

ALLIGARE

ROTARY 2 SL

Specimen Label

Alligare Rotary 2 SL controls undesirable vegetation in forestry use sites managed for timber production, including forest roads. **Alligare Rotary 2 SL** may be used on 1) forestry sites that contain temporary surface water in areas caused by forest management activities; 2) to treat drainage ditches (edges only if water is present), intermittent drainage, intermittently flooded low lying sites, seasonally dry flood plains and transitional areas between upland and lowland sites when no water is present; and 3) be applied to marshes, swamps and bogs after water has receded, as well as seasonally dry flood deltas, except in the states of California and New York

ACTIVE INGREDIENT: Isopropylamine salt of Imazapyr (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid)*27.8%
OTHER INGREDIENTS72.2%
TOTAL100.0%

*Equivalent to 22.6% (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid) or 2 pounds acid per gallon.

EPA Reg. No. 81927-6

(BT) EPA Est. No. 37429-GA-001

(A) EPA Est. No. 11603-ISR-001

KEEP OUT OF REACH OF CHILDREN CAUTION!/PRECAUCIÓN!

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

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

FIRST AID	
If swallowed	<ul style="list-style-type: none">• Call a poison control center or doctor immediately for treatment advice.• Have person sip a glass of water if able to swallow.• DO NOT induce vomiting unless told to do so by a poison control center or doctor.• DO NOT give anything by mouth to an unconscious person.
If on skin	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15-20 minutes.• Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye.• Call a poison control center or doctor for treatment advice.
If inhaled	<ul style="list-style-type: none">• 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 poison control center or doctor for further treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. For medical emergencies involving this product, call 1-800-424-9300.	

PRECAUTIONARY STATEMENTS HAZARDS TO HUMAN

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

PERSONAL PROTECTIVE EQUIPMENT (PPE):

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

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, butyl rubber or polyethylene
- Shoes plus socks

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

USER SAFETY RECOMMENDATIONS

- Users should:
1. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
 2. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
 3. 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.

ENVIRONMENTAL HAZARDS

DO NOT apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment washwaters or rinsate. This herbicide is phytotoxic at extremely low concentrations. Non-target plants may be adversely affected from drift.

PHYSICAL AND CHEMICAL HAZARDS

Spray solutions of **Alligare Rotary 2 SL** should be mixed, stored, and applied only in stainless steel, fiberglass, plastic, and plastic-lined steel containers.

DO NOT mix, store, or apply **Alligare Rotary 2 SL** or spray solutions of **Alligare Rotary 2 SL** in unlined steel (except stainless steel) containers or spray tanks.

DIRECTIONS FOR USE

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

DO NOT apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

GENERAL INFORMATION

Alligare Rotary 2 SL is an aqueous solution intended to be mixed with water, diesel oil, or recommended seed oils and penetrating oils for various applications to control undesirable vegetation in forestry sites managed for timber production. It can be used along forestry roads, for site preparation, for conifer release from woody and herbaceous competition, and for stump and cut-stem treatment of unwanted woody vegetation. **Alligare Rotary 2 SL** may also be applied on forestry sites where temporary surface water may collect, such as in potholes, between planting beds, in equipment ruts, etc., created by forest management activities, **except in the states of California and New York.** **Alligare Rotary 2 SL** may be used to control undesirable vegetation along non-irrigation ditch banks and for the establishment and maintenance of wildlife openings, **except in the state of California.**

Alligare Rotary 2 SL may be used to treat drainage ditches, intermittent drainage, intermittently flooded low lying sites, seasonally dry flood plains and transitional areas between upland and lowland sites when no water is present, **except in the states of California and New York.** If drainage ditches contain water, only the edges of the ditch may be treated. **Alligare Rotary 2 SL** may also be applied to marshes, swamps and bogs after water has receded, as well as seasonally dry flood deltas, **except in the states of California and New York.**

DO NOT APPLY to natural or man-made bodies of water such as lakes, reservoirs, ponds, streams, rivers and canals.

Alligare Rotary 2 SL controls vegetation by absorption through foliage and roots, from which it is rapidly translocated rapidly throughout the plant, where it accumulates in rapidly-growing meristematic tissue. Treated plants stop growing soon after spray treatment. Chlorosis (yellowing of plant tissue) first appears in the newest leaves and necrosis spreads from this point. In perennials, **Alligare Rotary 2 SL** is translocated into and kills the roots and underground storage tissues to prevent most regrowth. Chlorosis and tissue necrosis may not be apparent in some plant species for several weeks after application and may take months for various woody plants, brush and trees.

IMPORTANT

DO NOT use on food or feed crops. **DO NOT** use on Christmas trees. **DO NOT** apply to the inside of ditches used to transport irrigation water. Keep away from fertilizers, insecticides, fungicides, and seeds. **DO NOT** apply or drain or flush equipment on or near desirable plants, or onto areas where their roots may extend, or in locations where the chemical may be washed or moved into contact within their dripline.

