought or when average temperatures are below 50° F.
2. The addition of 8.5 to 17 pounds of ammonium sulfate (spray grade) per 100 gallons of water (1 to 2% by weight) or 2 to 4 pounds of ammonium sulfate per acre may improve the level of weed control.

### MIXING INSTRUCTIONS

LIFELINE herbicide must be mixed with water to make a finished spray solution. Fill the spray tank 1/2 to 3/4 full with water, start agitation, add the appropriate amount of LIFELINE herbicide then add remaining water to fill tank. Mix thoroughly.

#### Restrictions

- **DO NOT** apply this product through an irrigation system.
- **DO NOT** apply directly to or allow drift to contact desirable green tissue or green, thin, or uncalloused bark of desirable vegetation.
- **DO NOT** allow grazing of vegetation treated with LIFELINE herbicide.

#### Precautions

LIFELINE herbicide is rainfast in a minimum of one-half hour and an average of 4 hours after application depending upon weed species, environmental conditions, and herbicide application rate.

Plants may be safely planted into LIFELINE herbicide treated areas after spray has dried.

### TANK MIXING

LIFELINE herbicide is compatible in tank mixes with many other herbicides. When tank mixing LIFELINE herbicide with other herbicides, follow the label with the most restrictive directions for use and precautions. No label dosage rates may be exceeded. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

A compatibility test must be conducted with any potential tank mix partner. Using a clear glass quart jar, conduct the test as described below:

1. Fill the jar three-quarters full with water.
2. Add the appropriate amount of herbicide in the following order: (a) dry flowable, (b) wettable powder, (c) aqueous suspensions, (d) flowables, (e) liquids and (f) solutions and emulsifiable or liquid concentrates. Shake or gently stir jar after each addition to thoroughly mix.
3. After adding all ingredients, let the mixture stand for 15 minutes and then look for separation, large flakes, precipitates, gels, and heavy oily film on the jar or other signs of incompatibility.
4. If the compatibility test shows signs of incompatibility, do not tank mix the product tested with LIFELINE herbicide.

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Do not use or store near heat or open flame. Keep the container tightly closed and dry in a cool, well-ventilated place. Storage temperature must not exceed 125° F. If storage temperature for bulk LIFELINE herbicide is below 32° F, the material must not be pumped until its temperature exceeds 32° F. Protect against direct sunlight.

**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:

#### ***[Rigid, Non-refillable containers small enough to shake (i.e., with capacities equal to or less than 5 gallons)]***

Non-refillable container. Do not reuse or refill this container. Triple rinse container 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. Once container is rinsed, then offer for recycling if available or reconditioning if appropriate; 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.

#### ***[Rigid, Non-refillable containers (i.e., with capacities greater than 5 gallons)] triple rinse [or pressure rinse] as follows:***

Triple rinse: 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 back 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 and disposal. Repeat this procedure two more times. Then offer for recycling or reconditioning if available, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities. Do not cut or weld metal containers.

Pressure rinse: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

#### ***[All refillable container types (containers with capacities greater than 50 lbs)]***

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. This is a sealed returnable container to be used only for LIFELINE herbicide. When this container is empty, it must not be opened, cleaned, or discarded. Empty containers must be returned to the original purchase location.

#### ***[Bottom discharge Intermediate Bulk Container (IBC) (containers with capacities greater than 50 lbs)]***

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. Pressure rinsing the container before final disposal is the responsibility of the person disposing of the container. Empty the remaining contents from the Intermediate Bulk container (IBC) into application equipment or mix tank. Raise the bottom of the IBC by 1.5 inch on the side which is opposite of the bottom discharge valve to promote more complete product removal. Completely remove the top lid of the IBC. Use water pressurized to at least 40 PSI to rinse all interior portions. Continuously pump or drain rinsate into application equipment or rinsate collection system while pressure rinsing. Continue pressure rinsing for 2 minutes or until rinsate becomes clear. Replace the lid and close bottom valve. Contact your Ag retailer for container return, disposal, and recycling recommendations.

**SEED DISPOSAL:** To dispose of out-of-date or otherwise unmarketable seed from plants, which have been treated with LIFELINE herbicide, broadcast and lightly incorporate seed into field soils using disc or other suitable implement. Any resulting crop may be destroyed by chemical or mechanical means. Alternatively, seed may be destroyed by deep burial, incineration or landfill disposal.

**IMPORTANT INFORMATION  
READ BEFORE USING PRODUCT**

**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of UPL NA Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of UPL NA Inc. and Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold UPL NA Inc. and Seller harmless for any claims relating to such factors.

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ESL030920

U-70506-310(012522-9207)



# Safety Data Sheet

Preparation Date 29-Apr-2015

Revision date 22-Jan-2024

Revision Number: 13

## 1. Identification of the Substance/Preparation and of the Company/Undertaking

### Identification of the product

**Product Description** Lifeline Herbicide

### Other means of identification

**Internal SDS code** 12U-901

**Registration number(s)** 70506-310

### Recommended use of the chemical and restrictions on use

**Recommended use** Herbicide.

**Uses advised against** Activities contrary to label recommendation

### Details of the Supplier of the Safety Data Sheet

#### Supplier Address

UPL NA Inc.

PO Box 12219

Research Triangle Park, NC 27709-12219

### Emergency telephone number

**Company Phone Number** 1-800-438-6071

**Emergency telephone number** Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887  
Medical: Rocky Mountain Poison and Drug Safety (866) 673-6671 (24hrs)

## 2. Hazards Identification

### Classification

#### OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                                    |             |
|----------------------------------------------------|-------------|
| Acute toxicity - Inhalation (Dusts/Mists)          | Category 4  |
| Reproductive Toxicity                              | Category 1B |
| Specific target organ toxicity (repeated exposure) | Category 2  |

### Label elements

#### EMERGENCY OVERVIEW

**DANGER**

#### Hazard Statements

Harmful if inhaled

May damage fertility or the unborn child

May cause damage to organs through prolonged or repeated exposure



|                       |                              |                               |
|-----------------------|------------------------------|-------------------------------|
| <b>Appearance</b> Red | <b>Physical state</b> Liquid | <b>Odor</b> no data available |
|-----------------------|------------------------------|-------------------------------|

**Precautionary Statements - Prevention**

Do not handle until all safety precautions have been read and understood

Wear cold insulating gloves/face shield/eye protection

Use only outdoors or in a well-ventilated area

Do not breathe dust/fume/gas/mist/vapors/spray

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Call a POISON CENTER or doctor/physician

