PPP-162

# COMPENDIUM OF HERBICIDE ADJUVANTS *FOR SPECIALTY SITES*

***2026 • 1st Edition***



*Turf*



*Aquatic*



*Organic*



*Right-Of-Way*

PURDUE UNIVERSITY | Extension

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# COMMENTS ON THE 2026 COMPENDIUM OF HERBICIDE ADJUVANTS FOR SPECIALTY SITES

The *Compendium of Herbicide Adjuvants* has been published periodically since 1992 providing an overview of commercial adjuvant products available to pesticide applicators across all sectors of pesticide and adjuvant use. We have frequently been asked if certain products are intended for use in specialty sites such as turf, aquatics, organic plant production, and rights-of-way. The information published in this supplemental version of the full 2026 *Compendium of Herbicide Adjuvants* lists adjuvant products that were specifically noted by the companies for use in one or more of these four specialty sites. Other adjuvant products may very well be permitted in these specialty sites, but this was not communicated from the company for this publication. Of course, all users should reference the product label to determine approved sites for application of specific adjuvants.

Adjuvants are added to the pesticide formulation or to the final spray solution to enhance the activity of the pesticide or to enhance the physical characteristics of the mixture. With the extent of disease and herbicide resistance to pesticides that has evolved in agriculture, the opportunity to optimize pesticide activity with proper use of spray adjuvants has never been more critical. For more information on the function and use of spray adjuvants, please refer to Purdue Pesticide Programs publication PPP-107 (Adjuvants and the Power of the Spray Droplet at *https://ag.purdue.edu/department/extension/ppp/resources/ppp-publications/mobile/ppp-1071.html*).

The products in this *Compendium* of Herbicide Adjuvants for Specialty Sites are organized by type of adjuvant such as nonionic surfactants, crop oil concentrates, etc. Product name, principal functioning agents, use rate, special comments, and manufacturer and/or distributor are provided. **Product names can be searched in the index.**

Adjuvant product performance can vary greatly within an adjuvant category due to the types, amount, and quality of the chemicals used in the formulation. The Chemical Producers and Distributors Association (CPDA) has developed a voluntary Certification Program that requires adjuvants products to meet 17 separate benchmarks for adjuvant composition. At the date of this publication, 244 adjuvant products were certified by CPDA (*https://cpda.com/cpda-certified-product/*). Products listed within this Compendium that are CPDA certified are noted using the CPDA certification logo starting on page 31 (Adjuvants for Each Manufacturer, Distributor, or Retailer).

The information in this *Compendium* of Herbicide Adjuvants for Specialty Sites was assembled for educational purposes only and is believed to be accurate based on the information provided by the manufacturer, distributor, or retailer. All commercial adjuvant products were considered for inclusion in the *Compendium* of Herbicide Adjuvants for Specialty Sites. Any omissions were not intentional. In addition, the listing of products in this *Compendium* does not constitute an endorsement, nor is the omission of products in any way an intention to discriminate against any manufacturer and their adjuvants.

***Publication Credits***

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*Compendium of Herbicide Adjuvants in Specialty Sites*

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# ADJUVANT CATEGORIES

## *A Brief Explanation*

The adjuvant products listed in the *Compendium of Herbicide Adjuvants in Specialty Sites* have been grouped into categories by the manufacturer, distributor, or retailer. Herbicide labels may recommend the use of an adjuvant using terminology similar to the adjuvant categories provided in this *Compendium*. If a product is classified as a multi-functional product, it will be listed up to three adjuvant categories. Products with multiple functions may be listed in up to three adjuvant categories in the space limitations of this booklet.

Two significant changes from previous editions can be found in this *Compendium*. The High Surfactant Oil Concentrates have been categorized into subcategories to indicate the type of oil in the product: high surfactant crop oil concentrate (HSCOC), high surfactant modified vegetable oil concentrate (HSMVOC), and high surfactant vegetable oil concentrate (HSVOC). Definitions of these three HSOC types can be found in the glossary at the back of the *Compendium*. Furthermore, each product within the HSOC table has been further classified into these three subcategories.

The Soil Adjuvant category is new for this edition of the *Compendium* since the number of products has grown in recent years. These adjuvants gained popularity in the specialty markets such as turfgrass management and perhaps some additional irrigated sites. Although, the use of soil adjuvant products in major agronomic crops remains limited.

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| Nonionic Surfactants (NIS) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Product Name** | **Company** | **Principle Functioning Agents** | **Use Rate** | **Technical Comments** | **Turf** | **Aquatic** | **Organic** | **ROW** |
| 90% NONIONIC SURFACTANT | KALO, Inc. | 1,2,3-propanetriol, diethylene glycol, alkylphenol ethoxylate | 1-4 pt/100 gal | Fungicides, insecticides, acaricides, as well as post-emergent herbicides | | | ✓ | |
| APSA-80 | Amway | 80% Nonionic sufactant (alkylaryl alkoxylate) free fatty acids | 0.02-0.4% | Low foam | ✓ | | | ✓ |
| AQUA-BOOST+ | Brewer International | Blend of alcohol ethoxylates, limonene, glycols, and dimethyl siloxanes | 0.125-0.5% | Spreader, humectant and water conditioner | ✓ | ✓ | | ✓ |
| AQUA-KING PLUS | Heritage Landscape Supply | Nonylphenol polyethylene glycol ether, free fatty acids, organic phosphatic acids, dimethylpolysilxane | 1-4 pt/100 gal | | | ✓ | | |
| ARVON | Wilbur-Ellis Company | Sorbitan fatty acid ester and citric acid | 0.25-4 pt/100 gal | NIS which reduces pH, contains defoamer | ✓ | | | |
| ARVUM | Titan Pro SCI | Sorbitan monolaurate poly(oxyethylene) ether, and 1,2 propanediol | 0.5-4 pt/100 gal | | | | | ✓ |
| ARVUM ULTRA | Titan Pro SCI | Sorbitian monolaurate poly(oxyethylene) ether, mon- and diglycerides of C8-C18 fatty acids | 1-4 pt/100 gal | | | ✓ | | ✓ |
| ASSIST | GarrCo Products Inc. | Nonionic surfactant blend, water conditioner and compatibility agent | 0.5-2 qt/100 gal | Convenient combination | ✓ | ✓ | | ✓ |
| ASTUTE XTRA | MFA, Inc. | Vegetable oil ethoxylate, tall oil fatty acids | 1-3 pt/100 gal | COC replacement | ✓ | | | |
| AVOR | Precision Laboratories, LLC | Polyoxyethylene sorbitan fatty acid ester, mono- and diglycerides of C8-C18 fatty acids | 1-4 pt/100 gal | | | ✓ | ✓ | ✓ |
| AVOR LT | Precision Laboratories, LLC | Polyoxyethylene sorbitan fatty acid ester | 1-4 pt/100 gal | | | | | ✓ |
| BIO-90 | KALO, Inc. | Branched alkyl phenol ethoxylate, propylene glycol, tall oil | 1-3 pt/100 gal | Premium 90% NIS, humectant with antifoam | ✓ | | ✓ | |
| BLAZE | GarrCo Products Inc. | Nonionic surfactant blend | 0.5-2 qt/100 gal | | ✓ | ✓ | | ✓ |
| BRANDT 719 SPREADER | Brandt Consolidated, Inc. | Polyoxyethlyene-polyoxypropylene polymer, methylated silicones | 6-12 fl oz/100 gal | Ultra-low use-rate NIS without the concerns of excess runoff of typical OSS surfactants | ✓ | | ✓ | |
| BRANDT A+ | Brandt Consolidated, Inc. | Ethoxylated sorbitan fatty acid ester, mono and diglycerides of C8-C18 fatty acids | 8-16 fl oz/A | Can be used in place of a NIS, COC, MSO | ✓ | ✓ | ✓ | ✓ |
| BRANDT INDICATE 5 | Brandt Consolidated, Inc. | Blend of alkyl aryl ethoxylates and water conditioning agents | 5-32 fl oz/100 gal | Contains color indicator showing pH of spray tank solution | ✓ | | | ✓ |
| BRANDT MAGNIFY | Brandt Consolidated, Inc. | Alkyl polyglycoside, ammonium sulfate and ammonium nitrate | 1-4 qt/100 gal | 2 lb AMS & 1 lb ammonium nitrate/gal, contains antifoam. Replaces need for both an NIS and Water Conditioner | ✓ | ✓ | | ✓ |
| BRANDT ORGANICS AG AIDE | Brandt Consolidated, Inc. | Yucca schidigera extract | 4-16 fl oz/100 gal | Has soil wetting properties | ✓ | | ✓ | |
| BRANDT SUPER 7 | Brandt Consolidated, Inc. | Alcohol ethoxylate, lecithin and propanoic acid | 12-16 fl oz/A | Can be used in place of a NIS, COC, MSO | ✓ | | | ✓ |
| BRANDT TORPEDO | Brandt Consolidated, Inc. | Modified vegetable (seed) oil, lecithin and alcohol ethoxylate | 12-16 fl oz/A | Can be used in place of a NIS, COC, MSO | ✓ | | | ✓ |
| BRANDT ULTRA 90 | Brandt Consolidated, Inc. | Alkyl phenol ethoxylate, polyethylene glycol, isopropanol, and polydimethylsiloxane | 0.5-2 pt/100 gal | Contains 75% nonionic surfactant and a humectant for slow dry time | ✓ | | | ✓ |

