



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

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

May 6, 2019

Sam Ghantous
Emery Oleochemicals, LLC
4900 Este Avenue
Cincinnati, OH 45232

Subject: Non-PRIA (Pesticide Registration Improvement Act) Labeling Amendment –
Amendment to Remove a Cotton Use and to Correct Storage Statements and Typos
Product Name: FL-AN540OP
EPA Registration Number: 87663-13
Application Date: 10/31/18
OPP Decision Number: 545781

Dear Mr. Ghantous:

The amended labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable.

This approval does not affect any terms or conditions that were previously imposed on this registration. You continue to be subject to existing terms or conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one (1) copy of the final printed labeling before you release this product for shipment with the new labeling. In accordance with 40 CFR § 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. “To distribute or sell” is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR § 152.3.

Should you wish to add/retain a reference to your company’s website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the U.S. Environmental Protection Agency (EPA). If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements the EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the EPA find or if it is brought to our attention that a website contains false

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or misleading statements or claims substantially differing from the EPA-approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these terms. If these terms are not complied with, this registration will be subject to cancellation in accordance with FIFRA section 6.

If you have any questions, please contact Chris Pfeifer of my team by phone at (703) 308-0031 or via email at pfeifer.chris@epa.gov.

Sincerely,



Andrew Bryceland, Team Leader
Biochemical Pesticides Branch
Biopesticides and Pollution
Prevention Division (7511P)
Office of Pesticide Programs

Enclosure

ACCEPTED

05/06/2019

Under the Federal Insecticide, Fungicide
and Rodenticide Act as amended, for the
pesticide registered under
EPA Reg. No.
87663-13



FL-AN540OP
(Alternate Brand Name **EMERION® W 40 SL ONC**)

Non-selective Herbicide



MASTER LABEL

SUBLABEL A: FOR AGRICULTURAL USE

FOR CONTACT SPRAY CONTROL OR BURNDOWN OF WEEDS AND GRASSES.
FOR ORNAMENTALS, TURF AND TREES IN AND AROUND FARMS, FORESTS, NURSERIES AND
GREENHOUSES.

SUBLABEL B: FOR COMMERCIAL USE

FOR CONTACT SPRAY CONTROL OR BURNDOWN OF WEEDS AND GRASSES.
FOR USE IN STRUCTURAL PEST CONTROL, CONTROL OF VEGETATION IN PASTURE AND
RANGELAND. FOR USE IN PARKS, GOLF COURSES, GREENHOUSES AND COMMERCIAL TURF
AND GROUNDS

Active ingredient:

Ammonium Nonanoate	40.0 wt.%
Other ingredients	<u>60.0 wt.%</u>
Total	100.00 wt.%

Optional Label Claims:

- Fast Acting
- Acts on Contact
- Acts on Contact to Kill Green Leafy Tissues
- Visible Results in 15 Minutes
- Effective Weed Control in Cooler Climates
- Quicker Action in Warm / Hot Weather Conditions
- Rain Fast in 2 Hours
- For Control or Burndown of Weeds and Grasses.
- Grass and Weed Knockdown
- Controls Annual and Perennial weeds
- Kills 39 different Weeds and Grasses
- Ideal For Spot Weed Control Around Ornamental Trees, Bushes, Flowers and Landscaping Beds
- Ideal for Weed Control Along Walkways and Driveways
- For Turf and Ornamentals Use
- For use in Nurseries and Greenhouses.
- For use in Parks, Golf Courses
- For use in Commercial Turf and Grounds
- Active Ingredient Based on Naturally Derived Fatty Acids
- Quickly Kills Green Plant Tissue on Contact
- Readily Biodegradable
- Will Not Leach Through the Soil to Harm Desirable Plants
- Reseed immediately after use

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FL-AN540OP
Non-selective Herbicide



Active ingredient:

Ammonium Nonanoate	40.0 wt.%
Other ingredients	<u>60.0 wt.%</u>
Total	100.00 wt.%

FL-AN540OP contains 3.3 lbs. of ammonium nonanoate per US gallon

KEEP OUT OF REACH OF CHILDREN

WARNING “AVISO”

“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 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 the 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.
If on skin or clothing	<ul style="list-style-type: none">Take off contaminated clothingRinse skin immediately with plenty of water for 15-20 minutes.Call a poison control center or doctor for treatment advice.