Clean application equipment immediately after using this product. Flush tank, pump, hoses and booms with several charges of water after removing nozzle tips and screens. Clean nozzle tips and screens separately.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard. The requirements in this box apply to use on trees being grown for sale or other commercial use, or for commercial seed production, or for production of timber or wood products, or for research purposes.

DO NOT enter or allow worker entry into treated areas during the restricted entry interval (REI) of **12 hours.**

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves, such as barrier laminate, butyl rubber or polyethylene
- Shoes plus socks

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 applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Noncrop weed control is not within the scope of the Worker Protection Standard. See the GENERAL INFORMATION section of this label for a description of noncrop sites.

DO NOT enter treated areas without protective clothing until sprays have dried.

SPRAY DRIFT MANAGEMENT

The following information is provided as general guidance for managing spray drift. Specific use recommendations for **Alligare Rotary 2 SL** may differ, depending on the application technique used and the vegetation management objective.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

Spray drift from applying this product may result in damage to sensitive plants adjacent to the treatment area. Only apply this product when the potential for drift to these and other adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or non-target crops) is minimal. **DO NOT** apply when the following conditions exist that increase the likelihood of spray drift from intended targets: high or gusty winds, high temperatures, low humidity, temperature inversions.

To minimize spray drift, the applicator should be familiar with and take into account the following drift reduction advisory information. Additional information may be available from state enforcement agencies or the Cooperative Extension on the application of this product.

The best drift management strategy and most effective way to reduce drift potential are to apply large droplets that provide sufficient coverage and control. 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**, below).

Controlling Droplet Size:

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** – **DO NOT** exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** – Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is recommended practice. Significant deflection from the horizontal will reduce droplet size and increase drift potential.
- **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. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift. **DO NOT** use nozzles producing a mist droplet spray.

Application Height: Making applications at the lowest possible height (aircraft, ground driven spray boom) that is safe and practical reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the application equipment (e.g. aircraft, ground) upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller droplets, etc.).

Wind: Drift potential is lowest between wind speeds of 3-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 3 mph due to variable wind direction and high inversion potential. **NOTE:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud, which can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures 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.

Wind Erosion: Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or

irrigation.

Aerial Application Methods and Equipment: Use 2 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated areas and to avoid spray drift.

Managing spray drift from aerial applications: Applicators must follow these requirements to avoid off-target drift movement: 1) boom length – the distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor, 2) nozzle orientation – nozzles must always point backward parallel with the air stream and never be pointed downward more than 45 degrees, and 3) application height – without compromising aircraft safety, applications should be made at a height of 10 feet or less above the crop canopy or tallest plants. Applicators must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.

Ground Application (Broadcast): Use 5 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

WEEDS CONTROLLED

Alligare Rotary 2 SL provides postemergence control and some residual control of the following target weed species. Degree of control is both species and rate dependent.

GRASSES

The species of annual and perennial grasses controlled by **Alligare Rotary 2 SL** include the following:

Annual bluegrass (*Poa annua*)
 Bahiagrass (*Paspalum notatum*)
 Barnyardgrass (*Echinochloa crus-galli*)
 Beardgrass (*Andropogon* spp.)
 Bermudagrass (*Cynodon dactylon*)
 Big bluestem (*Andropogon gerardii*)
 Broadleaf signalgrass (*Brachiaria platyphylla*)
 Canada bluegrass (*Poa compressa*)
 Cattail (*Typha* spp.)
 Cheat (*Bromus secalinus*)
 Cogongrass (*Imperata cylindrica*)
 Crabgrass (*Digitaria* spp.)
 Crowfootgrass (*Dactyloctenium aegyptium*)
 Dallisgrass (*Paspalum dilatatum*)
 Downy brome (*Bromus tectorum*)
 Fall panicum (*Panicum dichotomiflorum*)
 Feathertop (*Pennisetum villosum*)
 Fescue (*Festuca* spp.)
 Foxtail (*Setaria* spp.)
 Giant reed (*Arundo donax*)
 Goosegrass (*Eleusine indica*)
 Guineagrass (*Panicum maximum*)
 Italian ryegrass (*Lolium multiflorum*)
 Itchgrass (*Rottboellia exaltata*)
 Johnsongrass (*Sorghum halepense*)
 Junglerice (*Echinochloa colonum*)
 Kentucky bluegrass (*Poa pratensis*)
 Lovegrass (*Eragrostis* spp.)
 Orchardgrass (*Dactylis glomerata*)
Panicum spp.
 Paragrass (*Brachiaria mutica*)
 Phragmites (*Phragmites australis*)
 Prairie cordgrass (*Spartina pectinata*)
 Prairie threeawn (*Aristida oligantha*)
 Quackgrass (*Agropyron repens*)
 Reed canary grass (*Phalaris arundinacea*)
 Saltgrass (*Distichlis stricta*)
 Sand dropseed (*Sporobolus cryptandrus*)
 Sandbur (*Cenchrus* spp.)
 Smooth brome (*Bromus inermis*)
 Sprangletop (*Leptochloa* spp.)
 Timothy (*Phleum pratense*)
 Torpedograss (*Panicum repens*)
 Vaseygrass (*Paspalum urvillei*)
 Wild barley (*Hordeum* spp.)
 Wild oats (*Avena fatua*)
 Wirestem muhly (*Muhlenbergia frondosa*)
 Witchgrass (*Panicum capillare*)
 Woolly cupgrass (*Eriochloa villosa*)