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|---|---|---|---|---|---|---|---|---|
| BRIMSTONE | Wilbur-Ellis Company | Monocarbamide dihydrogen sulfate, alkoxylated amine ethoxylate, propane-1,2,3-triol, alkyl glycol polyoxyethylene | 2-8 pt/A | AMADS with 28% surfactant | | | | ✓ |
| CERIUM ELITE | CHS | Ethoxylated soybean oil, oleic acid, alcohol ethoxylate | 0.25% | Oil emulsion based drift control | ✓ | | | ✓ |
| CHEM-SURF 90 | Winfield United | 1,2,3 Propanetriol, polyethylene glycol mono(branched p-nonylphenyl) ether, and sodium xylene sulfonate | 0.063-0.5% | Spreader, sticker, 90% active | ✓ | | | ✓ |
| CHEMWETT PLUS | Coastal Agrobusiness, Inc. | Alkylaryl polyoxyethylene glycols | 0.25-0.5% | | | | | ✓ |
| CHS DEPPEX | CHS | Ethoxylated soybean oil, oleic acid, alcohol ethoxylate | 0.5% | | ✓ | | | ✓ |
| CHS FIXATE PRO | CHS | Ethoxylated soybean oil, oleic acid, alcohol ethoxylate | 0.25% | Oil emulsion based drift control | ✓ | | | ✓ |
| CHS HYPERTONIC | CHS | Alcohol ethoxylate, alkylphenol ethoxylate, glycol | 0.25-0.5% | | ✓ | | | ✓ |
| CHS LEVEL BEST PRO | CHS | N-methyl-alkyl glucamide, polyethylene glycol monolaurate, polyethylene glycol undecyl ether, tallow alkyl amines ethoxylated | 0.25-0.75% | Contains tallow amine - a high end, highly active surfactant | ✓ | | | ✓ |
| CHS TRAPLINE | CHS | Water conditioners, surfactants, drift control agents, and constituents ineffective as a spray adjuvant | 0.75% | All-in-one for general acre | ✓ | | | ✓ |
| CIDE-KICK | Brewer International | D'limonene, related isomers, and emulsifiers | 0.25-0.5% | Wetter, sticker, activator, penetrant with orange fraganced oil | | ✓ | | ✓ |
| CIDE-KICK II | Brewer International | D'limonene, related isomers, and emulsifiers | 0.25-0.5% | Wetter, sticker, activator, penetrant with pine fragranced oil | | ✓ | | ✓ |
| CIDE-KICK II+ | Brewer International | D'limonene, related isomers, and emulsifiers | 0.25-0.5% | APE-free wetter, sticker, activator, penetrant with pine fragranced oil | ✓ | ✓ | | ✓ |
| CIDE-KICK+ | Brewer International | D'limonene, related isomers, and emulsifiers | 0.25-0.5% | APE-free wetter, sticker, activator, penetrant with orange fraganced oil | ✓ | ✓ | | ✓ |
| CITRI-AMP | CHS | Alcohol alkoxylate, sodium laureth sulfate | 0.1875-0.5% | | ✓ | | | ✓ |
| CITRIX | KALO, Inc. | Alcohol alkoxylate, sodium laureth sulfate | 25-64 oz/100 gal | Penetrant. Wetting Agent. Spreader. Enhanced alcohol ethoxylate chemistry | ✓ | | ✓ | |
| CLEARSURF 90 | CNI | Proprietary blend of alkylpolyoxethylene, glycol derivatives, humectant and formulation aids | 0.5-4 pt/100 gal | | | ✓ | | ✓ |
| COHERE | Helena Agri-Enterprises | Alkanolamide surfactants and alkylaryl polyethoxyethanol sulfates | 0.5-1 pt/100 gal | DO NOT USE alone or in combination with other nutritional or pesticide spray mixture applications to blueberries | ✓ | | | |
| COMPLEX | Winfield United | Alkylphenol ethoxylate, alkylphenol polymerized resin, triethanalomine | 0.125-0.375% | Spreader-sticker. Turf not listed | | | | ✓ |
| CONTROL DUO | GarrCo Products Inc. | Nonionic surfactant blend and drift mitigation/deposition aid (polymer based) | 1-6 qt/100 gal | Convenient combination | ✓ | ✓ | | ✓ |
| CONTROL DUO LS | GarrCo Products Inc. | NIS blend and drift mitigation/deposition aid (polymer based) with less surfactant than Control Duo | 1-6 qt/100 gal | Convenient combination | ✓ | ✓ | | ✓ |
| COVERALL | Coastal Agrobusiness, Inc. | Alkylpolyethoxy ethers | 0.125-0.5% | | | | | ✓ |
| DRAKON | CNI | Oxirane, 2-methyl-, polymer with oxirane, mono(2 ethylhexyl) ether; alcohol ethoxylate phosphate ester; soybean oil, ethoxylated and constituents ineffective as spray adjuvant | 2-3 qt/100 gal | | | | | ✓ |
| DROPLEX XTRA | Heritage Landscape Supply | Modified vegetable oil, alkyl phenol ethoxylate, vegetable oil | 16-32 oz/100 gal | | ✓ | ✓ | | ✓ |