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards Not Otherwise Classified (HNOC)****OTHER INFORMATION****3. Composition/information on Ingredients**

| Chemical name        | CAS No      | Weight-% |
|----------------------|-------------|----------|
| Glufosinate ammonium | Proprietary | 20 - 30% |
| Propylene Glycol     | 57-55-6     | 10       |
| 2-Butoxyethanol      | 111-76-2    | 3.5      |

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

**4. First aid measures****FIRST AID MEASURES**

|                                   |                                                                                                                                                                                                                       |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye contact</b>                | Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. |
| <b>Skin contact</b>               | Wash off immediately with plenty of water for at least 15 minutes. Call a poison control center or doctor for treatment advice.                                                                                       |
| <b>Inhalation</b>                 | Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.       |
| <b>Ingestion</b>                  | Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Call a physician or poison control center immediately.                                                          |
| <b>Protection of First-aiders</b> | Use personal protective equipment.                                                                                                                                                                                    |

**Most Important Symptoms and Effects, Both Acute and Delayed**

|                                            |                    |
|--------------------------------------------|--------------------|
| <b>Most Important Symptoms and Effects</b> | no data available. |
|--------------------------------------------|--------------------|

**Indication of Any Immediate Medical Attention and Special Treatment Needed**

|                           |                        |
|---------------------------|------------------------|
| <b>Notes to physician</b> | Treat symptomatically. |
|---------------------------|------------------------|

## 5. Fire-fighting measures

### Suitable extinguishing media

Use: Dry chemical. Carbon dioxide (CO<sub>2</sub>). Water spray. alcohol-resistant foam.

**Unsuitable extinguishing media** no data available.

### Specific hazards arising from the chemical

In the event of fire and/or explosion do not breathe fumes.

**Hazardous combustion products** Carbon oxides. Carbon monoxide. Sulfur oxides.

### Explosion data

### Protective equipment and precautions for firefighters

Use personal protective equipment. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

#### **Personal Precautions**

Provide adequate ventilation. Avoid contact with skin, eyes and inhalation of vapors. Use personal protective equipment. Wash thoroughly after handling.

### Environmental Precautions

#### **Environmental precautions**

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

### Methods and material for containment and cleaning up

#### **Methods for Clean-Up**

Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

## 7. Handling and Storage

### Precautions for safe handling

#### **Handling**

Wear personal protective equipment. Do not breathe vapours or spray mist. Avoid contact with skin and eyes. Do not eat, drink or smoke when using this product.

### Conditions for safe storage, including any incompatibilities

#### **Storage**

Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat. Protect from light. Keep in properly labelled containers. Keep out of the reach of children. Store in an area where cross-contamination with pesticides, fertilizers, food or feed could not occur.

Product is pourable down to -5 C (23 F). At -8 C (17.6 F), the product starts to thicken. Below -8 C (17.6 F), the product will thicken and eventually become a non-pourable crystalline solid. This is completely reversible upon warming the product above -5 C (23 F). The freezing of the product, to where it becomes a non-pourable crystalline solid, does not impact the efficacy of the product.

If product thickens or become solid - allow product to warm to 40 - 70 F (4- 21 C) using drum blankets or hot boxes. Steam may be used to warm however it should not be directly applied. DO NOT use open flame to warm.

#### **incompatible materials**

Strong acids. Strong oxidizing agents. Bases.

## 8. Exposure Controls/Personal Protection

**Exposure guidelines**

| Chemical name   | ACGIH TLV   | OSHA PEL                                                                                                                         |
|-----------------|-------------|----------------------------------------------------------------------------------------------------------------------------------|
| 2-Butoxyethanol | TWA: 20 ppm | TWA: 50 ppm<br>TWA: 240 mg/m <sup>3</sup><br>(vacated) TWA: 25 ppm<br>(vacated) TWA: 120 mg/m <sup>3</sup><br>(vacated) S*<br>S* |

**Engineering controls**

Investigate engineering techniques to reduce exposures. Local mechanical exhaust ventilation is preferred. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

**Personal protective equipment****Eye/Face Protection**

Use eye protection to avoid eye contact. Where there is potential for eye contact have eye flushing equipment available. Safety glasses with side-shields.

**Skin protection**

Wear protective gloves/clothing. Socks and footwear.

**Respiratory protection**

Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. If exposures cannot be kept at a minimum with engineering controls, consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure, use an approved full face positive-pressure, self-contained breathing apparatus. Respiratory protection programs must comply with 29 CFR 1910.134. For emergency and other conditions where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR 1910.134.

**General hygiene considerations**

When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Wash hands and face before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection.

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

|                                        |                          |                        |
|----------------------------------------|--------------------------|------------------------|
| Appearance                             | Red                      |                        |
| Physical state                         | Liquid                   |                        |
| Odor                                   | no data available        |                        |
| color                                  | No information available |                        |
| <u>Property</u>                        | <u>VALUES</u>            | <u>Remarks/ Method</u> |
| pH                                     | 7                        | None known             |
| Melting point/freezing point           |                          |                        |
| Boiling Point/Range                    |                          | None known             |
| Flash Point                            | > 212 F / 100 C          | None known             |
| Evaporation Rate                       |                          | None known             |
| Flammability (solid, gas)              |                          | None known             |
| Specific gravity                       | 1.12 -1.17               | None known             |
| Bulk density                           |                          | None known             |
| Water solubility                       |                          | None known             |
| Solubility in Other Solvents           | No information available | None known             |
| Partition coefficient: n-octanol/water |                          | None known             |
| Autoignition temperature               |                          | None known             |
| Decomposition temperature              |                          | None known             |
| Viscosity                              |                          | None known             |

**9.2 OTHER INFORMATION- NONE**

## 10. Stability and Reactivity

**Reactivity**

no data available

**Chemical stability**

Stable under normal conditions. Hazardous polymerisation does not occur.

**Possibility of hazardous reactions**

None under normal processing.

**Conditions to avoid**

Keep away from open flames, hot surfaces and sources of ignition.

**Incompatible materials**

Strong acids. Strong oxidizing agents. Bases.

**Hazardous decomposition products**

Carbon oxides. Carbon monoxide. Oxides of sulfur.

**11. Toxicological Information****Information on Likely Routes of Exposure****Product information**

Lifeline/Interline :

Acute oral LD50 (rat) - &gt;5,000 mg/kg

Acute dermal LD50(rat/rabbit) = &gt;2,000 mg/kg

Acute inhalation LC50 (rat) 4 hr = &gt;3.133 mg/L [&gt;12.5 mg/L 1 hr]

Primary eye irritation (rabbit) = Not an irritant

Primary dermal irritation (rabbit)= Not an irritant

Dermal sensitization = Not a sensitizer

**Inhalation**

HARMFUL IF INHALED.