¹Use minimum of 48 oz per acre.

BROADLEAF WEEDS

The species of annual and perennial broadleaf weeds controlled by **Alligare Rotary 2 SL** include the following:

Arrowweed (*Pluchea sericea*)
 Broom snakeweed (*Gutierrezia sarothrae*)
 Bull Thistle (*Cirsium vulgare*)
 Burclover (*Medicago* spp.)
 Burdock (*Arctium* spp.)
 Camphorweed (*Heterotheca subaxillaris*)
 Carolina geranium (*Geranium carolinianum*)
 Carpetweed (*Mullugo verticillata*)

Chickweed, mouseear (*Cerastium vulgatum*)
 Clover (*Trifolium* spp.)
 Cocklebur (*Xanthium strumarium*)
 Common chickweed (*Stellaria media*)
 Common ragweed (*Ambrosia artemisiifolia*)
 Cudweed (*Gnaphalium* spp.)
 Dandelion (*Taraxacum officinale*)
 Desert camelthorn (*Alhagi pseudalhagi*)
 Diffuse knapweed (*Centaurea diffusa*)
 Dock (*Rumex* spp.)
 Dogfennel (*Eupatorium capillifolium*)
 Fiddleneck (*Amsinckia intermedia*)
 Filaree (*Erodium* spp.)
 Fleabane (*Erigeron* spp.)
 Giant ragweed (*Ambrosia trifida*)
 Goldenrod (*Solidago* spp.)
 Gray rabbitbrush (*Chrysothamnus nauseosus*)
 Henbit (*Lamium alexicaule*)
 Hoary vervain (*Verbena stricta*)
 Horsetweed (*Coryza canadensis*)
 Indian mustard (*Brassica juncea*)
 Japanese bamboo/knotweed (*Polygonum cuspidatum*)
 Knotweed, prostrate (*Polygonum aviculare*)
 Kochia (*Kochia scoparia*)
 Lambsquarters (*Chenopodium album*)
 Little mallow (*Malva parviflora*)
 Milkweed (*Asclepias* spp.)
 Miners lettuce (*Montia perfoliata*)
 Mullein (*Verbascum* spp.)
 Nettleleaf goosefoot (*Chenopodium murale*)
 Oxeye daisy (*Chrysanthemum leucanthemum*)
 Pepperweed (*Lepidium* spp.)
 Pigweed (*Amaranthus* spp.)
 Plantain (*Plantago* spp.)
 Pokeweed (*Phytolacca americana*)
 Primrose (*Oenothera kunthiana*)
 Puncturevine (*Tribulus terrestris*)
 Purple loosestrife (*Lythrum scabrum*)
 Purslane (*Portulaca* spp.)
 Pusley, Florida (*Richardia scabra*)
 Rocket, London (*Sisymbrium irio*)
 Rush skeletonweed (*Chondrilla juncea*)
 Russian knapweed (*Centaurea repens*)
 Russian thistle (*Salsola kali*)
 Saltbush (*Atriplex* spp.)
 Shepherd's purse (*Capsella bursa-pastoris*)
 Silverleaf nightshade (*Solanum elaeagnifolium*)
 Smartweed (*Polygonum* spp.)
 Sorrell (*Rumex* spp.)
 Sowthistle (*Sonchus* spp.)
 Spurge, annual (*Euphorbia* spp.)
 Stinging nettle (*Urtica dioica*)
 Sunflower (*Helianthus* spp.)
 Sweet clover (*Melilotus* spp.)
 Tansymustard (*Descurainia pinnata*)
 Texas thistle (*Cirsium texanum*)
 Velvetleaf (*Abutilon theophrasti*)
 Western ragweed (*Ambrosia psilostachya*)
 Wild carrot (*Daucus carota*)
 Wild lettuce (*Lactuca* spp.)
 Wild parsnip (*Pastinaca sativa*)
 Wild turnip (*Brassica campestris*)
 Wollyleaf bursage (*Ambrosia grayi*)
 Yellow starthistle (*Centaurea solstitialis*)
 Yellow woodsorrel (*Oxalis stricta*)