EMERGENCY NUMBER

**FOR 24-HOUR EMERGENCY MEDICAL ASSISTANCE, CALL THE NATIONAL POISON
CONTROL CENTER 1-800-222-1222.**

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

This product is protected by U. S. Patent No. 6,323,156

EPA Reg. No. 87663 - 13

EPA Establishment No. 87663-OH-001, 72038-DE-001, 06574-KY-001, 064784-OK-001, 75822-TN-001

Lot No. XXXXXXXX

Net Contents: 3,4,16 & 32 fl oz, 1, 2.5, 5, 55, 260 & 6000 gals

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Warning. Causes substantial, but temporary eye irritation. Do not get in eyes or on clothing. Wear goggles. Harmful if inhaled. Avoid breathing spray mist. Causes moderate skin irritation. Avoid contact with skin or on 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)

Applicators and other handlers must wear:

- Coveralls worn over short-sleeve shirt and short pants
- Socks and chemical resistant footwear
- Chemical resistant gloves
- Protective eyewear
- When mixing and loading wear a chemical resistant apron

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergents and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

For terrestrial uses: This pesticide is toxic to fish and aquatic invertebrates. Use care when applying in areas adjacent to any body of water. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

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

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 State/Tribal agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 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 worn over short-sleeve shirt and short pants
- Socks and chemical resistant footwear
- Chemical resistant gloves
- Protective eyewear

METHODS OF USE AND GENERAL APPLICATION INSTRUCTIONS

General Instructions:

FL-AN540OP is a contact non-selective herbicide for spray application only to undesirable plant growth. Do not allow spray to contact any green plant parts of desirable plants. **FL-AN540OP** provides control and burndown suppression of annual and perennial broadleaf and grass weeds. Spore producing plants such as mosses and liverworts are also controlled. The amount of burndown and the duration of weed suppression may be reduced when weed growth conditions are unfavorable or when plants are mature.

FL-AN540OP is non-volatile and water soluble for foliar application in tractor powered field-type sprayers or manual pump sprayers. Complete and uniform coverage of weeds by the spray solution is required for the best weed control. Plant foliage will change from a green color to brown/black necrotic tissue within one to two hours after spray application of **FL-AN540OP** diluted with water. **FL-AN540OP** effect on plant tissue may be more rapid in warm weather than in cold conditions. However, weed control is normally unaffected by temperature.

FL-AN540OP herbicide is a soap product which penetrates the cell walls of plants to disrupt the cellular organization of physiological functions which are compartmentalized by membranes within the cell walls. Plant growth ceases when cellular contents are mixed which causes brown necrotic plant tissue.

FL-AN540OP does not migrate through the soil and is not translocated in plants. **To ensure satisfactory control, plant leaves must be thoroughly and uniformly covered with the spray solution. FL-AN540OP** does not provide any residual weed control in soil to affect germinating weed seeds.

Mixing and Application Instructions:

For use, **FL-AN540OP** is diluted with water to the specified concentration for effective control of the undesirable vegetation. Apply using standard methods of liquid herbicide application. Dilution must be in accordance with label instructions. Do not apply this product through any type of irrigation system.

A 12% v/v dilution is recommended for most weed control situations and based on the results, applicators may increase or decrease spray concentrations as discussed in the following text and tables to obtain better control or to reduce herbicide use.

The degree of dilution for application is based on the concentration of active ingredient needed for the size of vegetation to be suppressed or the rate of herbicidal effect desired. The larger the vegetation, the higher the concentration (less dilution of FL-AN540OP) required for rapid action. See required concentration for variously sized weeds and grasses in Dosage and Application Rates Section. Hard to control or suppress weeds (perennial weeds and some grasses) may require several applications for complete control.