**Eye contact**

Not classified.

**Skin contact**

Based on available data, the classification criteria are not met. Not a skin irritant or sensitizer.

**Ingestion**

Based on available data, the classification criteria are not met.

**Information on Toxicological Effects****Symptoms**

No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Sensitization**

No information available.

**Mutagenic effects**

no data available.

**Carcinogenicity**

The information below indicates whether any agency has listed any ingredient as a carcinogen.

| Chemical name               | ACGIH | IARC    | NTP | OSHA |
|-----------------------------|-------|---------|-----|------|
| 2-Butoxyethanol<br>111-76-2 | A3    | Group 3 |     | -    |

**Reproductive effects**

Not Available.

**STOT - Single Exposure**

no data available.

**STOT - Repeated Exposure**

no data available.

**Chronic toxicity**

Avoid repeated exposure.

**Target organ effects**

Respiratory System, EYES, skin, Central Nervous System (CNS).

**Aspiration hazard**

No information available.

**Numerical Measures of Toxicity - Product information**

LD50 Oral > 5000 mg/kg (rat)  
LD50 Dermal > 2000 mg/kg (rat)

## 12. Ecological Information

### ecotoxicity

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 clean equipment or dispose of equipment washwater in a manner that will contaminate water resources or arable land. Do not apply when weather conditions favor drift from treated areas.

### Persistence/Degradability

no data available.

### Bioaccumulation/ Accumulation

Bioaccumulative potential.

| Chemical name               | Log Pow |
|-----------------------------|---------|
| Propylene Glycol<br>57-55-6 | -1.07   |
| 2-Butoxyethanol<br>111-76-2 | 0.81    |

### Other Adverse Effects

no data available

## 13. Disposal Considerations

### Waste Treatment Methods

#### **Waste Disposal Method**

Pesticide wastes can be hazardous. Improper disposal of excess pesticide or rinsate is a violation of Federal law. If the wastes cannot be disposed of by use or 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.

#### **Contaminated packaging**

Refer to product label.

## 14. Transport Information

### DOT

NOT REGULATED

### TDG

NOT REGULATED

### IATA

NOT REGULATED

### IMDG

NOT REGULATED

## 15. Regulatory Information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**signal word** CAUTION

**Ventilation Control** PESTICIDE APPLICATORS & WORKERS THESE WORKERS MUST REFER TO PRODUCT LABELING AND DIRECTIONS FOR USE IN ACCORDANCE WITH EPA WORKER PROTECTION STANDARD 40 CFR PART 170.

**Harmful if absorbed through the skin. Keep out of Reach of Children.**

#### International Inventories

|         |             |
|---------|-------------|
| USINV   | Present     |
| DSL/NDL | Not present |
| EINECS/ | Not Present |
| ELINCS  |             |
| ENCS    | Not Present |
| China   | Not Present |
| KECL    | Not Present |
| PICCS   | Not Present |
| AICS    | Not Present |
| TSCA    | Not Present |

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

#### Federal Regulations

##### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

##### CERCLA

Not applicable

##### CERCLA

**SARA Product RQ** 0

##### RCRA

#### Pesticide Information

| Component                            | FIFRA - Restricted Use | FIFRA - Pesticide Product Other Ingredients | FIFRA - Listing of Pesticide Chemicals | California Pesticides - Restricted Materials |
|--------------------------------------|------------------------|---------------------------------------------|----------------------------------------|----------------------------------------------|
| Glufosinate ammonium<br>( 20 - 30% ) |                        |                                             | X                                      |                                              |
| Propylene Glycol<br>57-55-6 ( 10 )   |                        |                                             | X                                      |                                              |
| 2-Butoxyethanol<br>111-76-2 ( 3.5 )  |                        |                                             | X                                      |                                              |

#### State Regulations

## State Right-to-Know

| Chemical name              | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|----------------------------|---------------|------------|--------------|----------|--------------|
| Propylene Glycol - 57-55-6 |               | X          | X            |          |              |
| 2-Butoxyethanol - 111-76-2 | X             | X          | X            |          |              |

## International regulations

## U.S. EPA Label information

EPA Pesticide registration number 70506-310

## 16. Other Information

## NFPA

HEALTH 1

flammability 1

Instability 0

Physical hazard -

Preparation Date 29-Apr-2015

Revision date 22-Jan-2024

## Revision Summary

Update section 7 Update Section 9 Update section 11

## Disclaimer

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End of SDS

Issue Date 17-Nov-2014

Revision Date 07-May-2019

Version 5

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

### Product identifier.

**Product Name** Atrimmec® Plant Growth Regulator

### Other means of identification

**Product Code** PBI FP 6621076

**EPA Pesticide Registration Number** 2217-776

**Product Size** 4/1 U. S. Gal.

### Recommended use of the chemical and restrictions on use

**Recommended Use** Growth regulator

**Uses advised against** No information available

### Details of the supplier of the safety data sheet

#### Supplier Address

PBI-Gordon Corporation  
P.O. Box 860350  
Shawnee, KS 66286

#### Company Name

PBI-Gordon Corporation  
P.O. Box 860350  
Shawnee, KS 66286

#### Manufacturer

PBI-Gordon Corporation  
P.O. Box 860350  
Shawnee, KS 66286

### Emergency telephone number

**24 Hour Emergency Phone Number** Chemtrec 1-800-424-9300

## 2. HAZARDS IDENTIFICATION

### Classification

#### **OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                    |             |
|------------------------------------|-------------|
| Skin Corrosion/Irritation Category | Category 3  |
| Serious eye damage/eye irritation  | Category 2B |
| Acute Aquatic Toxicity             | Category 3  |
| Flammable liquids                  | Category 3  |

### Label elements

#### **Emergency Overview**

#### **Signal word**

Warning

#### **Hazard statements**

- Causes mild skin irritation
- Causes eye irritation
- Harmful to aquatic life
- Flammable liquid and vapor



**Appearance** Liquid

**Physical state** Liquid

**Odor** No discernible odor

### Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Contaminated work clothing must not be allowed out of the workplace  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
Keep container tightly closed  
Wear protective gloves/eye protection/face protection

**Precautionary Statements - Response**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention  
If skin irritation or rash occurs: Get medical advice/attention  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower  
Wash contaminated clothing before reuse  
In case of fire: Use CO<sub>2</sub>, dry chemical, or foam to extinguish

**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep cool

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Have the product label with you when calling a poison control center or doctor or going in for treatment. You may also contact 1-877-800-5556 for emergency medical treatment advice.