VINES AND BRAMBLES

Alligare Rotary 2 SL controls the following species of vines and brambles:

Field bindweed (*Convolvulus arvensis*)
 Hedge bindweed (*Calystegia sepium*)
 Honeysuckle (*Lonicera* spp.)
 Morningglory (*Ipomoea* spp.)
 Poison ivy (*Rhus radicans*)
 Redvine (*Brunnichia cirrhosa*)
 Trumpet creeper (*Campsis radicans*)
 Virginia creeper (*Parthenocissus quinquefolia*)
 Wild buckwheat (*Polygonum convolvulus*)
 Wild grape (*Vitis* spp.)
 Wild rose (*Rosa* spp.)
 Including Multiflora rose (*Rosa multiflora*)
 Macartney rose (*Rosa bracteata*)

¹Use higher labeled rates.

WOODY BRUSH AND TREES

Woody brush and trees controlled by **Alligare Rotary 2 SL** include the following:

Alder (*Alnus* spp.)
 American beech (*Fagus grandifolia*)
 Ash (*Fraxinus* spp.)
 Aspen (*Populus* spp.)
 Australian pine (*Casuarina equisetifolia*)
 Autumn olive (*Elaeagnus umbellata*)

Bald cypress (*Taxodium distichum*)
 Bigleaf maple (*Acer macrophyllum*)
 Birch (*Betula* spp.)
 Black locust (*Robinia pseudoacacia*)
 Black oak (*Quercus kelloggii*)
 Blackgum (*Nyssa sylvatica*)
 Boxelder (*Acer negundo*)
 Brazilian peppertree (*Schinus terebinthifolius*)
 Ceanothis (*Ceanothis* spp.)
 Cherry (*Prunus* spp.)^{1,2}
 Chinaberry (*Melia azedarach*)
 Chinese tallow-tree (*Sapium sebiferum*)
 Chinquapin (*Castanopsis chrysophylla*)
 Cottonwood (*Populus* spp.)
 Cypress (*Taxodium* spp.)
 Dogwood (*Cornus* spp.)
 Elderberry (*Sambucus* spp.)
 Elm (*Ulmus*)
 Eucalyptus (*Eucalyptus* spp.)
 Hawthorn (*Crataegus* spp.)
 Hazel (*Corylus comuta*)
 Hickory (*Carya* spp.)
 Holly (*Ilex* spp.)^{1,4}
 Including Gallberry (*Ilex glabra*)^{4,5}
 Tall gallberry (*Ilex coriacea*)
 Yaupon (*Ilex vomitoria*)
 Honeylocust (*Gleditsia triacanthos*)
 Huckleberry (*Gaylussacia* spp.)
 Lyonia spp.
 Including Fetterbush (*Lyonia lucida*)
 Staggerbush (*Lyonia mariana*)
 Madrone (*Arbutus menziesii*)
 Manzanita, greenleaf (*Arctostaphylos patula*)
 Maple (*Acer* spp.)
 Melaleuca (*Melaleuca quinquenervia*)
 Mulberry (*Morus* spp.)^{1,3}
 Oak (*Quercus* spp.)^{1,3}
 Persimmon (*Diospyros virginiana*)
 Poison oak (*Rhus diversiloba*)
 Popcorn-tree (*Sapium sebiferum*)
 Poplar (*Populus* spp.)
 Privet (*Ligustrum vulgare*)
 Red alder (*Alnus rubra*)
 Red maple (*Acer rubrum*)
 Saltcedar (*Tamarix pentandra*)
 Sassafras (*Sassafras albidum*)
 Scotch broom (*Cytisus scoparius*)
 Sourwood (*Oxydendrum arboreum*)
 Sumac (*Rhus* spp.)
 Sweetbay magnolia (*Magnolia virginiana*)^{4,5}
 Sweetgum (*Liquidambar styraciflua*)
 Sycamore (*Platanus occidentalis*)
 Tanoak (*Lithocarpus densiflorus*)^{4,5}
 Titi (*Cyrtilla racemiflora*)^{1,4}
 Tree of heaven (*Ailanthus altissima*)
 Vaccinium spp.
 Including Blueberry (*Vaccinium* spp.)
 Sparkleberry (*Vaccinium arboreum*)
 Waxmyrtle (*Myrica californica*)^{4,5}
 (*Myrica cerifera*)^{4,5}
 Willow (*Salix* spp.)
 Yellow poplar (*Linodendron tulipifera*)