Spray equipment options include hand-held, boom sprayers, pressure sprayers and hose-end sprayers. Spray nozzles that produce a uniform spray will give maximum coverage of the leaves and improved weed control. **FL-AN540OP** is completely soluble in water and when uniformly mixed, no additional mixing or agitation is required.

Application Precautions:

- Do not apply to weeds when wet from dew, rain or irrigation.
- Do not irrigate within 2 hours after application
- Do not apply if rainfall is expected within 2 hours.

During application, some foaming may occur; however, weed control is unaffected if the foam is deposited on the plant surface and is not blown away as drift. Foaming can be reduced by using the minimum spray pressure required for a uniform application to the target weeds. Use low spray pressure to reduce foaming and avoid contact with desirable plants. Most spray nozzles are designed to operate at 10 to 15 psi and provide uniform spray coverage of weeds.

Mixing:

Fill sprayer tank with half the required amount of water, add the full amount of **FL-AN540OP** to be used (see Dilution Factors below), then fill the sprayer tank with the remainder of the water required for the desired final concentration. Since **FL-AN540OP** is completely soluble in water and when uniformly dispersed in water, continuous mixing or agitation is not required. **Broadcast Application with Field Sprayer Boom Equipment**

The amount of weed vegetation will determine the spray volume required for complete coverage of undesired plants (weeds). Weed vegetation conditions that affect spray coverage are number of weeds present, leaf shape, weed size and weed species. For weeds of over 1 inch height do not use less than 30 gal/acre. Large weeds of 12 to 18 inch height may require 80 to 125 gal/acre or more for control.

Hand-Held Equipment

Thorough saturation of the foliage and stems is required for control, but stop sprays when run-off from weed leaves occurs. Use low spray pressure to reduce foaming and avoid contact with desirable plants. Most spray nozzles are designed to operate at 10 to 15 psi and provide uniform spray coverage of weeds.

Directed Spray Equipment

Use a shielded sprayer to prevent spray contact on desirable plants. Avoid spray contact of green plant stems or green bark of young trees and shrubs.

NOTE: In areas of hard water, the final mixture may appear milky. This condition does not change the effectiveness of the treatment. Some visible foam may appear on the leaves as the plants are sprayed. Overspray or drift onto desirable plants is usually not a serious problem because leaves and stems require a thoroughly wet spray coverage for significant injury. Repeat applications as often as necessary to obtain desired control.

Dosage and Application Rates:

For general weed and grass control, rates are based on the size of the plants and/or the desired speed of kill. The larger the plants, the higher the dosage rates needed to ensure maximum herbicidal activity. Also, the higher the concentration, the quicker the plants wilt and turn brown. Apply **FL-AN540OP** spray solutions only when weed surfaces are dry.

The rate table presents the suggested percent volume/volume solutions of **FL-AN540OP** to use for application as follows:

- Use a 6 to 8 % V/V **FL-AN540OP** spray solution for control of annual weeds of 1 inch height or less and for control of liverworts and mosses.
- Use an 8 to 10% V/V **FL-AN540OP** spray solution for control of annual weeds over 1inch height and up to 4 inch height.
- Use a 10 to 13% V/V **FL-AN540OP** spray solution for weeds over 4 inch height and for hard to control weeds.
- A 15% V/V **FL-AN540OP** spray solution is the maximum labeled rate for weed control. Use this rate for hard to control perennial weeds or extremely dense weed growth.

Repeat spray applications as necessary to obtain the desired control or suppression of weeds from newly germinated weed seeds and regrowth from roots or stems.