The low flash point of this product is due to a minor component in the mixture. Based on independent laboratory testing of similar products, this product would not sustain combustion as specified in DOT Regulation 49 CFR 173 Appendix H; however OSHA HCS 2012 flammable classifications are solely based on tested mixture flash points and boiling points.

**Other information**

Not applicable

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Substance**

Not applicable.

**Mixture**

| Chemical name    | CAS No       | Weight-% |
|------------------|--------------|----------|
| Dikegulac-sodium | 52508-35-7   | 18.5     |
| Trade Secret     | Trade secret | 2-5*     |
| Trade Secret     | Trade secret | 0-1*     |
| Trade Secret     | Trade secret | 0-1*     |

\* The exact percentage (concentration) of composition has been withheld as a trade secret.

**4. FIRST AID MEASURES****Description of first aid measures**

|                     |                                                                                                                                                                                                                                       |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye contact</b>  | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. If symptoms persist, call a physician. |
| <b>Skin contact</b> | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.                                                                                          |
| <b>Inhalation</b>   | Remove to fresh air. Get medical attention immediately if symptoms occur.                                                                                                                                                             |
| <b>Ingestion</b>    | Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.                                                                         |

**Self-protection of the first aider** Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** No information available.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media** Dry chemical. Carbon dioxide (CO<sub>2</sub>). Water spray. Alcohol resistant foam.

**Unsuitable extinguishing media** No information available.

**Specific hazards arising from the chemical** In the event of fire and/or explosion do not breathe fumes. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

**Explosion data**

**Sensitivity to mechanical impact** None.

**Sensitivity to static discharge** None.

**Special protective equipment for fire-fighters** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. See section 8 for more information.

**Environmental precautions**

**Environmental precautions** Prevent further leakage or spillage if safe to do so Prevent product from entering drains Do not flush into surface water or sanitary sewer system See Section 12 for additional ecological information Avoid release to the environment

**Other information** Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

**Methods and material for containment and cleaning up**

**Methods for containment** Stop leak if you can do it without risk.

**Methods for cleaning up** Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Advice on safe handling** Use personal protection equipment. Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Keep out of the reach of children.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure Limits

| Chemical name | ACGIH TLV                    | OSHA PEL                                                                                                 | NIOSH IDLH                                                                                             |
|---------------|------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Trade Secret  | Ceiling: 2 mg/m <sup>3</sup> | TWA: 2 mg/m <sup>3</sup><br>(vacated) Ceiling: 2 mg/m <sup>3</sup>                                       | IDLH: 10 mg/m <sup>3</sup><br>Ceiling: 2 mg/m <sup>3</sup>                                             |
| Trade Secret  | STEL: 15 ppm<br>TWA: 10 ppm  | TWA: 10 ppm<br>TWA: 25 mg/m <sup>3</sup><br>(vacated) TWA: 10 ppm<br>(vacated) TWA: 25 mg/m <sup>3</sup> | IDLH: 50 ppm<br>TWA: 10 ppm<br>TWA: 25 mg/m <sup>3</sup><br>STEL: 15 ppm<br>STEL: 37 mg/m <sup>3</sup> |

#### Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

|         |                             |      |                                  |
|---------|-----------------------------|------|----------------------------------|
| TWA     | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value         | *    | Skin designation                 |

**Other Information** Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

### Appropriate engineering controls

**Engineering controls** Showers  
Eyewash stations  
Ventilation systems.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** Tight sealing safety goggles.

**Hand protection** Chemical resistant gloves.

**Skin and body protection** Wear suitable protective clothing. Wear long-sleeved shirt, long pants, socks and shoes.

**Respiratory protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**General hygiene considerations** Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

**Physical state** Liquid  
**Appearance** Liquid  
**Color** Light blue  
**Odor** No discernible odor  
**Odor threshold** No information available

| <u>Property</u>               | <u>Values</u>     | <u>Remarks • Method</u> |
|-------------------------------|-------------------|-------------------------|
| pH                            | 9.5               |                         |
| Melting point/freezing point  | No data available | None known              |
| Boiling point / boiling range | 100 °C / 212 °F   |                         |
| Flash point                   | 44 °C / 111 °F    |                         |
| Evaporation rate              | > 1               |                         |
| Flammability (solid, gas)     | No data available | None known              |
| Flammability Limit in Air     |                   | None known              |

|                              |                   |            |
|------------------------------|-------------------|------------|
| Upper flammability limit:    | No data available |            |
| Lower flammability limit:    | No data available |            |
| Vapor pressure               | <17 mm Hg         |            |
| Vapor density                | <1                |            |
| Specific Gravity             | 1.0951            |            |
| Water solubility             | Soluble in water  |            |
| Solubility in other solvents | No data available | None known |
| Partition coefficient        | No data available | None known |
| Autoignition temperature     | No data available | None known |
| Decomposition temperature    | No data available | None known |

**Other Information**

|                      |                          |
|----------------------|--------------------------|
| Oxidizing properties | No information available |
| Liquid Density       | 9.12 pounds/gallon       |
| Bulk density         | No information available |

## 10. STABILITY AND REACTIVITY

**Reactivity**

No information available

**Stability**

Stable under recommended storage conditions

**Possibility of hazardous reactions**

None under normal processing.

**Hazardous polymerization**

Will not occur.

**Conditions to avoid**

Keep out of reach of children.

**Incompatible materials**

Strong acids. Strong bases. Strong oxidizing agents.

**Hazardous decomposition products**

None known.

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure****Product Information**

|                     |                                            |
|---------------------|--------------------------------------------|
| <b>Inhalation</b>   | May cause irritation of respiratory tract. |
| <b>Eye contact</b>  | Causes eye irritation.                     |
| <b>Skin contact</b> | Causes mild skin irritation.               |
| <b>Ingestion</b>    | May be harmful if swallowed.               |

**Component Information**

| Chemical name                  | Oral LD50            | Dermal LD50                                                  | Inhalation LC50         |
|--------------------------------|----------------------|--------------------------------------------------------------|-------------------------|
| Dikegulac-sodium<br>52508-35-7 | = 18 g/kg ( Rat )    | > 1 g/kg ( Rabbit ) > 1 g/kg ( Rat )<br>> 2000 mg/kg ( Rat ) | > 2 mg/L ( Rat ) 4 h    |
| Trade Secret                   | = 325 mg/kg ( Rat )  | = 1350 mg/kg ( Rabbit )                                      | -                       |
| Trade Secret                   | = 1020 mg/kg ( Rat ) | -                                                            | -                       |
| Trade Secret                   | = 3310 mg/kg ( Rat ) | = 1060 mg/kg ( Rabbit )                                      | = 11.4 mg/L ( Rat ) 4 h |

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

**Symptoms related to the physical, chemical and toxicological characteristics**

**Symptoms** No information available.

**Acute toxicity****Numerical measures of toxicity - Product Information****Unknown Toxicity**

27 % of the mixture consists of ingredient(s) of unknown toxicity

27 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

27 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

27 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

**LD50 Oral** > 5000 mg/kg Rat-female

**LD50 Dermal** > 5000 mg/kg (rat)

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Skin corrosion/irritation** Causes mild skin irritation.