¹Use higher labeled rates

²Best control with applications prior to formation of fall leaf color

³The degree of control may be species dependent

⁴Oil emulsion carrier is recommended

⁵Tank-mix with Garlon 4 or Triclopyr 4 EC as a basal or cut stump treatment

MIXING AND APPLICATION INSTRUCTIONS FOR SITE PREPARATION

Enhanced brownout for burning and improved control of brush and grasses may be achieved by applying **Alligare Rotary 2 SL** in an oil emulsion carrier containing 12 to 50% (by volume) recommended oil diluent. Methylated or ethylated seed oils containing at least 50% esterified seed oil by volume are also recommended. Thoroughly mix **Alligare Rotary 2 SL** into the water portion of the carrier, then add the oil and continue mixing to obtain a uniform emulsion. Use the higher label rates of **Alligare Rotary 2 SL** and higher spray volumes when applying to particularly dense or multi-layered canopies of hardwood stands, or difficult-to-control species. Make applications during the growing season, beginning in the spring after full leaf expansion of the target weed or brush has occurred and complete applications before leaf drop in the fall.

Tank mixes may be necessary for chemical control of conifers and other species that are tolerant to **Alligare Rotary 2 SL**. Observe all precautions and restrictions on the product labels. Always follow the most restrictive label. Combinations with other products labeled for forest site preparation may kill certain plants such as legumes and blackberry which are desirable for wildlife habitat.

Before tank-mixing **Alligare Rotary 2 SL** with other products, herbicides, carrier oils, etc., always test compatibility in small containers first. Maintain adequate agitation with all **Alligare Rotary 2 SL** emulsion mixtures to prevent phase separation.

DO NOT plant seedlings of black spruce (*Picea mariana*) or white spruce (*Picea glauca*) on sites to which **Alligare Rotary 2 SL** has been broadcast for site preparation or into the treat-

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ed zone of spot or banded treatments for three months following application or injury may occur.

Helicopter Spray Equipment: Thoroughly mix the recommended amount of **Alligare Rotary 2 SL** in 5 to 20 gallons total spray carrier per acre and apply uniformly with properly calibrated helicopter equipment. Use a nonionic surfactant to improve weed control. A drift control agent may be used at its recommended label rate. An anti-foam agent may be added, if needed. Exercise all precautions to minimize or eliminate spray drift. Avoid applications during windy or gusty conditions. Use of a Microfoil™ boom, Thru-Valve™ boom, raindrop nozzles, controlled droplet booms and nozzle configurations is recommended. Maintain adequate buffer zones to minimize potential impacts to desirable vegetation.

IMPORTANT: DO NOT make applications by fixed wing aircraft.

Thoroughly clean mixing and application equipment by thoroughly flushing with water immediately after using this product. Prolonged exposure of uncoated/unpainted steel (except stainless steel) surfaces to this product may result in corrosion and failure of the exposed part. Maintaining painted surfaces may prevent corrosion.

Ground Equipment: Thoroughly mix and apply the recommended amount of **Alligare Rotary 2 SL** in 5 to 40 gallons total spray carrier per acre for mechanical or backpack applications. Use a nonionic surfactant to enhance weed control. A drift control agent and an anti-foam agent may also be added at the recommended label rates, if needed. If desired, a spray pattern indicator may be used at the recommended label rate. To minimize spray drift, select proper nozzles to avoid spraying a fine mist, use pressures less than 50 psi and **DO NOT** spray under gusty or windy conditions (also refer to **SPRAY DRIFT MANAGEMENT** section). Maintain adequate buffer zones to minimize potential impacts to desirable vegetation.

For best results, apply the spray solution to uniformly cover the foliage of the undesirable vegetation to be controlled.

Clean mixing and application equipment immediately after using this product by thoroughly flushing with water.

CONIFER SITE PREPARATION TREATMENTS

Alligare Rotary 2 SL will control the grasses, broadleaf weeds, vines and brambles, and woody brush and trees listed above when applied as a forest site preparation treatment before planting the following conifer crop species:

Crop Species	Rate (fl oz/A)
Loblolly Pine (<i>Pinus taeda</i>)	48-80
Loblolly X Pitch Hybrid	48-80
Longleaf Pine (<i>Pinus palustris</i>)	48-80
Shortleaf Pine (<i>Pinus echinata</i>)	48-80
Virginia Pine (<i>Pinus virginiana</i>)	48-80
Slash Pine (<i>Pinus elliotii</i>)	40-64
Douglas-Fir (<i>Pseudotsuga menziesii</i>)	24-48
Western Hemlock (<i>Tsuga heterophylla</i>)	24-48
Coastal Redwood (<i>Sequoia sempervirens</i>)	24-48
California Red Fir (<i>Abies magnifica</i>)	24-40
California White Fir (<i>Abies concolor</i>)	24-40
Jack Pine (<i>Pinus banksiana</i>)	24-32
Lodgepole Pine (<i>Pinus contorta</i>)	24-32
Pitch Pine (<i>Pinus rigida</i>)	24-32
Ponderosa Pine (<i>Pinus ponderosa</i>)	24-32
Sugar Pine (<i>Pinus lambertiana</i>)	24-32
White Pine (<i>Pinus strobus</i>)	24-32
Black Spruce (<i>Picea mariana</i>)	24-32
Red Spruce (<i>Picea rubens</i>)	24-32
White Spruce (<i>Picea glauca</i>)	24-32