| Nonionic Surfactants (NIS) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Product Name** | **Company** | **Principle Functioning Agents** | **Use Rate** | **Technical Comments** | **Turf** | **Aquatic** | **Organic** | **ROW** |
| DYNE-AMIC | Helena Agri-Enterprises | Proprietary blend of polyethoxlated dimethyl siloxanes, alkylaryl ethoxylates and methylated seed oils | See label | Functions as both NIS and MSO | | ✓ | | ✓ |
| EMBRECE-EA | Wilbur-Ellis Company | Polyoxyalkylene polyol fatty acid ester, alcohol ethoxylate, dimethyl siloxane polymer with silica | 1-2 pt/100 gal | NIS with spreader | ✓ | ✓ | | ✓ |
| ENERPREX | CHS | Ethoxylated soybean oil, oleic acid, alcohol ethoxylate | 0.5% | | ✓ | | | ✓ |
| FRANCHISE | Loveland Products, Inc. | Lecithin, methylesters of fatty acids and alcohol ethoxylate | See label | Penetrant, wetter | ✓ | | | |
| FS AQUALIGHT | GROWMARK, Inc. | Alkyl polyethoxy ethers, ethoxylated, glycols and soybean oil derivatives | 0.125-0.5% | Low foam, nonionic activator | ✓ | | | ✓ |
| FS AQUAPRIME | GROWMARK, Inc. | 1,2,3 propanetriol, alkylbenzensulphonic acid sodium salt, alkyl phenol alkoxylate and dimethylpolysiloxane | 8-64 fl oz/100 gal | Low foaming | | | | ✓ |
| FS AQUASUPREME 2.0 | GROWMARK, Inc. | Alkyl polyethoxy ethers, ethoxylated and soybean oil derivatives | 0.125-0.5% | | ✓ | | | ✓ |
| GULFSTREAM FREE | Heritage Landscape Supply | Alcohol alkoxylate, methylated seed oil, and sodium salts of fatty acids | 4-32 oz/100 gal | | ✓ | | | ✓ |
| HOOK | Atlantic-Pacific Agricultural Co., Inc. | Alkyl polyoxyethylene ethers, polymerized resins and fatty acid | 1-4 pt/100 gal | Approved for use with auxin herbicides, see label | ✓ | | | ✓ |
| HOOK-ZERO | Atlantic-Pacific Agricultural Co., Inc. | Proprietary blend of polyalkyloxy ethers, polymerized resins and fatty acids | 1-4 pt/100 gal | Approved for use with auxin herbicides, see label | ✓ | | | ✓ |
| HOWITZER | Rovensa Next | Alcohol ethoxylate, sodium lauryl ether sulfate | 24-96 fl oz/100 gal | Penetrant, spreader, wetting agent (Wintergreen) | ✓ | | ✓ | |
| HUM-AC 820 | Drexel Chemical Co. | Proprietary blend of alkylpolyoxyethanol and humectants | 1-2 pt/100 gal | | | | | |
| IMPROVE | GarrCo Products Inc. | Premium nonionic surfactant blend with antifoam/defoamer | 0.5-3 qt/100 gal | Contains antifoam | ✓ | ✓ | | ✓ |
| INDUCE | Helena Agri-Enterprises | Alkylarylpolyoxyalkane ether and free fatty acids | 0.125-0.5% | Non-flammable. Evaporation reduction aids | | ✓ | | ✓ |
| INFOLIUM-EA | Wilbur-Ellis Company | Polyoxyethylene polyol fatty acid ester, butyl lactate and alcohol ethoxylate phosphate ester | See label | OMRI Certified | ✓ | ✓ | ✓ | ✓ |
| INSIST 90 PLUS II | Wilbur-Ellis Company | Glycerol, alkyl phenol ethoxylate, dimethylbenzenessulfonic acid, sodium salt | 0.25-4 pt/100 gal | Not for aquatic use | ✓ | | | ✓ |
| IN-ZORB ADV | Farm Business Network | Sorbitan monolaurate poly (oxyethylene) ether, propylene glycol | 1-4 pt/100 gal | | | | | ✓ |
| JOINT VENTURE | Helena Agri-Enterprises | Proprietary blend of polyalkyleneoxide, modified organosilicones, akylpolyoxylkane ether, and aliphatic ester of C9-C12 fatty acids | 0.125-0.25% | For use with conventional and biological pesticides | ✓ | | | |
| K-SURF | KALO, Inc. | Alcohol ethoxylate, alkylphenol ethoxylate, glycol | 1-4 pt/100 gal | Impoves effectiveness of certain post-emergent herbicides, desiccants, defoliants, insecticide, fungicides, acaricides and miticides | ✓ | | ✓ | |