**Serious eye damage/eye irritation** Causes eye irritation.

**Respiratory or skin sensitization** Not a skin sensitizer.

**Germ cell mutagenicity** No information available.

**Carcinogenicity** No information available.

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Target Organ Effects** Respiratory system, Eyes, Skin.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity** Harmful to aquatic life.

| Chemical name | Algae/aquatic plants | Fish                                                                                           | Toxicity to microorganisms                                                | Crustacea                                                                |
|---------------|----------------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Trade Secret  | -                    | 45.4: 96 h Oncorhynchus mykiss mg/L LC50 static                                                | -                                                                         | -                                                                        |
| Trade Secret  | -                    | 79: 96 h Pimephales promelas mg/L LC50 static<br>75: 96 h Lepomis macrochirus mg/L LC50 static | EC50 = 8.8 mg/L 15 min<br>EC50 = 8.8 mg/L 25 min<br>EC50 = 8.8 mg/L 5 min | 47: 24 h Daphnia magna mg/L EC50 65: 48 h Daphnia magna mg/L EC50 Static |

**Persistence and degradability** No information available.

**Bioaccumulation** No information available.

**Other adverse effects** No information available.

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

|                                            |                                                                                                                                                  |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Waste from residues/unused products</b> | Disposal should be in accordance with applicable regional, national and local laws and regulations. Should not be released into the environment. |
| <b>Contaminated packaging</b>              | Do not reuse empty containers.                                                                                                                   |
| <b>US EPA Waste Number</b>                 | D001, See Section 2: Hazards not otherwise classified (HNOC).                                                                                    |

### 14. TRANSPORT INFORMATION

|                                   |                                                                                                             |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b><u>DOT</u></b>                 | Not regulated                                                                                               |
| <b><u>TDG</u></b>                 | Not regulated                                                                                               |
| <b><u>MEX</u></b>                 | Not regulated                                                                                               |
| <b><u>ICAO (air)</u></b>          | Not regulated                                                                                               |
| <b><u>IATA</u></b>                | Limited quantity applies with an inner packaging less than 5 L or gross package weight less than 30 kg.     |
| <b>UN number</b>                  | UN3082                                                                                                      |
| <b>UN proper shipping name</b>    | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.                                                         |
| <b>Transport hazard class(es)</b> | 9                                                                                                           |
| <b>Packing group</b>              | III                                                                                                         |
| <b>Special Provisions</b>         | A97, A158, A197                                                                                             |
| <b>Description</b>                | UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(Dikegulac-sodium), 9, III                   |
| <b><u>IMDG</u></b>                | Limited quantity applies with an inner packaging less than 5 L or gross package weight less than 30 kg.     |
| <b>UN number</b>                  | UN3082                                                                                                      |
| <b>UN proper shipping name</b>    | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.                                                         |
| <b>Transport hazard class(es)</b> | 9                                                                                                           |
| <b>Packing group</b>              | III                                                                                                         |
| <b>EmS-No.</b>                    | F-A, S-F                                                                                                    |
| <b>Special Provisions</b>         | 274, 335, 969                                                                                               |
| <b>Description</b>                | UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(DIKEGULAC-SODIUM), 9, III, MARINE POLLUTANT |

### 15. REGULATORY INFORMATION

#### U.S. EPA Label Information

**EPA Pesticide Registration Number** 2217-776

#### **Federal Insecticide, Fungicide, Rodenticide Act Regulations**

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:.

#### **EPA Pesticide Label**

Caution

Keep out of the reach of children

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION: Causes moderate eye irritation. Avoid contact with eyes or clothing.

Environmental Hazards

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

#### International Inventories

|                      |            |
|----------------------|------------|
| <b>TSCA</b>          | Not Listed |
| <b>DSL/NDL</b>       | Not Listed |
| <b>EINECS/ELINCS</b> | Not Listed |
| <b>ENCS</b>          | Not Listed |
| <b>IECSC</b>         | Not Listed |
| <b>KECL</b>          | Not Listed |
| <b>PICCS</b>         | Not Listed |
| <b>AICS</b>          | Not Listed |

#### Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

#### US Federal Regulations

##### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

##### **SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

##### **CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

| Chemical name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Trade Secret  | 1000 lb                     | -                      | -                         | X                          |
| Trade Secret  | 5000 lb                     | -                      | -                         | X                          |

##### **CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

| Chemical name | Hazardous Substances RQs | Extremely Hazardous Substances RQs |
|---------------|--------------------------|------------------------------------|
| Trade Secret  | 1000 lb                  | -                                  |
| Trade Secret  | 5000 lb                  | -                                  |

#### US State Regulations

##### U.S. State Right-to-Know Regulations

##### **US State Regulations**

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|---------------|------------|---------------|--------------|
| Trade Secret  | X          | X             | X            |
| Trade Secret  | X          | X             | X            |

**16. OTHER INFORMATION**

|             |                  |                |                    |                                    |
|-------------|------------------|----------------|--------------------|------------------------------------|
| <u>NFPA</u> | Health hazards 2 | Flammability 1 | Instability 0      | Physical and Chemical Properties - |
| <u>HMIS</u> | Health hazards 2 | Flammability 1 | Physical hazards 0 | Personal protection X              |

**Disclaimer**

The information provided in this Material Safety Data Sheet is correct to the best of PBI Gordon Corporation's knowledge, information and belief at the date of this publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process, unless specified in the text. PBI GORDON CORPORATION MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. Given the variety of factors that can affect the use and application of this product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the product to determine whether it is fit for a particular purpose and suitable for user's method of use or application. Each user is also responsible for evaluating the conditions of use and designing the appropriate protective mechanisms to prevent employee exposures, property damage, or release to the environment. PBI Gordon Corporation assumes no responsibility for injury to the recipient or third persons, or for any damage to any property resulting from misuse of the product.