Broadcast the recommended rate of **Alligare Rotary 2 SL** per acre as a foliar spray for long-term control of the labeled woody plants and residual control of herbaceous weeds. Herbaceous grasses and broadleaf weeds will be controlled within 4-6 weeks after treatment and may provide fuel to facilitate a site preparation burn, if desired, to control conifers or other species tolerant to the herbicide.

For tracts to be planted with loblolly, loblolly x pitch hybrid, longleaf pine, shortleaf pine, Virginia pine and slash pine, apply **Alligare Rotary 2 SL** at 64 fl oz/A on areas that have little to no re-sprouting vegetation following recent management activities such as harvesting, mechanical shearing, burning, piling or bedding. Apply this treatment after September 1.

HARDWOOD SITE PREPARATION TREATMENTS

For site preparation before planting hardwood species in the southeast and gulf coast states (Virginia to Texas), apply **Alligare Rotary 2 SL** at 48 fl oz/A before the end of July. Application in an emulsion carrier with a minimum of 12% oil is recommended. To avoid injury to hardwood seedlings planted after the site preparation treatment, **DO NOT** plant hardwood seedlings before January of the year following site preparation.

DIRECTED FOLIAR APPLICATIONS FOR CONIFER RELEASE

Apply **Alligare Rotary 2 SL** as a directed spray using water or oil emulsion carrier to control and suppress the labeled brush and weed species. Directed sprays may be made using low carrier volumes (typically 10 gallons total finished spray per acre or less) in stands of conifers (see below) of all ages by targeting the unwanted vegetation and avoiding spray contact to the conifers. **DO NOT** exceed the maximum rates listed for the conifer species below.

Crop Species	Rate (fl. oz/Acre)
Loblolly Pine (<i>Pinus taeda</i>)	24-40
Loblolly X Pitch Hybrid	24-40
Virginia Pine (<i>Pinus virginiana</i>)	24-40
Longleaf Pine (<i>Pinus palustris</i>)	24-32

Pitch Pine (<i>Pinus rigida</i>)	24-32
Shortleaf Pine (<i>Pinus echinata</i>)	24-32
Slash Pine (<i>Pinus elliotii</i>)	24-32
White Pine (<i>Pinus strobus</i>)	16-32
Lodgepole Pine (<i>Pinus contorta</i>)	16-24
Douglas-Fir (<i>Pseudotsuga menziesii</i>)	16-24
Jack Pine (<i>Pinus banksiana</i>)	12-24
Black Spruce (<i>Picea mariana</i>)	12-24
Red Spruce (<i>Picea rubens</i>)	12-24
White Spruce (<i>Picea glauca</i>)	12-24

Generally, for directed or spot spray foliar applications, use 10% **Alligare Rotary 2 SL** in water. For brush species with thick leaf cuticles or difficult-to-control species, apply **Alligare Rotary 2 SL** in an oil emulsion, using a recommended oil diluent at 12-50% by volume. Apply the spray solution to at least 2/3 of each hardwood crown using backpack sprayers or hand-held equipment. **DO NOT** spray to the point of runoff and avoid overspray onto conifers. For low volume foliar applications to control big leaf maple, use a 5% (by volume) **Alligare Rotary 2 SL** solution or emulsion.

Some minor conifer growth inhibition (height) may be observed when release treatments are made during periods of active conifer growth. To minimize potential growth inhibition, apply conifer release treatments late in the growing season after formation of conifer resting buds. To avoid potential conifer injury, **DO NOT** apply **Alligare Rotary 2 SL** when conifers are under stress that may reduce plant vigor due to drought, diseases, animal or winter injury, etc.

Avoid direct spray contact to desired plant species as injury may occur. Injury may occur to non-target or desirable hardwoods or conifers if they extend from the same root system or their root systems are grafted to those of treated trees or if their roots extend into the treated zone.

BAG AND BROADCAST APPLICATIONS FOR CONIFER RELEASE

In Douglas-fir and Ponderosa pine stands, broadcast **Alligare Rotary 2 SL** at up to 32 fl oz/A when the trees have been covered with bags before application to prevent overspray onto conifer foliage. For improved control of brush species, particularly evergreens, add a suitable seed oil at 5-12% (by volume) to the spray solution. **DO NOT** use this treatment on sites with coarse-textured soils (e.g. decomposed granite, pumice, sandy or rocky sites) or low levels of soil organic matter (generally 5% or less) unless substantial conifer growth inhibition and/or mortality is acceptable.