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|---|---|---|---|---|---|---|---|---|
| LAST CHANCE-PRO | CHS | N-methyl-alkyl glucamide, polyethylene glycol monolaurate, polyethylene glycol undecyl ether, tallow alkyl amines ethoxylated | 0.25-0.75% | Contains tallow amine - a high end, highly active surfactant | ✓ | | | ✓ |
| LEGION | Rosen's, Inc. | Proprietary surfactant blend | 10-12 oz/A | | ✓ | | | ✓ |
| LI-700 | Loveland Products, Inc. | Phosphatidylcholine, methylacetic acid, and alkylpolyoxyethylene ether | 0.25-4 pt/100 gal | Acidifier, penetrant, drift reduction | | ✓ | | |
| LIBERATE | Loveland Products, Inc. | Lecithin, methyl esters of fatty acids, and alcohol ethoxylate | 0.125-1% | Penetrant, depostition, drift reduction | | ✓ | | |
| LINE-UP+ | Brewer International | Polyethylene-polypropylene glycol, alkyl hydroxypoly oxyethylene, isopropanol | 0.063-0.5% | Low foam, wetter and spreader | | ✓ | | ✓ |
| METEM | Heartland Ag, Inc. | Tallow amine ethoxylate & humectants | 2-8 pt/100 gal | | | | | ✓ |
| MOR-ACT ADJUVANT | Wilbur-Ellis Company | Petroleum oil, tall oil, and alkyl phenol ethoxylate | 1-4 pt/A | Do not exceed 5% | ✓ | | | ✓ |
| MOR-ACT CROP OIL CONCENTRATE | Wilbur-Ellis Company | Petroleum oil, tall oil, and alkyl phenol ethoxylate | 1-4 pt/A | | ✓ | | | ✓ |
| OROBOOST | Rovensa Next | Alcohol ethoxylate | 20-100 fl oz/100 gal | Contains: Orange oil. Organic certified penetrant, spreader, wetting agent | ✓ | ✓ | ✓ | |
| PACIFIC PREMIUM CAPSIZE | CNI | Oxirane, 2-methyl-, polymer with oxirane, mono(2 ethylhexyl) ether; alcohol ethoxylate phosphate ester; soybean oil, ethoxylated and constituents ineffective as spray adjuvants | 2-3 qt/100 gal | | | | | ✓ |
| PACIFIC PREMIUM CLEARSURF 90 | CNI | Proprietary blend of alkylpolyoxethylene, glycol derivatives, humectant and formulation aids | 0.5-4 pt/100 gal | | | ✓ | | ✓ |
| PACIFIC PREMIUM NIS | CNI | Glycerol, polyethylene glycol mono (branched p-nonylphenyl) ether,sodium xylene sulfonate and constituents ineffective as spray adjuvant | 0.0675-0.5% | | | ✓ | | |
| PAS-800 | Drexel Chemical Co. | Phosphatidylcholine, methylacetic acid and alkyl polyoxyethylene ether | 0.25-4 pt/100 gal | Penetrant, acidifier, surfactant | ✓ | | | ✓ |
| PERMEATE | Winfield United | Alkoxylated fatty acid, sodium salts of soya fatty acid, diethylene glycol | 0.25-1% | NIS including NPE-free and UV protection | ✓ | | | ✓ |
| POWERLOCK | Winfield United | Modified vegetable oil, alkylphenol ethoxylate, vegetable oil | 5-8 oz/A | NIS, deposition, drift reduction | ✓ | ✓ | | ✓ |
| PRECISIVE | Precision Laboratories, LLC | Ethoxylated sorbitan fatty acid ester, mono- and diglycerides of C8-C18 fatty acids | 1-4 pt/100 gal | | | ✓ | ✓ | ✓ |
| PREFER 90 | CHS | Alcohol ethoxylate, alkylphenol ethoxylate, glycol | 0.25-0.5% | | ✓ | | | ✓ |
| PREFERENCE | Winfield United | Alkylphenol ethoxylate, sodium salts of soya fatty acids, isopropyl alcohol | 0.063-1% | | | ✓ | | ✓ |
| PROMOTE PLUS | Meherrin Ag & Chemical Company | Polyoxyethylene sorbitan fatty acid ester, mono- and diglycerides of C8-C18 fatty acids | 1-4 pt/100 gal | | | ✓ | ✓ | ✓ |
| PURE & SIMPLE 90% | KALO, Inc. | 1,2,3-propanetriol, diethylene glycol, branched alkylphenol ethoxylate | 1-4 pt/100 gal | Humectant. Fungicides, insecticides, acaricides, as well as post-emergent herbicides | | | ✓ | |
| PURE & SIMPLE NIS | KALO, Inc. | Alochol ehtoxylate, alkylphenol ethoxylate, glycol | 1-4 pt/100 gal | NPE nonionic | | | ✓ | |
| R-11 | Wilbur-Ellis Company | Polyethylene glycol mono(branched p-nonylphenyl) ether, butyl alcohol, dimethylpolysiloxane | 6-48 oz/100 gal | Spreader, activator | | ✓ | | ✓ |

| Nonionic Surfactants (NIS) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Product Name** | **Company** | **Principle Functioning Agents** | **Use Rate** | **Technical Comments** | **Turf** | **Aquatic** | **Organic** | **ROW** |
| RAINIER-EA | Wilbur-Ellis Company | Polyoxyethylene polyol fatty acid ester, butyl lactate and alcohol ethoxylate phosphate ester | 6-48 fl oz/100 gal | NPE free, aquatic approved, low foam | ✓ | ✓ | | ✓ |
| REGULAID | KALO, Inc. | 2-butoxyethanol, poloxalene, monopropylene glycol | 0.5-3 pt/100 gal | NPE-free NIS activator adjuvant. For use with growth regulators | | | ✓ | |
| SHRAPNEL | Rovensa Next | Alcohol ethoxylate, sodium lauryl ether sulfate | 24-96 fl oz/100 gal | Spreader, wetting agent | ✓ | | ✓ | |
| SKYHAWK | Rovensa Next | Alcohol ethoxlate, sodium lauryl ether sulfate | 16-96 fl oz/100 gal | Organic certified penetrant, spreader, wetting agent | ✓ | ✓ | ✓ | |
| SPREADER 90 | Loveland Products, Inc. | Alkylpolyethoxy ethers and ethoxylated derivatives | See label | 90/10 surfactant with defoamer | | ✓ | | |
| SURSIL | AgXplore International, LLC | Polyalkyleneoxide modified heptamethyltrisiloxane and nonionic surfactants | 12-64 oz/100 gal | | ✓ | | | |
| SYNTACT | Coastal Agrobusiness, Inc. | Modified turpene polymers and emulsifiers plus organo-silicone surfactants | 0.125-0.25% | | | | | ✓ |
| TRADITION 93 | Rosen's, Inc. | Alkylarylpolyethoxyethanol, free fatty acids, 2-buthoxy-ethanol, propylene glycol and dimethylpolysiloxane | 0.125-0.5% | Contains antifoam | | | | ✓ |
| TRI-PLEX | GarrCo Products Inc. | Nonionic surfactant blend, drift mitigation/deposition aid (polymer based), and non-AMS water conditioner | 1-6 qt/100 gal | Convenient combination | ✓ | ✓ | | ✓ |
| TRONIC | KALO, Inc. | Vegetable oil ethoxylate, tall oil fatty acids | 1-3 pt/100 gal | Vegetable derived NIS and oil adjuvant replacement | ✓ | | ✓ | |
| VALCHECK 80/20 | Winfield United | Alcohol ethoxylate and alkyl phenol ethoxylate | 1-2 pt/100 gal | Contains antifoam | | | | ✓ |
| VERACITY | CHS | Water conditioners, surfactants, drift control agents, and constituents ineffective as a spray adjuvant | 0.75% | All-in-one for general acre | ✓ | | | ✓ |
| WATER-RITE | KALO, Inc. | Poloxalene, alkylpolyglucoside, vegetable oil ethoxylate | 1-8 pt/A | NPE-free. NIS | | | ✓ | |
| WATER-RITE FC | KALO, Inc. | Alkylglucoside, 1,2,3-trihydroypropane, polydimethylsiloxane | 1-4 pt/A | NPE-free. NIS fertilizer tolerant | | | ✓ | |
| WETCIT | Rovensa Next | Alcohol ethoxylate, sodium lauryl ether sulfate | 25-100 fl oz/100 gal | Contains: Orange oil. Penetrant, spreader, wetting aid | ✓ | | ✓ | |
| WEX | Conklin Co., Inc. | Alcohol ethoxylates, propylene glycol, dimethylpolysiloxane | 0.08-0.5% | Also reduces chemical foaming | ✓ | ✓ | | ✓ |
| WHITE WATER 90 | CHS | Glycerol, diethylene glycol and alkyl polyglucoside | 0.25-0.5% | | ✓ | | | ✓ |
| WHITE WATER NIS | CHS | Branched alkyl phenol ethoxylate, glycerol, diethylene glycol | 0.25-0.5% | | ✓ | | | ✓ |
| WINDSURF PRO | Heritage Landscape Supply | 1,2,3-propanetriol, polyethylene glycol mono (branched p-nonylphenyl) ether, sodium xylene sulfonate | 0.5-4 pt/100 gal | | ✓ | ✓ | | ✓ |
| XION ACTIVEGEL | SpeedAgro | Linear alcohol ethoxylate, phosphoric acid | 10-25 ml/ A | | ✓ | | | ✓ |
| XION SILICONGEL | SpeedAgro | Linear alcohol ethoxylate | 10-25 ml/ A | | ✓ | | | ✓ |

