

# Adjuvant Guide

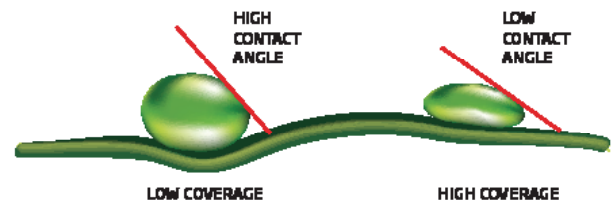


# Adjuvant

Adjuvants are products that are added to pesticide and fertilizer spray solutions to enhance performance. Adjuvants include but are not limited to spreaders, buffers, stickers, activators and drift control agents.

Most adjuvants are used to increase product coverage, but they can also be used to improve product absorption, slow evaporation and to condition spray water.

“Spreader type adjuvants” contain surfactants or wetting agents that are used to increase surface coverage. Surfactant molecules are water and oil soluble, which allows them to migrate to the surface of the liquid and break the hydrogen bond between water molecules. This flattens the droplet, allowing it to cover more of the leaf surface.



- **Activators** - include crop oils and methylated seed oils that penetrate the plant's cuticle
- **Buffers/Acidifiers** - buffers modulate pH with a salt acid system; acidifiers lower pH of spray water by neutralization
- **Drift control agents** - increase droplet size, which improves deposition with less drift
- **Stickers** - leave a deposit on plant surface to reduce wash off
- **Super wetters** - modified organosilicone surfactants that provide superior wetting; can be used on hard-to-wet canopies and tree bark
- **Utility products** - include marker dyes, defoamers, compatibility aids and tank cleaners
- **Water conditioners** - include ammonium sulfate and other products that eliminate hard water cations



# Surfactants

## NON-IONIC SURFACTANTS (NIS)

### No Foam A

Non-ionic 90% spreader activator. Optimizes wetting and spreading of insecticides, miticides, fungicides, herbicides and growth regulating hormones. Will not cause phytotoxicity or excess foaming. Creates low surface tension at low rates.

### Ultra 90-NF

Economical, 90% active non-ionic surfactant that increases the effectiveness of spray applications and improves retention and wetting of foliage. Use for general spreading, herbicides, etc. Contains an anti-foaming agent.

### AquaSurf™<sub>1</sub>

Eco-friendly, non-ionic spreader improves the wetting, spreading and overall performance of aquatic herbicides and other crop protection products. Helps reduce excess foam. Will not harm fish or other aquatic organisms. Approved for aquatic use in the state of Washington.

### Torpedo

Low foam, 100% active, lecithin-based surfactant/penetrant/deposition aide that enhances the activity and effectiveness of sulfonyleurea herbicides and other pesticides.

### Green Cypress® Ag Aide<sub>1</sub> ♦

Natural, non-ionic surfactant that enhances pesticide and foliar nutrient performance and effectiveness, by rapidly wetting and improving absorption. Formulated with 100% *Yucca schidigera* extract.

### Surfact 50™<sub>2</sub> ♦●

Low-foaming, surface-extendable spreader/activator. Contains 50% saponin glycoside, which is derived from *Yucca schidigera*.

## SILICONE BASED SURFACTANTS

### Silicone Super Wetter

Next generation surfactant formulated with organomodified siloxane technology. Highly effective, non-ionic wetter/spreader/penetrant surfactant designed for use with water-based pesticides.

### Green Cypress® EcoSpreader<sub>1</sub> ♦

Non-ionic organosilicone wetting agent that lowers surface tension of spray solutions to provide increased wetting and more uniform coverage of foliar surfaces. Ideal for situations where coverage is critical, such as low-volume spray and aerial applications.

### CMR Can-Hance

Silicone surfactant and methylated canola oil blend designed to enhance herbicide uptake. Very effective with sethoxydim and sulfonyleurea compounds.

### Silicone Surfactant

Organosilicone surfactant/copolymer blend. Organosilicone surfactants have proven to be extremely active spreading and penetrating agents.

## STICKERS

### Umbrella

Spreader/sticker/surfactant that improves insecticide, fungicide, herbicide and pesticide efficiency, by forming a rainfast film. Formulated with terpene resins and surfactants for increased spreading. Texturized for easier pouring and mixing.

### S-K-H Organic Adhesive Adjuvant ♦

Economical and reliable sticker used for Fall citrus spraying. Just one bag per tank is needed - no measuring.