LATE ROTATION VEGETATION CONTROL IN WESTERN CONIFERS

In California, the Pacific Northwest and inland Northwest, **Alligare Rotary 2 SL** may be applied aerially at up to 48 fl oz/A in at least 15 GPA to conifer stands intended for harvesting the year following treatment. For improved control of brush species, particularly evergreens, add a suitable seed oil at 5-12% (by volume) to the spray solution. **DO NOT** use this treatment if conifer injury or mortality is unacceptable, since substantial conifer injury or mortality can occur.

UNDERSTORY BROADCAST APPLICATIONS FOR MID-ROTATION RELEASE

Alligare Rotary 2 SL may be broadcast by ground or hand held equipment to control understory brush and suppress undesirable trees below the conifer canopy within stands of the species listed below. Apply **Alligare Rotary 2 SL** in water or oil emulsion carrier so as to minimize spray contact to the crowns of crop trees. **DO NOT** exceed the maximum rates listed for the conifer species below.

Crop Species	Maximum Rate (fl. oz/Acre)
Loblolly Pine (<i>Pinus taeda</i>)	64
Loblolly X Pitch Hybrid	64
Virginia Pine (<i>Pinus virginiana</i>)	64
Longleaf Pine (<i>Pinus palustris</i>)	32
Pitch Pine (<i>Pinus rigida</i>)	32
Shortleaf Pine (<i>Pinus echinata</i>)	32
Slash Pine (<i>Pinus elliotii</i>)	32

CUT STUMP TREATMENTS

Mixing: Mix 8-16 fl oz of **Alligare Rotary 2 SL** in one gallon of water, diesel oil, or penetrating oil. **Alligare Rotary 2 SL** may be tank-mixed with Garlon® 3A or Triclopyr 3A, Garlon 4 or Triclopyr 4 EC, Tordon® K or Picloram K, Escort® or Metsulfuron Methyl DF, or Roundup® to control labeled species. If temperatures are such that freezing of the spray mixture may occur, antifreeze (ethylene glycol) may be added according to manufacturer's label to prevent freezing. The use of a surfactant or penetrating agent may improve uptake through partially callused cambium tissue.

Application: Spray or brush the **Alligare Rotary 2 SL** solution onto the cambium area of the freshly cut target stumps. Thoroughly wet the entire cambium area (the wood next to the bark of the stump). Applications can be made anytime during the year except during periods of heavy sap flow in the spring. **DO NOT** over apply so as to cause run-off or puddling of spray solution.

TREE INJECTION TREATMENTS

No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is directly injected into agricultural plants.

Mixing: Mix 8-12 fl oz of **Alligare Rotary 2 SL** in one gallon of water. If temperatures are such that freezing of the spray mixture may occur, antifreeze (ethylene glycol) may be added according to manufacturer's label to prevent freezing.

Application: Use standard injection equipment to apply 1 mL of **Alligare Rotary 2 SL** solution at each injection site around the tree with no more than one inch intervals between cut edges. Insure that the injector completely penetrates the bark at each injection site.

FRILL OR GIRDLE TREATMENTS

Mixing: Mix 8.0-12.0 fluid ounces of **Alligare Rotary 2 SL** in one gallon of water, diesel oil, or a penetrating oil. If temperatures are such that freezing of the spray mixture may occur,

ROTARY 2 SL

Specimen Label

antifreeze (ethylene glycol) may be added according to manufacturer's label to prevent freezing.

Application: Use a hatchet, machete, or similar implement to make cuts through the bark around the tree at intervals no more than two inches between cut edges. Spray or brush **Alligare Rotary 2 SL** solution into each cut until thoroughly wet.

THINLINE BASAL AND STEM APPLICATIONS

Mixing: Mix 24-48 fl oz of **Alligare Rotary 2 SL** in one gallon of diesel oil or penetrating oil. Maintain uniform mixtures with frequent agitation.

Application: Apply **Alligare Rotary 2 SL** as a thinline basal or arcing application to the stems of susceptible species such as big leaf maple (*Acer macrophyllum*), willow (*Salix* spp.) and Eucalyptus (*Eucalyptus* spp.) with a stem ground line diameter of 3 inches or less. Direct a thin line of **Alligare Rotary 2 SL** oil mixture to the stems beginning a few feet from the ground and descending toward the base of the tree making a zig-zag motion. **DO NOT** over-apply so as to cause run-off or puddling of spray solution.

LOW VOLUME BASAL BARK TREATMENTS

Mixing: Mix 8-12 fl oz of **Alligare Rotary 2 SL** in one gallon of diesel oil or penetrating oil. Maintain uniform mixtures with frequent agitation.