**End of Safety Data Sheet**

# SAFETY DATA SHEET



## SPECTICLE® G

Version 3.0 / USA  
102000029955

1/11

Revision Date: 05/22/2020  
Print Date: 05/23/2020

### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### Product identifier

|                      |              |
|----------------------|--------------|
| Trade name           | SPECTICLE® G |
| Product code (UVP)   | 84118273     |
| SDS Number           | 102000029955 |
| EPA Registration No. | 432-1523     |

#### Relevant identified uses of the substance or mixture and uses advised against

|                                           |                                                                                                                              |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Use                                       | Herbicide                                                                                                                    |
| Restrictions on use                       | See product label for restrictions.                                                                                          |
| Information on supplier                   |                                                                                                                              |
| Supplier                                  | Bayer Environmental Science<br>A division of Bayer CropScience LP<br>500 Centregreen Way, Suite 400<br>Cary, NC 27513<br>USA |
| Responsible Department                    | Email: SDSINFO.BCS-NA@bayer.com                                                                                              |
| Emergency telephone no.                   |                                                                                                                              |
| Emergency Telephone Number (24hr/ 7 days) | 1-800-334-7577                                                                                                               |
| Product Information Telephone Number      | 1-800-331-2867                                                                                                               |

### SECTION 2: HAZARDS IDENTIFICATION

#### Classification in accordance with regulation HCS 29CFR §1910.1200

Acute toxicity(Inhalation): Category 4  
Carcinogenicity: Category 1B

#### Labelling in accordance with regulation HCS 29CFR §1910.1200



**Signal word:** Danger

#### Hazard statements

**Harmful if inhaled.**

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|| May cause cancer.

### Precautionary statements

|| Avoid breathing dust.  
|| Use only outdoors or in a well-ventilated area.  
|| Obtain special instructions before use.  
|| Do not handle until all safety precautions have been read and understood.  
|| Wear protective gloves/ protective clothing/ eye protection/ face protection.  
|| IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
|| Call a POISON CENTER/doctor/physician if you feel unwell.  
|| IF exposed or concerned: Get medical advice/ attention.  
|| Store locked up.  
|| Dispose of contents/container in accordance with local regulation.

### Hazards Not Otherwise Classified (HNOC)

No physical hazards not otherwise classified.  
No health hazards not otherwise classified.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Hazardous Component Name          | CAS-No.     | Concentration % by weight |
|-----------------------------------|-------------|---------------------------|
| Indaziflam                        | 950782-86-2 | 0.0224                    |
| Propyl-S-(-)-2-Hydroxy Propionate | 53651-69-7  | 1.1                       |
| 2-methylpentane-2,4-diol          | 107-41-5    | 2.0                       |
| Crystalline quartz (respirable)   | 14808-60-7  | 0.96                      |

## SECTION 4: FIRST AID MEASURES

### Description of first aid measures

|                       |                                                                                                                                                                                                                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General advice</b> | When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.                                                                                                                                                            |
| <b>Inhalation</b>     | Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.                                                                                      |
| <b>Skin contact</b>   | Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.                                                                                                               |
| <b>Eye contact</b>    | 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 physician or poison control center immediately.                                                                       |
| <b>Ingestion</b>      | Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended. |

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### Most important symptoms and effects, both acute and delayed

**Symptoms** To date no symptoms are known.

### Indication of any immediate medical attention and special treatment needed

**Treatment** Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

---

## SECTION 5: FIREFIGHTING MEASURES

### Extinguishing media

**Suitable** Water spray, Carbon dioxide (CO<sub>2</sub>), Dry powder, Foam

**Unsuitable** High volume water jet

**Special hazards arising from the substance or mixture** Dangerous gases are evolved in the event of a fire.

### Advice for firefighters

**Special protective equipment for firefighters** Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

**Further information** Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

**Flash point** Not applicable

**Auto-ignition temperature** No data available

**Lower explosion limit** Not applicable

**Upper explosion limit** Not applicable

**Explosivity** No data available

---

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Precautions** Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

### Methods and materials for containment and cleaning up

**Methods for cleaning up** Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.

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|                                    |                                                                                                                                                                                           |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Additional advice</b>           | Use personal protective equipment. If the product is accidentally spilled, do not allow to enter soil, waterways or waste water canal. Do not allow product to contact non-target plants. |
| <b>Reference to other sections</b> | Information regarding safe handling, see section 7.<br>Information regarding personal protective equipment, see section 8.<br>Information regarding waste disposal, see section 13.       |

## SECTION 7: HANDLING AND STORAGE

### Precautions for safe handling

**Advice on safe handling** Use only in area provided with appropriate exhaust ventilation. Handle and open container in a manner as to prevent spillage.

**Hygiene measures** Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.  
Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

### Conditions for safe storage, including any incompatibilities

**Requirements for storage areas and containers** Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

| Components                                        | CAS-No.     | Control parameters                           | Update  | Basis    |
|---------------------------------------------------|-------------|----------------------------------------------|---------|----------|
| Indaziflam                                        | 950782-86-2 | 0.56 mg/m <sup>3</sup><br>(TWA)              |         | OES BCS* |
| 2-methylpentane-2,4-diol                          | 107-41-5    | 125 mg/m <sup>3</sup> /25 ppm<br>(CEILING)   | 1989    | OSHA Z1A |
| 2-methylpentane-2,4-diol<br>(Aerosol, inhalable.) | 107-41-5    | 10 mg/m <sup>3</sup><br>(STEL)               | 03 2017 | ACGIH    |
| 2-methylpentane-2,4-diol<br>(Vapor fraction)      | 107-41-5    | 50 ppm<br>(STEL)                             | 03 2017 | ACGIH    |
| 2-methylpentane-2,4-diol<br>(Vapor fraction)      | 107-41-5    | 25 ppm<br>(TWA)                              | 03 2017 | ACGIH    |
| 2-methylpentane-2,4-diol                          | 107-41-5    | 125 mg/m <sup>3</sup> /25 ppm<br>(Ceil_Time) | 2010    | NIOSH    |