### CMR Spreader/Sticker

Spreader and sticker that improves coverage, reduces evaporation and won't penetrate the leaves. May be used on agricultural, forestry, turf and ornamental, industrial, structural and non-cropland sites. Formulated with cottonseed oil.

### Stick-It Organic ♦●

Proprietary sticker that forms an elastic film to keep chemicals in contact with the plant surface. Formulated with terpene polymers and emulsifiers. For use with pesticides and soluble fertilizers.



# Surfactants

## VEGETABLE OIL CONCENTRATES (VOC)

### CMR Organic Oil Adjuvant ♦

93% cottonseed oil, 7% emulsifier blend that improves spreading and reduces evaporation. Designed for use with controlled droplet application (CDA) pesticides where the oil acts as carrier in the pesticide spray mixture.

## ACTIVATORS

### Rocket® DL 1

100% active spreader/activator improves efficacy, absorption and translocation. Unique, wax dissolving properties work well on difficult-to-kill weeds. Low foam formulation. Made with citrus extract.

### CMR Herbicide Activator

20% non-ionic surfactant, 80% oil formulation that provides rapid wetting and improves foliar penetration. Will not cause phytotoxicity. Excellent for use with oil and water-based systemic herbicides.

### Monterey M.S.O.

Multi-component spray adjuvant that improves the performance and consistency of post-emergent herbicides. Methylated seed oil blend may be used as a replacement for non-ionic surfactants and crop oil in post-emergent herbicide spray mixes.

### Monterey Crop Oil

High quality paraffinic oil/surfactant blend that improves the effectiveness of select herbicides. For use in crop protection spray programs.

## WATER CONDITIONERS

### Magnify

Unique, sucrose-based surfactant/activator/penetrant that increases herbicide metabolism and translocation to kill more weeds faster. Made with ammonium sulfate and nitrates. Recommended use rate: 1-4 qts/100 gallons.

### Condition Xtra

35% active, low-use rate solution that conditions spray water and increases herbicide uptake and coverage. Formulated with

ammonium sulfate, sequestering agents, deposition aid and foam retardant. Compatible with Roundup Weathermax® and glyphosate. 2-4 quarts replaces the large amount of ammonium sulfate typically required for water conditioning.

### Monterey Inhance

Liquid water conditioning agent and defoamer designed for use with products that recommend the addition of AMS or liquid fertilizers. Easier to use than dry ammonium sulfate. Each 2.5 gallons contains 8.5 lbs. of AMS.

***BRANDT Monterey has the capabilities to manufacture customized adjuvant formulations. Please contact us if you are interested in an adjuvant solution that is not listed in our product guide.***

# Buffers

### Adjust

Citric acid-based acidifier/buffering agent designed to lower the pH of spray solutions. Ideal for use when phosphoric acid or other strong acids are not recommended.

### Buffer-Ten

Non-foaming acidifier/defoaming agent designed for use with various pesticides. Effectively reduces hydrolytic breakdown of products, such as organophosphate insecticides, in alkaline solutions.

### Constant BUph-er® 2 ♦●

Organic citric acid and vinegar buffer that lowers water pH safely and minimizes potential equipment damage.

### Monterey Nutrient Buffer 10-12-0 ZNP

Foliar nutrient-buffer system containing nitrogen, phosphorus, zinc and manganese.

### No Foam Nutrient Foliar Solution 8-8-2

Foliar nutrient spray, buffering agent and spreader containing iron, manganese and zinc.



## BUFFER/SPREADERS

### No Foam B

25% active, non-ionic surfactant blend that acts as a spreader/buffer. Ideal for use with insecticides and fungicides to lower spray tank pH. Contains a defoaming agent. Can be used up to 5% v/v.

### Monterey Super 7

Multi-function adjuvant that can be used as an acidifying agent to lower pH of spray solutions and prevent alkaline hydrolysis. Also effective as a non-ionic spreader, deposition aide, acidifier and penetrant. Lecithin improves wax penetration. Does not contain APE.

### Indicate 5® 3

83% active adjuvant that reduces and buffers the pH in spray solutions, prevents hard water inactivation and rapid degradation of alkaline sensitive pesticides. Unique pH indicator that turns spray water pink when the optimum pH range is reached.