Application: For mixed brush species with up to 4 inch stem diameter at breast height, apply **Alligare Rotary 2 SL** oil mixture to wet the lower 12-18 inches of stems, including the root collar area. **DO NOT** over-apply so as to cause run-off or puddling of spray solution.

LOW VOLUME FOLIAR APPLICATIONS

Mixing: Mix 3-5% **Alligare Rotary 2 SL** in water and adjuvant or in penetrating oil.

Application: For small brush, apply **Alligare Rotary 2 SL** down onto the crown to cover approximately 70% of the plant foliage. For larger brush apply **Alligare Rotary 2 SL** to thoroughly cover the crown and at least two sides of the plant. Use the higher rate of **Alligare Rotary 2 SL** (5%) in areas containing sassafras, oak, hickory, cherry, and maples or in the southern 2/3's of the U.S. A tank-mix of 3% **Alligare Rotary 2 SL** + Garlon 4 or Triclopyr 4 EC is effective in the Northeastern U.S. To control black locust, honey locust, hackberry, elms and other species listed on both the **Alligare Rotary 2 SL** and Garlon 4 or Triclopyr 4 EC labels. Apply a tank-mix of 3-5% **Alligare Rotary 2 SL** plus 15-20% Garlon 4 or Triclopyr 4 EC in basal oil.

SPRAY SOLUTION MIXING GUIDE FOR LOW VOLUME FOLIAR APPLICATIONS

AMOUNT OF SPRAY SOLUTION BEING PREPARED	DESIRED CONCENTRATION (fluid volume)			
	Alligare Rotary 2 SL		Garlon 4 or Triclopyr 4 EC	
	3%	5%	15%	20%
1 gallon	3.8 oz	6.4 oz	19.2 oz	25.6 oz
3 gallons	11.5 oz	19.2 oz	57.6 oz	76.8 oz
4 gallons	15.4 oz	25.6 oz	76.8 oz	102.4 oz
5 gallons	19.2 oz	32.0 oz	96.0 oz	1.0 gallon
50 gallons	1.5 gallons	2.5 gallons	7.5 gallons	10.0 gallons
100 gallons	3.0 gallons	5.0 gallons	15.0 gallons	20.0 gallons

INVERT EMULSIONS

Alligare Rotary 2 SL can be applied as an invert emulsion, a viscous water-in-oil emulsion intended to minimize spray drift and run-off and to enhance herbicide deposition onto the target foliage. The spray emulsion may be formed in a single tank (batch mixing) or injected (in-line mixing). Consult the invert chemical label for proper mixing directions. **DO NOT** apply more than 3 quarts **Alligare Rotary 2 SL/A**.

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal.
PESTICIDE STORAGE: DO NOT store below 10°F.
PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.
CONTAINER DISPOSAL: FOR 2.5 GALLON AND 30 GALLON: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in an approved sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.
CONTAINER DISPOSAL FOR BULK: When this container is empty, replace the cap and seal all openings that have been opened during use, and return the container to the point of purchase, or to a designated location. This container must only be refilled with the pesticide product. **DO NOT** reuse the container for any other purpose. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling. Disposal of container must be in compliance with state and local regulations.

CONDITIONS OF SALE AND WARRANTY

Upon purchase or use of this product, purchaser and user agree to the following terms:

Warranty: Alligare, LLC (the Company) warrants that this product conforms to the chemical description on the label in all material respects and is reasonably fit for the purpose referred to in the directions for use, subject to the exceptions noted below, which are beyond the Company's control. The Company makes no other representation or warranty, express or implied, concerning the product, including no implied warranty of merchantability or fitness for a particular purpose. No such warranty shall be implied by law, and no agent or representative is authorized to make any such warranty on the Company's behalf.

Terms of Sale: The Company's directions for use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors

as weather conditions, presence of other materials, and the manner of use or application (including failure to adhere to label directions), all of which are beyond the Company's control. To the extent permitted by applicable law, all such risks are assumed by the user.

Limitation of Liability: To the extent permitted by applicable law, the exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damages, and to the extent permitted by applicable law, in no event shall damages or any other recovery of any kind exceed the price of the product which caused the alleged loss, damage, injury or other claim. To the extent permitted by applicable law, under no circumstances shall the Company be liable for any special, indirect, incidental or consequential damages of any kind, including loss of profits or income, and any such claims are hereby waived. Some states do not allow the exclusion or limitation of incidental or consequential damages.

The Company and the seller offer this product, and the purchaser and user accept this product, subject to the foregoing warranty, terms of sale and limitation of liability, which may be varied or modified only by an agreement in writing signed on behalf of the Company by an authorized representative.

Roundup is a registered trademark of Monsanto Company.
Garlon 3A, Garlon 4, and Tordon K are registered trademarks of Dow AgroSciences Company.

Escort is a registered trademark of E.I. DuPont de Nemours and Company.

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