| Surfactants plus Nitrogen Source | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Product Name** | **Company** | **Principle Functioning Agents** | **Use Rate** | **Technical Comments** | **Turf** | **Aquatic** | **Organic** | **ROW** |
| ADIUM | CHS | Ammonium sulfate, glycerol, dodecyl dimethyl betaine | 2.5% | 1 gal contains 3.4 lbs of AMS + polyacrylamide DRA | ✓ | | | ✓ |
| AG-BALANCE+ | Brewer International | Blend of nonionic surfactant, phosphoric acid, sequestering agent, and nitrogen | 0.25-0.5% | Absorption, spreader and water conditioner | ✓ | ✓ | | ✓ |
| AQUA-BALANCE+ | Brewer International | Blend of nonionic surfactant, phosphoric acid, sequestering agent, and AMS | 0.25-0.5% | pH modifier, enhanced spreader and water conditioner | ✓ | ✓ | | ✓ |
| BRONC PLUS DRY | Wilbur-Ellis Company | Ammonium sulfate, carbonyldiamine, polyoxyethylene-polyoxypropylene, beta-hydroxy-tricarboxylic acid, dimethylsiloxane | 10-20 lb/100 gal | 12 lb/100 gal = 8.5 lb AMS + 2 qt 80% NIS, contains antifoam | ✓ | ✓ | | ✓ |
| CAYUSE PLUS | Wilbur-Ellis Company | Ammonium sulfate, alcohol ethoxylate, phosphate ester | 2-6 qt/100 gal | NIS with AMS | ✓ | | | ✓ |
| CHS WHEELHOUSE 2 | CHS | Ammonium sulfate, sodium xylene sulfonate, and alkyl polyglucoside | 2.5% | 1 gal contains 3.4 lbs of AMS | ✓ | | | ✓ |
| CLASS ACT FLEX | Winfield United | Ammonium sulfate, high fructose corn syrup, substituted fatty alkylammonium alkylcarboxylate, alkyl poly glucoside | 1-4% | 20% surfactant. Not listed for aquatic applications | ✓ | | | ✓ |
| CLASS ACT NG | Winfield United | Ammonium sulfate, corn syrup, alkyl polyglucoside | 2.5-5% | AMS+NIS with CornSorb technology | | ✓ | | ✓ |
| CONDITION MAX | GarrCo Products Inc. | Concentrated water conditioner, ammonium sulfate with nonionic surfactant blend | 2-4 qt/100 gal | | ✓ | ✓ | | ✓ |
| CONDITION PLUS | GarrCo Products Inc. | Ammonium sulfate, nonionic surfactant blend, and drift mitigation/ deposition aid (polymer based) | 1-4 qt/100 gal | Provides 1 lb AMS/qt, contains antifoam/defoamer | ✓ | ✓ | | ✓ |
| CONDITION PLUS WD | GarrCo Products Inc. | Ammonium sulfate, nonionic surfactant blend, and drift mitigation/ deposition aid (polymer based) | 1-4 qt/100 gal | Provides 1 lb AMS/qt, does not contain any antifoam/ defoamer | ✓ | ✓ | | ✓ |
| DELIVER+ | Precision Laboratories, LLC | Ammonium sulfate & alkyl (C8,C10) polyglucoside | 1.25-2.5% | | | | | ✓ |
| ENCLOAX | CHS | Ammonium sulfate, D-Glucitol, 1-deoxy-1- (methyl-amino)-, N-C8-10 acyl derivatives, propylene glycol | 2.5% | 1 gal contains 3.4 lbs of AMS | ✓ | | | ✓ |
| EVENT | Rosen's, Inc. | A liquid proprietary blend of diammonium sulfate, surfactants, dimethylpolysiloxane, modified elasto polymer and antifoaming agents | 1-1.25% | Crop (guar) based polymer, use when AMS and/or AMS+surfactants are needed | | | | ✓ |
| INVADE X-TRA | Innvictis Crop Care, LLC | Nonionic and anionic surfactant, trisiloxane, nitrogen, dimethylpolysiloxane | 1% | | ✓ | | | |
| POWERHOUSE | Rosen's, Inc. | Diammonium sulfate, surfactants and dimethylpolysiloxane | 1.25-2.5% | Use when AMS and/or AMS+surfactants are needed | | | | ✓ |
| PRECINT 2 | CHS | Ammonium sulfate, sodium xylene sulfonate, and alkyl polyglucoside | 2.5% | 1 gal contains 3.4 lbs of AMS | ✓ | | | ✓ |
| REVEL | Rosen's, Inc. | Diammonium sulfate, surfactants and dimethylpolysiloxane | 0.25-0.5% | Use when AMS and/or AMS+surfactants are needed | ✓ | | | ✓ |
| SEQUESTER 3 | Hefty Seed Company | Ammonium sulfate & alkyl (C8,C10) polyglucoside | 1.25-2.5% | | | | | ✓ |