WEED CONTROL RATE TABLE

Final Spray	Amount of FL-AN540OP for Percent V/V (Volume/Volume) Solution
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Volume (gallons)	6%	8%	10%	13%	15%
1	8 fl oz	10 fl oz	13 fl oz	1 pt	1.2 pt
2	1 pt	1.3 pt	1.6 pt	2 pt	2.4 pt
5	2.5 pt	3.3 pt	4 pt	5 pt	6 pt
10	5 pt	6.5 pt	1 gal	1.3 gal	1.5 gal
20	1.3 gal	1.6 gal	2 gal	2.6 gal	3.0 gal

<u>Height of Plants to be Controlled</u>	<u>Spray Solution (% V/V)</u>
1 inch or less	6 to 8%
1 to 4 inches	8 to 10%
Above 4 inches	10 to 13%

Use Methods

Determine the weed control situation and select the use method required as follows:

- Vegetative Burndown:** Broadcast spray for weed control for no-till planting or seedbed preparation to control weeds prior to seeding or transplanting. Spot sprays may be used in ornamentals and turf.
- Directed and shielded sprays:** Spray nozzle type or configuration for directed spray or a shield placed around the nozzle to prevent spray contact on the foliage or green stems or bark. Directed/shielded spray applications to area between plastic mulch strips and staked crops for weed control.

PESTS

I. Weeds controlled or suppressed by FL-AN540OP:

COMMON NAMES	TAXONOMIC NAMES
Broadleaf Weeds:	
Algae	<i>Gloeo caps a magma</i>
Bittercress, hairy	<i>Cardamine hirsuta</i>
Chickweed, common	<i>Stellaria media</i>
Chickweed, mouse-ear	<i>Cerastium vulgatum</i>
Cocklebur, common	<i>Xanthium strumarium</i>
Corn spurry	<i>Spergula arvensis</i>
Cudweed, purple	<i>Gnaphalium purpureum</i>
Groundsel	<i>Senecio spp.</i>
Lambsquarters, common	<i>Chenopodium album</i>
Liverwort	<i>Machantia spp.</i>
Marestail or Horseweed rosettes	<i>Conyza canadensis</i>
Morningglory, annual	<i>Ipomoea spp.</i>
Moss	<i>Bryophyta</i>
Mustards	<i>Brassica spp.</i>
Oxalis or Woodsorrel	<i>Oxalis stricta</i>
Pansy, wild	<i>Viola tricolor</i>
Plantain	<i>Plantago spp.</i>
Pigweed, smooth and redroot	<i>Amaranthus spp.</i>
Mallow, roundleaved	<i>Malva spp.</i>
Moneywort	<i>Lysimachia nummularia</i>
Shepherdspurse	<i>Capsella bursa-pastoris</i>
Sorrel, sheep	<i>Rumex acetosella</i>
Spurge, spotted	<i>Euphorbia maculata</i>
Field pennycress	<i>Thlaspi arvense</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Grass and Other Weeds:	
Bentgrass, colonial	<i>Agrostis tenuis</i>
Bluegrass, annual	<i>Poa annua</i>
Crabgrass, large	<i>Digitaria sanguinalis</i>
Fescue, creeping red	<i>Festuca rubra</i>
Fescue, hard	<i>Festuca ovina</i>
Nimblewill	<i>Muhlenbergia scheberi</i>
Onion, wild	<i>Allium canadense</i>
Ryegrass, perennial	<i>Lolium perenne</i>
Star-of-Bethlehem	<i>Ornithogalum nutans</i>
II. Weeds Moderately Difficult to Control¹	
Bermudagrass (Wireweed)	<i>Cynodon dactylon</i>
Bindweed, field	<i>Convolvulus arvensis</i>
Dandelion	<i>Taraxacum officinale</i>
Nutsedge, yellow	<i>Cyperus esculentus</i>
Ragweed, common	<i>Ambrosia artemisiifolia</i>
suppression	<small>¹Use 13 to 15% V/V FL-AN540OP for control or suppression</small>

* Refer to the General Instructions section for Use Methods description.

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal.

Pesticide Storage: Store container in cool place until used. Store at temperatures above 32° F.

Pesticide Disposal: Wastes resulting from use of this product must be disposed of on-site or at an approved waste disposal facility.

Container Handling:

Non-refillable Containers: Do not reuse or refill this container. Offer for recycling if available.

Clean container promptly after emptying (liquid formulations).

Non-refillable container equal to or less than 5 gals: 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 ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Non-refillable container greater than 5 gals: Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Refillable container 5 gals to bulk: Refill this container with this pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. . Repeat this rinsing procedure two more times. Dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

For non-medical emergencies or spills, see **FL-AN540OP** SDS or call CHEMTRAC at 800-424-9300.