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|                                                                  |            |                                                            |         |           |
|------------------------------------------------------------------|------------|------------------------------------------------------------|---------|-----------|
| 2-methylpentane-2,4-diol                                         | 107-41-5   | 125 mg/m3/25 ppm<br>(CEILING)                              | 06 2008 | TN OEL    |
| 2-methylpentane-2,4-diol                                         | 107-41-5   | 125 mg/m3/25 ppm<br>(CEILING)                              | 08 2010 | US CA OEL |
| Crystalline quartz<br>(respirable)<br><br>(Respirable fraction.) | 14808-60-7 | 0.025 mg/m3<br>(TWA)                                       | 02 2012 | ACGIH     |
| Crystalline quartz<br>(respirable)<br><br>(Respirable dust.)     | 14808-60-7 | 0.05 mg/m3<br>(REL)                                        | 2016    | NIOSH     |
| Crystalline quartz<br>(respirable)                               | 14808-60-7 | 0.05 mg/m3<br>(TWA)                                        | 03 2016 | OSHA      |
| Crystalline quartz<br>(respirable)                               | 14808-60-7 | 0.025 mg/m3<br>(OSHA_ACT)                                  | 03 2016 | OSHA      |
| Crystalline quartz<br>(respirable)<br><br>(Respirable dust.)     | 14808-60-7 | 0.05 mg/m3<br>(PEL)                                        | 03 2016 | OSHA Z1   |
| Crystalline quartz<br>(respirable)<br><br>(Respirable dust.)     | 14808-60-7 | 0.050 mg/m3<br>(TWA)                                       | 01 2019 | TN OEL    |
| Crystalline quartz<br>(respirable)<br><br>(Respirable dust.)     | 14808-60-7 | 0.05 mg/m3<br>(TWA PEL)                                    | 10 2016 | US CA OEL |
| Crystalline quartz<br>(respirable)<br><br>(Respirable.)          | 14808-60-7 | 2.4millions of particles per<br>cubic foot of air<br>(TWA) | 2000    | Z3        |
| Crystalline quartz<br>(respirable)<br><br>(Respirable.)          | 14808-60-7 | 0.1 mg/m3<br>(TWA)                                         | 2000    | Z3        |

\*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

### Exposure controls

#### Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

#### Respiratory protection

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

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|                                    |                                                                                                                                                                                                 |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hand protection</b>             | Chemical resistant nitrile rubber gloves                                                                                                                                                        |
| <b>Eye protection</b>              | Safety glasses with side-shields                                                                                                                                                                |
| <b>Skin and body protection</b>    | Wear long-sleeved shirt and long pants and shoes plus socks.                                                                                                                                    |
| <b>General protective measures</b> | Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water.<br>Keep and wash PPE separately from other laundry. |

---

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

|                                                           |                                 |
|-----------------------------------------------------------|---------------------------------|
| <b>Appearance</b>                                         | grey to tan                     |
| <b>Physical State</b>                                     | granular                        |
| <b>Odor</b>                                               | characteristic                  |
| <b>Odour Threshold</b>                                    | No data available               |
| <b>pH</b>                                                 | ca. 4 - 7 (10 %)                |
| <b>Viscosity, kinematic</b>                               | No data available               |
| <b>Vapor Pressure</b>                                     | No data available               |
| <b>Vapor Density (Air = 1)</b>                            | No data available               |
| <b>Density</b>                                            | No data available               |
| <b>Bulk density</b>                                       | 45 - 55 lb/ft <sup>3</sup>      |
| <b>Evaporation rate</b>                                   | Not applicable                  |
| <b>Boiling Point</b>                                      | Not applicable                  |
| <b>Melting / Freezing Point</b>                           | Not applicable                  |
| <b>Water solubility</b>                                   | dispersible                     |
| <b>Minimum Ignition Energy</b>                            | No data available               |
| <b>Decomposition temperature</b>                          | Stable under normal conditions. |
| <b>Self-accelarating decomposition temperature (SADT)</b> | No data available               |
| <b>Partition coefficient: n-octanol/water</b>             | Not applicable                  |
| <b>Flammability</b>                                       | No data available               |
| <b>Flash point</b>                                        | Not applicable                  |
| <b>Auto-ignition temperature</b>                          | No data available               |
| <b>Lower explosion limit</b>                              | Not applicable                  |

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|                       |                   |
|-----------------------|-------------------|
| Upper explosion limit | Not applicable    |
| Explosivity           | No data available |
| Particle size         | No data available |

---

## SECTION 10: STABILITY AND REACTIVITY

### Reactivity

|                                    |                                                                                      |
|------------------------------------|--------------------------------------------------------------------------------------|
| Thermal decomposition              | Stable under normal conditions.                                                      |
| Chemical stability                 | Stable under recommended storage conditions.                                         |
| Possibility of hazardous reactions | No hazardous reactions when stored and handled according to prescribed instructions. |
| Conditions to avoid                | Extremes of temperature and direct sunlight.                                         |
| Incompatible materials             | No incompatible materials known.                                                     |
| Hazardous decomposition products   | No decomposition products expected under normal conditions of use.                   |

---

## SECTION 11: TOXICOLOGICAL INFORMATION

|                   |                                                  |
|-------------------|--------------------------------------------------|
| Exposure routes   | Inhalation, Eye contact, Skin contact, Ingestion |
| Immediate Effects |                                                  |
| Eye               | May cause mild irritation to eyes.               |
| Skin              | May cause mild irritation to the skin.           |

### Information on toxicological effects

|                           |                                                                                                                               |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Acute oral toxicity       | LD50 (Rat) > 5,000 mg/kg                                                                                                      |
| Acute inhalation toxicity | LC50 (Rat) > 2.09 mg/l<br>Exposure time: 4 h<br>Determined in the form of liquid aerosol.<br>highest concentration tested     |
|                           | LC50 (Rat) > 8.36 mg/l<br>Exposure time: 1 h<br>Determined in the form of liquid aerosol.<br>Extrapolated from the 4 hr LC50. |
| Acute dermal toxicity     | LD50 (Rat) > 5,000 mg/kg                                                                                                      |
| Skin corrosion/irritation | Slight irritant effect - does not require labelling. (Rabbit)                                                                 |
| Serious eye damage/eye    | Minimally irritating. (Rabbit)                                                                                                |

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### irritation

#### Respiratory or skin sensitisation

Skin: Non-sensitizing. (Guinea pig)

#### Assessment STOT Specific target organ toxicity – single exposure

Indaziflam: May cause damage to organs in nervous system following oral route.

#### Assessment STOT Specific target organ toxicity – repeated exposure

Indaziflam caused neurobehavioral effects and/or neuropathological changes in subchronic studies in rats and dogs. Indaziflam: May cause damage to organs (Nervous system) through prolonged or repeated exposure.

#### Assessment mutagenicity

Indaziflam was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

#### Assessment carcinogenicity

Indaziflam was not carcinogenic in lifetime feeding studies in rats and mice.