| Organo-Silicone Surfactants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Product Name** | **Company** | **Principle Functioning Agents** | **Use Rate** | **Technical Comments** | **Turf** | **Aquatic** | **Organic** | **ROW** |
| AIRCOVER | Heritage Landscape Supply | Alkyl phenol ethoxylate, polyether modified heptamethyltrisiloxane, and polyhydric acid | 6-32 oz/100 gal | | ✓ | ✓ | | ✓ |
| BRANDT SUPER WETTER | Brandt Consolidated, Inc. | Polyether-polymethylpolysiloxane-copolymer, polyether | 3-6 fl oz/100 gal | 100% organosilicone surfactant with greater compatibility compared to older OSS chemistries | ✓ | | ✓ | |
| CADENCE | KALO, Inc. | Diethylene glycol, polyether-polymethylsiloxane-copolymer, alkylphenol ethoxylate, dimethylpolysiloxane | 6-16 oz/100 gal | Wetting agent. Approved for use with Regiment and Regiment CA herbicide | ✓ | | ✓ | |
| CHEMPRO S-163 | Chemorse, Ltd. | Surfactant blend with organosilicone | 0.03125-0.5% | | ✓ | | | |
| CHEMPRO S-172 | Chemorse, Ltd. | Methylated seed oil/surfactant blend with organosilicone | 0.125-0.75% | | ✓ | | | |
| EXCEL 2000 | Coastal Agrobusiness, Inc. | Polyether polymethylsiloxane copolymer | 0.5-1 pt/100 gal | | | | ✓ | ✓ |
| FREEWAY | Loveland Products, Inc. | Silicone polyether co-polymer and alcohol ethoxylates | 6-64 oz/100 gal | Surfactant blend, organosilicones | ✓ | | ✓ | |
| INERGY | Winfield United | Methylated vegetable oil, polyether modified polysiloxane, alkylphenol ethoxylate | 0.25-0.75% | Blend of MSO and organosilicone | ✓ | ✓ | | ✓ |
| KINETIC | Helena Agri-Enterprises | Proprietary blend of polyalkyleneoxide modified polydimethylsiloxane and polyoxpropylene-polyoxyethylene block copolymers | 0.13% | Co-surfactant blend contains evaporation reducing agents | | ✓ | ✓ | ✓ |
| MATRIXX | Coastal Agrobusiness, Inc. | Polymethylsiloxane copolymer and polyethoxy ethers | 0.125-0.25% | | | | ✓ | ✓ |
| PHASE | Loveland Products, Inc. | Methylated seed oil plus organosilicone surfactant | 0.125-0.5% | 50/50 MSO/organosilicone blend | | ✓ | | |
| RAINFAST | Conklin Co., Inc. | Polyether-polymethylsiloxane-copolymer, organic surfactants, anti-foam agent | 6-12 oz/100 gal | Rain fastness, wetter, spreader, penetrant | ✓ | | | ✓ |
| REVISTA | Innvictis Crop Care, LLC | Siloxane polyalkyleneoxide copolymer and polyalkyleneoxide | 3.2-19 oz/100 gal | | | | ✓ | |
| SILENERGY | Brewer International | Polyalkyleneoxide modified polydimethylsiloxane and nonionic surfactants | 6-12 oz/100 gal | Superwetter | ✓ | ✓ | | ✓ |
| SILENERGY+ | Brewer International | Polyalkyleneoxide modified polydimethylsiloxane and nonionic surfactants | 6-12 oz/100 gal | APE-free, superwetter | ✓ | ✓ | | ✓ |
| SIL-FACT | Drexel Chemical Co. | Blend of organosilicone surfactant and alcohol ethoxylates | 6-64 fl oz/100 gal | Wetter, spreader | ✓ | | | |
| SILKIN | Winfield United | Alkylphenol ethoxylate, polyether-modified polysiloxane and propylene glycol | 4-64 oz/100 gal | Organosilicone adjuvant with NIS | | | | ✓ |
| SIL-MES 100 | Drexel Chemical Co. | Blend of organosilicone, methylated seed oil, alcohol ethoxylate and NIS | 1-5 pt/A | 100% active, wetter, spreader | | ✓ | | |
| SILNET+ | Brewer International | Polyalkyleneoxide modified polydimethylsiloxane and nonionic surfactants | 8-26 oz/100 gal | APE-free, superwetter, low foam and humectant | ✓ | ✓ | | ✓ |
| SILTRATE ADVANCED | Meherrin Ag & Chemical Company | Polyether polydimethyl siloxane copolymers | 6-16 oz/100 gal | | ✓ | | | ✓ |
| SPEED | Precision Laboratories, LLC | Polyether polydimethyl siloxane copolymers | 6-16 oz/100 gal | | ✓ | | | ✓ |
| SWIFT | CNI | Proprietary blend of polyether polydimethyl siloxane coploymers and formulation aids considered ineffective as adjuvants | 2-4 oz/A | | | | | ✓ |
| SYL-COAT | Wilbur-Ellis Company | Polyether-polymethylsiloxane-copolymer and polyether | 4-16 floz/100 gal | 100% organosilicone, NPE-free, OMRI listed | ✓ | | ✓ | ✓ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| SYL-TAC-EA | Wilbur-Ellis Company | Ethylated seed oil, polyether-polymethylsiloxane-copolymer, and polyoxyalkylene fatty ester | See label | NPE-free, aquatic approved | ✓ | ✓ | | ✓ |
| VESTIS | Precision Laboratories, LLC | Heptamethyltrisiloxane-1,3 propanediol ether, ethoxylated propoxylated and alcohol alkoxylate | 3.2-19 oz/100 gal | OMRI listed | | | ✓ | ✓ |

## High Surfactant Oil Concentrates (HSOC)

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | HSOC Type | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|---|
| ACCERO | Titan Pro SCI | Phytobland paraffinic oil, sorbitan monolaurate poly(oxyethylene)ether and dodecylbenzenesulfonate isopropylamine salt | 10-12 oz/A | | HS-COC | | | | ✓ |
| ACCERO ULTRA | Titan Pro SCI | Phytobland paraffinic oil, sorbitan ethoxylate fatty acid ester and polyoxymethylene modified alkyl amine | 8-12 oz/A | | HS-COC | | | | ✓ |
| ADVATROL | CHS | Methylated soybean oil, soybean oil, branched alkyl phenol ethoxylate | 0.5-1 pt/A | MSO based HSOC | HS-MVOC | ✓ | | | ✓ |
| ATMOS | Heritage Landscape Supply | Methylated soybean oil, sorbitan fatty acid esters, high fructose corn syrup | 0.5-4 qt/100 gal | | HS-MVOC | ✓ | ✓ | | ✓ |
| BARROLA HL | Heartland Ag, Inc. | Phytobland paraffinic oil and surfactant blend | 10-12 oz/100 gal | | HS-COC | ✓ | | | ✓ |
| BEANOIL | Drexel Chemical Co. | Soybean oil 60% and alkyl and alkylaryl polyoxyethylene glycol 40% | 0.25-4 pt/A | Contains antifoam | HS-VOC | ✓ | | | ✓ |
| CENTERPOINT | KALO, Inc. | Methylated soybean oil, ethoxylated sorbitan fatty acid ester, branched alkyl phenol ethoxylate | 2-4 qt/100 gal | High surfactant MSO, DRA, penetrant | HS-MVOC | | | ✓ | ✓ |
| CHS AGGRESTROL | CHS | Methylated soybean oil, soybean oil, branched alkyl phenol ethoxylate | 0.5-1 pt/A | MSO based HSOC | HS-MVOC | ✓ | | | ✓ |
| CHS PENETREC | CHS | Soybean oil, branched alkyl phenol ethoxylate, and alkyl phenol ethoxylate | 0.5-1 pt/A | VOC (soybean oil) based HSOC | HS-VOC | ✓ | | | ✓ |
| CHS SITKA | CHS | Lubricating oils (petroleum), hydrotreated spent; polyethylene glycol mono (branched p-nonylphenyl) ether; oleic acid | 0.5-1 pt/A | COC (petroleum) based HSOC | HS-COC | ✓ | | | ✓ |
| CHS WOODSIDE | CHS | Methylated seed oil, branched alkyl phenol ethoxylate, tall oil fatty acid | 0.5-1 pt/A | MSO based HSOC | HS-MVOC | ✓ | | | ✓ |
| CLARION | KALO, Inc. | Methyl soyate, methylated silicones, ethoxylated castor oil | 3-16 pt/100 gal | MSO-organosiloxane blend. Replaces high-load oil adjuvants | HS-MVOC | | | ✓ | |
| COVREX | CHS | Soybean oil, branched alkyl phenol ethoxylate, and alkyl phenol ethoxylate | 0.5-1 pt/A | VOC (soybean oil) based HSOC | HS-VOC | ✓ | | | ✓ |
| DESTINY HC | Winfield United | Methylated soybean oil, high fructose corn syrup, sorbitan fatty acid esters | 0.75-2 qt/A | Seed oil based ingredients | HS-MVOC | ✓ | ✓ | | ✓ |
| DIPLOMAT | Rosen's, Inc. | Paraffinic petroleum oil and surfactant/emulsifier blend 60-40 | 0.375-0.5% | | HS-COC | | | | ✓ |
| EXCHANGE | Precision Laboratories, LLC | Paraffin oil and surfactant blend | 10-12 oz/100 gal | | HS-COC | ✓ | | | ✓ |
| FERVUS | Titan Pro SCI | Methyl soyate, sorbitan monolaurate poly(oxyethylene) ether and dodecylbenzenesulfonate isopropylamine salt | 10-12 oz/A | High surfactant modified vegetable oil | HS-MVOC | | | | ✓ |
| FERVUS ULTRA | Titan Pro SCI | Methyl soyate, sorbitan monolaurate poly(oxyethylene) ether, mono and diglycerides of C8-C18 fatty acids and dodecylbenzenesulfonate isopropylamine salt | 8-12 oz/A | High surfactant modified vegetable oil | HS-MVOC | | | | ✓ |