Warranty and Disclaimer Notice:

To the extent consistent with applicable law, Emery Oleochemicals LLC, makes no warranty or guarantee of any kind, expressed or implied concerning the effects of use of this product, other than those specified on this label. Buyers or users accept all responsibility for results due to misuse or improper handling of this product.

Produced for

Emery Oleochemicals LLC
4900 Este Avenue
Cincinnati, OH 45232
513-762-2500

SUBLABEL B: FOR COMMERCIAL USE

FOR CONTACT SPRAY CONTROL OR BURNDOWN OF WEEDS AND GRASSES.

FOR USE IN STRUCTURAL PEST CONTROL, CONTROL OF VEGETATION IN PASTURE AND RANGELAND.

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FL-AN5400P

Non-selective Herbicide

 FOR ORGANIC PRODUCTION

Active ingredient:

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Other ingredients	<u>60.0 wt.%</u>
Total	100.00 wt.%

KEEP OUT OF REACH OF CHILDREN

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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 the 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.
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Lot No. xxxxxxxx

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- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

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

DIRECTIONS FOR USE

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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 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.

Keep unprotected persons out of treated areas until sprays have dried.

METHODS OF USE AND GENERAL APPLICATION INSTRUCTIONS

General Instructions

FL-AN540OP is a contact non-selective herbicide for spray application only to undesirable plant growth. Do not allow spray to contact any green plant parts of desirable plants. **FL-AN540OP** provides control and burndown suppression of annual and perennial broadleaf and grass weeds. Spore producing plants such as mosses and liverworts are also controlled. The amount of burndown and the duration of weed suppression may be reduced when weed growth conditions are unfavorable or when plants are mature.

FL-AN540OP is non-volatile and water soluble for foliar application in tractor powered field-type sprayers or manual pump sprayers. Complete and uniform coverage of weeds by the spray solution is required for the best weed control. Plant foliage will change from a green color to brown/black necrotic tissue within one to two hours after spray application of **FL-AN540OP** diluted with water. **FL-AN540OP** effect on plant tissue may be more rapid in warm weather than in cold conditions. However, weed control is normally unaffected by temperature.

FL-AN540OP herbicide is a soap product which penetrates the cell walls of plants to disrupt the cellular organization of physiological functions which are compartmentalized by membranes within the cell walls. Plant growth ceases when cellular contents are mixed which causes brown necrotic plant tissue.

FL-AN540OP does not migrate through the soil and is not translocated in plants. **To ensure satisfactory control, plant leaves must be thoroughly and uniformly covered with the spray solution.** **FL-AN540OP** does not provide any residual weed control in soil to affect germinating weed seeds.

Mixing and Application Instructions

For use, **FL-AN540OP** is diluted with water to the specified concentration for effective control of the undesirable vegetation. Apply using standard methods of liquid herbicide application. Dilution must be in accordance with label instructions. Do not apply this product through any type of irrigation system.

A 12% v/v dilution is recommended for most weed control situations and based on the results, applicators may increase or decrease spray concentrations as discussed in the following text and tables to obtain better control or to reduce herbicide use.

The degree of dilution for application is based on the concentration of active ingredient needed for the size of vegetation to be suppressed or the rate of herbicidal effect desired. The larger the vegetation, the higher the concentration (less dilution of FL-AN540OP) required for rapid action. See required concentration for variously sized weeds and grasses in Dosage and Application Rates Section. Hard to control or suppress weeds (perennial weeds and some grasses) may require several applications for complete control.

Spray equipment options include hand-held, boom sprayers, pressure sprayers and hose-end sprayers. Spray nozzles that produce a uniform spray will give maximum coverage of the leaves and improved weed control. **FL-AN540OP** is completely soluble in water and when uniformly mixed, no additional mixing or agitation is required.

Application Precautions

- Do not apply to weeds when wet from dew, rain or irrigation.
- Do not irrigate within 2 hours after application
- Do not apply if rainfall is expected within 2 hours.