#### ACGIH

|                                 |            |          |
|---------------------------------|------------|----------|
| Crystalline quartz (respirable) | 14808-60-7 | Group A2 |
|---------------------------------|------------|----------|

#### NTP

|                                 |            |
|---------------------------------|------------|
| Crystalline quartz (respirable) | 14808-60-7 |
|---------------------------------|------------|

#### IARC

|                                 |            |                       |
|---------------------------------|------------|-----------------------|
| Crystalline quartz (respirable) | 14808-60-7 | Overall evaluation: 1 |
|---------------------------------|------------|-----------------------|

#### OSHA

None.

#### Assessment toxicity to reproduction

Indaziflam was not a primary reproductive toxicant in a two-generation study in rats.

#### Assessment developmental toxicity

Indaziflam did not cause developmental toxicity in rats and rabbits.

#### Aspiration hazard

Based on available data, the classification criteria are not met.

#### Further information

Acute toxicity studies have been bridged from a similar formulation(s).  
The non-acute information pertains to the active ingredient(s).

---

## SECTION 12: ECOLOGICAL INFORMATION

#### Toxicity to fish

LC50 (Oncorhynchus mykiss (rainbow trout)) 0.572 mg/l  
Exposure time: 96 h  
The value mentioned relates to the active ingredient indaziflam.

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|                                          |                                                                                                                                                                                                                                              |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Toxicity to aquatic invertebrates</b> | EC50 (Daphnia magna (Water flea)) > 9.88 mg/l<br>Exposure time: 48 h<br>The value mentioned relates to the active ingredient indaziflam.                                                                                                     |
| <b>Toxicity to aquatic plants</b>        | IC50 (Raphidocelis subcapitata (freshwater green alga)) 0.134 mg/l<br>Growth rate; Exposure time: 96 h<br>The value mentioned relates to the active ingredient indaziflam.                                                                   |
| <b>Toxicity to other organisms</b>       | LD50 (Eisenia fetida (earthworms)) > 1,000 mg/kg<br>Exposure time: 14 d<br>The value mentioned relates to the active ingredient indaziflam.                                                                                                  |
| <b>Biodegradability</b>                  | Indaziflam:<br>Not rapidly biodegradable                                                                                                                                                                                                     |
| <b>Koc</b>                               | Indaziflam: Koc: 496                                                                                                                                                                                                                         |
| <b>Bioaccumulation</b>                   | Indaziflam: Bioconcentration factor (BCF) 66<br>Does not bioaccumulate.                                                                                                                                                                      |
| <b>Mobility in soil</b>                  | Indaziflam: Moderately mobile in soils                                                                                                                                                                                                       |
| <b>Environmental precautions</b>         | Do not allow to get into surface water, drains and ground water.<br>Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.<br>Apply this product as specified on the label. |

## SECTION 13: DISPOSAL CONSIDERATIONS

### Waste treatment methods

|                               |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product</b>                | Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.<br>Dispose in accordance with all local, state/provincial and federal regulations.                                                                            |
| <b>Contaminated packaging</b> | Do not re-use empty containers.<br>Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities.<br>If burned, stay out of smoke.<br>Follow advice on product label and/or leaflet. |
| <b>RCRA Information</b>       | Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.                                                                                                                         |

## SECTION 14: TRANSPORT INFORMATION

49CFR

Not dangerous goods / not hazardous material

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### IMDG

|                      |                                                                               |
|----------------------|-------------------------------------------------------------------------------|
| UN number            | 3077                                                                          |
| Class                | 9                                                                             |
| Packaging group      | III                                                                           |
| Marine pollutant     | YES                                                                           |
| Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,<br>N.O.S.<br>(INDAZIFLAM MIXTURE) |

### IATA

|                          |                                                                                |
|--------------------------|--------------------------------------------------------------------------------|
| UN number                | 3077                                                                           |
| Class                    | 9                                                                              |
| Packaging group          | III                                                                            |
| Environm. Hazardous Mark | YES                                                                            |
| Proper shipping name     | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,<br>N.O.S.<br>(INDAZIFLAM MIXTURE ) |

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

|                         |                                                                                                                       |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Freight Classification: | COMPOUNDS, TREE OR WEED KILLING, N.O.I. other than<br>poison, HAVING A DENSITY OF 20 LBS OR GREATER PER<br>CUBIC FOOT |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------|

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## SECTION 15: REGULATORY INFORMATION

**EPA Registration No.** 432-1523

### US Federal Regulations

#### TSCA list

|                                   |            |
|-----------------------------------|------------|
| Bentonite                         | 1302-78-9  |
| 2-methylpentane-2,4-diol          | 107-41-5   |
| Propyl-S-(-)-2-Hydroxy Propionate | 53651-69-7 |

### US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

No export notification needs to be made.

### SARA Title III - Section 302 - Notification and Information

Not applicable.

### SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

### US States Regulatory Reporting

#### CA Prop65

WARNING: This product contains a chemical known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

|                                 |            |
|---------------------------------|------------|
| Crystalline quartz (respirable) | 14808-60-7 |
|---------------------------------|------------|

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This product does not contain any substances known to the State of California to cause reproductive harm.

### US State Right-To-Know Ingredients

2-methylpentane-2,4-diol 107-41-5 CA, MN, RI

None.

## SECTION 16: OTHER INFORMATION

### Abbreviations and acronyms

|         |                                                                       |
|---------|-----------------------------------------------------------------------|
| 49CFR   | Code of Federal Regulations, Title 49                                 |
| ACGIH   | US. ACGIH Threshold Limit Values                                      |
| ATE     | Acute toxicity estimate                                               |
| CAS-Nr. | Chemical Abstracts Service number                                     |
| CERCLA  | Comprehensive Environmental Response, Compensation, and Liability Act |
| EINECS  | European inventory of existing commercial substances                  |
| ELINCS  | European list of notified chemical substances                         |
| IARC    | International Agency for Research on Cancer                           |
| IATA    | International Air Transport Association                               |
| IMDG    | International Maritime Dangerous Goods                                |
| N.O.S.  | Not otherwise specified                                               |
| NTP     | US. National Toxicology Program (NTP) Report on Carcinogens           |
| OECD    | Organization for Economic Co-operation and Development                |
| TDG     | Transportation of Dangerous Goods                                     |
| TWA     | Time weighted average                                                 |
| UN      | United Nations                                                        |
| WHO     | World health organisation                                             |

### NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 1 Instability - 0 Others - none

### HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1 Flammability - 1 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

**Reason for Revision:** The following sections have been revised: Section 2: Hazards Identification. Section 3: Composition / Information on Ingredients. Section 8: Exposure Controls / Personal Protection. Section 11: Toxicological Information. Section 14: Transport Information. Reviewed and updated for general editorial purposes.

**Revision Date:** 05/22/2020

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