| High Surfactant Oil Concentrates (HSOC) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Product Name** | **Company** | **Principle Functioning Agents** | **Use Rate** | **Technical Comments** | **HSOC Type** | **Turf** | **Aquatic** | **Organic** | **ROW** |
| FINAN HL | Heartland Ag, Inc. | Methyl soyate, alkylphenol derivatives, fatty acid derivative and glycol ether | 10-12 oz/100 gal | CPDA certified | HS-MVOC | ✓ | | | ✓ |
| FS COC SUPREME | GROWMARK, Inc. | Paraffin oil, C11-15 alcohol ethoxylates | 0.375-0.5% | Replaces ordinary COC at 50% normal use rate | HS-COC | ✓ | | | ✓ |
| FS COGENT | GROWMARK, Inc. | Paraffinic oil, sorbitol ethoxylate fatty acid ester and polyoxymethylene modified alkyl amine | 3-4 pt/100 gal | | HS-COC | | | | ✓ |
| FS INTERFACE | GROWMARK, Inc. | Proprietary blend of surfactants, water conditioning agents and phytobland base oil | 1-6 pt/100 gal | Acidic activator adjuvant blend, oil plus surfactant | HS-COC | | | | ✓ |
| GLACIER-EA | Wilbur-Ellis Company | Methylated seed oil, polyoxyethylene polyol fatty acid ester and butyl lactate | 4-32 oz/A | NPE-free, aquatic approved; seed oil based | HS-MVOC | ✓ | ✓ | | ✓ |
| HIGH LOAD | Wilbur-Ellis Company | Paraffin base oil, sorbitol fatty acid alkoxylates, alkyl ethoxylates | 0.25-1% | High surfactant, petroleum oil-based | HS-COC | | | | ✓ |
| HILO COC | CNI | Paraffin oil and surfactant blend | 0.375-0.5% | | HS-COC | | | | ✓ |
| HILO MSO | CNI | Methylated Soyate, alkylphenol and fatty acid derivatives and glycol ether and constituents ineffective as adjuvant | 2 qt/100 gal | | HS-MVOC | | | | ✓ |
| HOT MES | Drexel Chemical Co. | Methylated seed oil 60%, surfactant emulsifier blend 40% | 0.25-4 pt/A | Use a minimum of 4-8 oz/A or 50% of the rate of either standard methylated seed oil or crop oil | HS-MVOC | ✓ | | | ✓ |
| IN-CERT HIGHSURF MSO | Farm Business Network | Methyl seed oil, alkylphenol ethoxylates, fatty acids | 2-3 qt/100 gal or 10-12 oz/A | | HS-MVOC | ✓ | | | ✓ |
| KIXYT | Precision Laboratories, LLC | Methyl canolate, alkylphenol derivatives, fatty acid derivative and glycol ether | 10-12 oz/100 gal | | HS-MVOC | ✓ | | | ✓ |
| LUFTECH | Heartland Ag, Inc. | Surfactants, water conditioning agents and phytobland base-oil | 1-6 pt/100 gal | | HS-COC | | | | ✓ |
| OPTIFY HSCOC | Winfield United | Paraffin oils, alcohols, C11-C15-secondary, ethoxylated | 0.5% | High Surfactant Crop Oil Concentrate | HS-COC | | | | ✓ |
| OPTIFY HSMSO | Winfield United | Methyl soyate, alkylphenol ethoxylates, fatty acids | 0.25-0.75% | High Surfactant Methylated Seed oil | HS-MVOC | | | | ✓ |
| ORO-HSMOC | Rovensa Next | Soybean oil methyl esters, oxirane, methyl-, polymer w/oxirane, monoether w/2-ethylhexanol | 8-64 fl oz/100 gal | Contains: orange oil. For use with pesticides that require Methylated Seed Oils or Crop Oil Concetrates | HS-MVOC | | | ✓ | |
| QUADFIRE | Meherrin Ag & Chemical Company | Surfactants, water conditioning agents and phytobland base-oil | 0.5-6 pt/100 gal | | HS-COC | | | | ✓ |
| SAVVY | CHS | Methylated seed oil, branched alkyl phenol ethoxylate, tall oil fatty acid | 0.5-1 pt/A | MSO based HSOC | HS-MVOC | ✓ | | | ✓ |
| SHOCKER | Rovensa Next | Methylated seed oil, alcohol alkoxylate | 8-64 fl oz/100 gal | High Surfactant Methylated Oil Concentrate | HS-MVOC | | | ✓ | |
| SIMPLYX | Precision Laboratories, LLC | Surfactants, water conditioning agents and phytobland base-oil | 1-6 pt/100 gal | | HS-COC | | | | ✓ |
| SIZZLE | Farm Business Network | Monocarbamide dihydrogen sulfate, distillates (petroleum), solvent-dewaxed light paraffinic, alcohol ethoxylate | 0.5-3 qt/100 gal | | HS-COC | | | | ✓ |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| STAKE | CHS | Lubricating oils (petroleum), hydrotreated spent; polyethylene glycol mono (branched p-nonylphenyl) ether; oleic acid | 0.5-1 pt/A | COC (petroleum) based HSOC | HS-COC | ✓ | | | ✓ |
| STRIKELOCK | Winfield United | Coconut fatty acid, glycerol phthalic anhydride resin; methyl esters (C16-18) of fatty acids; soybean oil fatty acids, methyl esters | 8 oz/A or 0.5% | Seed oil based. Replacement for traditional MSO or COC | HS-MVOC | ✓ | | | ✓ |
| SUPERB HC | Winfield United | Phytobland paraffinic oil, high fructose corn syrup, polyoxyethylene sorbitan fatty esters | 4 pints or 0.5% | COC replacement, compatible with glyphosate | HS-COC | | ✓ | | ✓ |
| TAPRAN | CHS | Methyl soyate; isodecanol, ethyoxylated, phosphate ester; tallow alkyl amines ethoxylated | 0.5-1 pt/A | MSO based HSOC with tallow amine + water conditioner | HS-MVOC | ✓ | | | ✓ |
| TWISTER HL | Meherrin Ag & Chemical Company | Paraffin oil and surfactant blend | 3-4 pt/100 gal | | HS-COC | ✓ | | | ✓ |