During application, some foaming may occur; however, weed control is unaffected if the foam is deposited on the plant surface and is not blown away as drift. Foaming can be reduced by using the minimum spray pressure required for a uniform application to the target weeds. Use low spray pressure to reduce foaming and avoid contact with desirable plants. Most spray nozzles are designed to operate at 10 to 15 psi and provide uniform spray coverage of weeds.

Mixing

Fill sprayer tank with half the required amount of water, add the full amount of **FL-AN540OP** to be used (see Dilution Factors below), then fill the sprayer tank with the remainder of the water required for the desired final concentration. Since **FL-AN540OP** is completely soluble in water and when uniformly dispersed in water, continuous mixing or agitation is not required.

Broadcast Application with Field Sprayer Boom Equipment

The amount of weed vegetation will determine the spray volume required for complete coverage of undesired plants (weeds). Weed vegetation conditions that affect spray coverage are number of weeds present, leaf shape, weed size and weed species. For weeds of over 1 inch height do not use less than 30 gal/acre. Large weeds of 12 to 18 inch height may require 80 to 125 gal/acre or more for control.

Hand-Held Equipment

Thorough saturation of the foliage and stems is required for control, but stop sprays when run-off from weed leaves occurs. Use low spray pressure to reduce foaming and avoid contact with desirable plants. Most spray nozzles are designed to operate at 10 to 15 psi and provide uniform spray coverage of weeds.

Directed Spray Equipment

Use a shielded sprayer to prevent spray contact on desirable plants. Avoid spray contact of green plant stems or green bark of young trees and shrubs.

NOTE: In areas of hard water, the final mixture may appear milky. This condition does not change the effectiveness of the treatment. Some visible foam may appear on the leaves as the plants are sprayed. Overspray or drift onto desirable plants is usually not a serious problem because leaves and stems require a thoroughly wet spray coverage for significant injury. Repeat applications as often as necessary to obtain desired control.

Dosage and Application Rates

For general weed and grass control, rates are based on the size of the plants and/or the desired speed of kill. The larger the plants, the higher the dosage rates needed to ensure maximum herbicidal activity. Also, the higher the concentration, the quicker the plants wilt and turn brown. Apply **FL-AN540OP** spray solutions only when weed surfaces are dry.

The rate table presents the suggested percent volume/volume solutions of **FL-AN540OP** to use for application as follows:

- Use a 6 to 8 % V/V **FL-AN540OP** spray solution for control of annual weeds of 1 inch height or less and for control of liverworts and mosses.
- Use an 8 to 10% V/V **FL-AN540OP** spray solution for control of annual weeds over 1 inch height and up to 4 inch height.
- Use a 10 to 13% V/V **FL-AN540OP** spray solution for weeds over 4 inch height and for hard to control weeds.
- A 15% V/V **FL-AN540OP** spray solution is the maximum labeled rate for weed control. Use this rate for hard to control perennial weeds or extremely dense weed growth.

Repeat spray applications as necessary to obtain the desired control or suppression of weeds from newly germinated weed seeds and regrowth from roots or stems.

WEED CONTROL RATE TABLE

Final Spray Volume (gallons)	Amount of FL-AN540OP for Percent V/V (Volume/Volume) Solution				
	6%	8%	10%	13%	15%
1	8 fl oz	10 fl oz	13 fl oz	1 pt	1.2 pt
2	1 pt	1.3 pt	1.6 pt	2 pt	2.4 pt
5	2.5 pt	3.3 pt	4 pt	5 pt	6 pt
10	5 pt	6.5 pt	1 gal	1.3 gal	1.5 gal
20	1.3 gal	1.6 gal	2 gal	2.6 gal	3.0 gal

Height of Plants to be Controlled

Spray Solution (% V/V)

1 inch or less	6 to 8%
1 to 4 inches	8 to 10%
Above 4 inches	10 to 13%

Use Methods

Determine the weed control situation and select the use method required as follows:

- Vegetative Burndown:** Broadcast spray for weed control for no-till planting or seedbed preparation to control weeds prior to seeding or transplanting. Spot sprays may be used in ornamentals and turf.
- Directed and shielded sprays:** Spray nozzle type or configuration for directed spray or a shield placed around the nozzle to prevent spray contact on the foliage or green stems or bark. Directed/shielded spray applications to area between plastic mulch strips and staked crops for weed control.