## Drift Control Additives

### 38-F® 4

32% active liquid polyacrylamide polymer. Used as a drift retardant additive in ground and aerial applications.

### 41-A® 4

30% active dry polyacrylamide/polysaccharide polymer used as a drift retardant additive in ground and aerial applications.

### Sta-Put® Plus 5

1% polyvinyl polymer spray that increases product deposition, canopy penetration and helps control drift. Effective and easy-to-use.

## Dyes

### Brandt Mean & Green

Natural, non-fading and permanent grass colorant. Can be applied anytime during the year and will not injure turfgrass. One spray application in the fall assures beautiful green turf all winter, without seeding.

### Brandt Midnight Blue SS

Natural blue/black deep water colorant that adds beauty to ponds, lakes, fountains and lagoons.

### Green Toes SS

Designed as a chemical spray marker for golf courses, parks, turf, nursery and commercial applications. Eliminates overlapping or skipping of application areas.

### H<sub>2</sub>O-Blue® 1

A combination of fixed dyes that disperse sunlight rays while restoring discolored water. Will give your water a cosmetic beautifully colored hue that ranges from ocean blue to aquamarine.

### Mark-It Blue

Concentrated, temporary blue colorant designed as a chemical spray marker for use with pesticides and other spray solutions. Widely used on golf courses, turf and areas needing spot treatment. Blue colorant washes off easily and is broken down by sunlight.

### Mark-It Red

Concentrated red colorant designed as a temporary chemical spray marker for use with soil applied herbicides. Replaces rhodamine red dyes. Also used as a fertilizer dye.



# Irrigation Aids/ Soil Penetrants

## Aqua-Pam™ PR 3005 <sup>2</sup>

Liquid concentrate that improves water retention and water content, for better plant growth and water use. Contains polyacrylamide.

## Micro Clean Concentrate

Combination water treatment, scale prevention and soil penetration aide. Can be used alone or for system maintenance in liquid fertilizer drips and micro-irrigation systems.

## N-pHURIC® GTO <sup>6</sup>

Water treatment solution used to clean and maintain irrigation systems. Excellent alternative to strong acids.

## PAL™ <sup>2</sup>

Soil amendment with the added benefit of calcium, helps improve water penetration, soil aeration and nutrient utilization.

## Perc-O-Late

Irrigation aid and soil wetting agent designed for use in agricultural, golf course, turf and other areas where water quality and/or soil texture makes water penetration difficult.

## In-FuseO™ <sup>2</sup> ◆◆●

Water treatment solution keeps drip irrigation tubes clean and free of mineral deposits. Formulated with plant extracts, naturally derived sarsaponins and ethanoic acid.

# Miscellaneous Adjuvants & Application Aids

## Agricultural Lime

Hydrated calcium hydroxide powder (min. 90% CaO equivalent) designed for use with fixed coppers in Bordeaux sprays.

## CMR Pesticide Equipment Cleaner

Liquid solution used to decontaminate spray rigs, storage tanks, etc. Ideal for use between agricultural chemical applications and equipment storage.

## CMR Spray Tank Scrubber® <sup>7</sup>

Dry, soluble powder used to decontaminate pesticide spray rigs, storage tanks, etc. Ideal for use between agricultural chemical applications and equipment storage.

## Monterey Insect Bait

99% corn steep formulation enhances the effectiveness of agricultural insecticides. Contains a protein bait that attracts fruit flies, husk flies, etc.

## Odor-Mask

Concentrated formulation that helps mask undesirable odors of pesticides and other products. Contains methyl salicylate (oil of wintergreen).

## Tripleline Foam-Away

Defoamer helps minimize foaming in various solutions. For agricultural, commercial and household use.

## STOCKOSORB® 660 <sup>8</sup>

Super-absorbent polymer that increases water and fertilizer efficiency. Helps reduce irrigation needs.

## STOCKOPAM® <sup>8</sup>

Helps prevent irrigation-induced erosion and water infiltration.







- 1 Trademark of Monterey Chemical Company
- 2 Trademark of Northwest Agricultural Products
- 3 Trademark of Brandt Consolidated, Inc.
- 4 Trademark of Sanitek Products, Inc.
- 5 Trademark of ONDEO Nalco Chemical Company
- 6 Trademark of Agrium
- 7 Trademark of Creative Marketing & Research, Inc.
- 8 Evonik Stockhausen GmbH LLC