PESTS

I. Weeds controlled or suppressed by FL-AN540OP:

COMMON NAMES

TAXONOMIC NAMES

Broadleaf Weeds:

Algae	<i>Gloeo caps a magma</i>
Bittercress, hairy	<i>Cardamine hirsuta</i>
Chickweed, common	<i>Stellaria media</i>
Chickweed, mouse-ear	<i>Cerastium vulgatum</i>
Cocklebur, common	<i>Xanthium strumarium</i>
Corn spurry	<i>Spergula arvensis</i>
Cudweed, purple	<i>Gnaphalium purpureum</i>
Groundsel	<i>Senecio spp.</i>
Lambsquarters, common	<i>Chenopodium album</i>
Liverwort	<i>Machantia spp.</i>
Marestail or Horseweed rosettes	<i>Conyza canadensis</i>
Morningglory, annual	<i>Ipomoea spp.</i>
Moss	<i>Bryophyta</i>
Mustards	<i>Brassica spp.</i>
Oxalis or Woodsorrel	<i>Oxalis stricta</i>
Pansy, wild	<i>Viola tricolor</i>
Plantain	<i>Plantago spp.</i>
Pigweed, smooth and redroot	<i>Amaranthus spp.</i>
Mallow, roundleaved	<i>Malva spp.</i>
Moneywort	<i>Lysimachia nummularia</i>
Shepherdspurse	<i>Capsella bursa-pastoris</i>
Sorrel, sheep	<i>Rumex acetosella</i>
Spurge, spotted	<i>Euphorbia maculata</i>
Field pennycress	<i>Thlaspi arvense</i>
Velvetleaf	<i>Abutilon theophrasti</i>

Grass and Other Weeds:

Bentgrass, colonial	<i>Agrostis tenuis</i>
Bluegrass, annual	<i>Poa annua</i>
Crabgrass, large	<i>Digitaria sanguinalis</i>
Fescue, creeping red	<i>Festuca rubra</i>
Fescue, hard	<i>Festuca ovina</i>
Nimblewill	<i>Muhlenbergia schreberi</i>
Onion, wild	<i>Allium canadense</i>
Ryegrass, perennial	<i>Lolium perenne</i>
Star-of-Bethlehem	<i>Ornithogalum nutans</i>

II. Weeds Moderately Difficult to Control¹

Bermudagrass (Wireweed)	<i>Cynodon dactylon</i>
Bindweed, field	<i>Convolvulus arvensis</i>
Dandelion	<i>Taraxacum officinale</i>
Nutsedge, yellow	<i>Cyperus esculentus</i>
Ragweed, common	<i>Ambrosia artemisiifolia</i>

¹Use 13 to 15% V/V FL-AN540OP for control or suppression

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal.

Pesticide Storage: Store container in cool place until used. Store at temperatures above 32° F.

Pesticide Disposal: Wastes resulting from use of this product must be disposed of on-site or at an approved waste disposal facility.

Container Handling:

Non-refillable Containers: Do not reuse or refill this container. Offer for recycling if available.

Clean container promptly after emptying (liquid formulations).

Non-refillable container equal to or less than 5 gals: 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 ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Non-refillable container greater than 5 gals : Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Refillable container 5 gals to bulk: Refill this container with this pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. . Repeat this rinsing procedure two more times. Dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

For non-medical emergencies or spills, see **FL-AN540OP** SDS or call CHEMTRAC at 800-424-9300.

Warranty and Disclaimer Notice:

To the extent consistent with applicable law, Emery Oleochemicals LLC, makes no warranty or guarantee of any kind, expressed or implied concerning the effects of use of this product, other than those specified on this label. Buyers or users accept all responsibility for results due to misuse or improper handling of this product.

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