## Crop Oil Concentrates (COC)

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|
| AGRI-DEX | Helena Agri-Enterprises | Proprietary blend of heavy range paraffin base petroleum oil polyol fatty acid esters polyethoxylated derivatives | See label | Corn oil derived emulsifiers | | ✓ | | ✓ |
| BRANDT CROP OIL CONCENTRATE | Brandt Consolidated, Inc. | Paraffinic petroleum oil, alchohol ethoxylate | 2 pt/A | Premium 83%/17% COC | ✓ | | | ✓ |
| CHEM-OIL 83 | Coastal Agrobusiness, Inc. | Paraffinic oil plus emulsifiers | 1-2 pt/A | | | | | ✓ |
| CITRU-SHIELD | Drexel Chemical Co. | Proprietary blend of agricultural paraffinic oil and nonionic emulsifying surfactants | 0.5-10 pt/A | 2 pt is intended to replace 1 gal of conventional spray oil | ✓ | | | ✓ |
| CROP OIL | CHS | Lubricating oils (petroleum), hydrotreated spent, tall oil fatty acids, alkyl phenol ethoxylate | 1-2 pt/A | | ✓ | | | ✓ |
| CROP OIL CONCENTRATE | KALO, Inc. | Paraffinic petroleum oil, tall oil fatty acids, alkylphenol ethoxylates | 1-8 pt/100 gal | Fertilizer tolerant. Paraffinic oil with emulsifier. Approved for use with Engenia | | | ✓ | |
| CROP-KICK+ | Brewer International | Blend of petroleum oils and nonionic surfactants | 0.063-0.5% | Penetrant, wetter, spreader and deposition aid | ✓ | ✓ | | ✓ |
| HERBIMAX | Loveland Products, Inc. | Petroleum hydrocarbons (light paraffinic distillate and odorless aliphatic petroleum solvent) alkylphenol ethoxylate, tall oil fatty acid | 1-4 pt/A | High performance, multi-component crop oil/ surfactant blend | | ✓ | | |
| IN-PLANT | Farm Business Network | Mineral oil & secondary alcohol ethoxylate | 1-2 pt/A or 1-2% | | | | ✓ | |
| KROP KARE COC | Heartland Ag, Inc. | Mineral oil and secondary alcohol ethoxylates | 1-2 pt/A or 1% | | | | ✓ | |
| PEPTOIL | Drexel Chemical Co. | Paraffinic base petroleum oil plus blend of linear ethoxylated alcohol | 1-4 pt/A | Low foam | | | | ✓ |
| PRIMARY | Drexel Chemical Co. | Paraffinic base petroleum oil plus blend of linear ethoxylated alcohol | 0.25-4 pt/A | Wetter, spreader | | | | ✓ |
| PURE & SIMPLE CROP OIL | KALO, Inc. | Paraffinic oil, tall oil fatty acids, branched alkyl phenol ethoxylates | 4-8 pt/100 gal | Paraffinic oil and emulsifier | | | ✓ | |
| R.O.C. | Wilbur-Ellis Company | Paraffin base petroleum oil, surfactant blend | See label | Standard petroleum-base COC | | | | ✓ |
| R-WAY | Rosen's, Inc. | Paraffinic petroleum oil plus surfactant/emulsifier 83-17 | 1-2 pt/A | Contains antifoam | | | | ✓ |

## Vegetable Oil Concentrates (VOC)

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|
| BRANDT M.S.O. | Brandt Consolidated, Inc. | Modified seed oil, alkyl phenol ethoxylate and free fatty acids | 0.5-2 pt/A | Modified vegetable oil concentrate with high load surfactant | ✓ | | | ✓ |
| BRANDT SIDEKICK | Brandt Consolidated, Inc. | Cottonseed oil, alkyl phenol ethoxylate | 2 pt/A | Cottonseed oil provides for high margin of crop safety | ✓ | | | |
| CONTINGENT | Helena Agri-Enterprises | Methylated seed oil (MSO), C10-C12 aromatic hydrocarbons, alkyl amine ethoxylate, alcohol ethoxylate phosphate ester | 1% | Add to the tank last | | | | ✓ |
| DLZ | Helena Agri-Enterprises | Methylated seed and paraffin oil, nonionic surfactants | 0.5-1% | Optimized for use as a deposition agent | | | | ✓ |
| FIRE ZONE | Helena Agri-Enterprises | Methylated seed oil, polyethoxylated aliphatics, phosphorated polyethoxlated alkanoates | 1% | | | | | ✓ |
| HOME RUN | Conklin Co., Inc. | Methylated soybean oil plus emulsifier package | 1-2 pt/A | Easily dispersed for trouble-free mixing | ✓ | ✓ | | ✓ |
| MSO CONCENTRATE WITH LECITECH | Loveland Products, Inc. | Methylated seed oils plus emulsifying surfactants | 1-2 pt/A | | | ✓ | | |
| NOBLE | Winfield United | Methyl soyate, polyethylene glycol mono (branched p-nonylphenol) ether | 1-2 pt/A | | ✓ | | | |
| RECOIL | KALO, Inc. | Vegetable oil ethoxylate, tall oil fatty acids, and emulsifiers | 1-4 pt/100 gal | Nonionic seed oil concentrate. Oil replacement adjuvant | | | ✓ | |
| SPECTRUM | Coastal Agrobusiness, Inc. | Methylated seed oils plus nonionic surfactant | 0.25-0.75% | Contains organosilicone surfactant | | | | ✓ |
| SUNDANCE II | Rosen's, Inc. | Methylated soyoil plus surfactants and emulsifiers 90-10 | 1.5-2 pt/A | Contains antifoam | | | | ✓ |
| SYNERGY | Coastal Agrobusiness, Inc. | Methylated seed oils, surfactants and emulsifiers | 0.5-1% | | | | | ✓ |

## Modified Vegetable Oils (MVO or MSO)

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|
| ALLEVIATE | Wilbur-Ellis Company | Methylated seed oil, ethoxylated sorbitan fatty acid ester and seed oil | 1-2 qt/100 gal | Penetrant, deep deposition into canopy, decreased drift, spreading and coverage, NPE-free | ✓ | | | ✓ |
| BARROLA HL ULTRA | Heartland Ag, Inc. | Phytobland paraffinic oil, sorbitol ethoxylate fatty acid ester and polyoxymethylene alkyl amine | 6-12 oz/A | | | | | ✓ |
| BRACER | KALO, Inc. | Methylated seed oil, alcohol ethoxylate phosphate ester, alkyl amine alkoxylate | 1 gal/100 gal | Wetting agent and penetrant | | | ✓ | |
| CALDUS | Titan Pro SCI | Methyl soyate, sorbitan monolaurate poly(oxyethylene) ether and dodecylbenzenesulfonate isopropylamine salt | 20-24 oz/A | | | | | ✓ |
| CHS EMULATE | CHS | Methyl soyate, branched alkyl phenol ethoxylate | 0.5-1.5 pt/A | | ✓ | | | ✓ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| CNI TRIO | CNI | Proprietary blend of methylated seed oil and organosilicone surfactant and constituents ineffective as a spray adjuvant | 16-48 oz/100 gal | | | | | ✓ |
| CNI TRIO-W | CNI | Organosilicone, methylated vegetable oil, poly fatty acid esters, polyethyloxylated esters, non ionic surfactants and constituents ineffective as adjuvant | 4-8 oz/10 gal | | | | | ✓ |
| COMPETITOR | Wilbur-Ellis Company | Ethyl oleate, sorbitan alkylpolyethoxylate ester, dialkyl polyoxyethylene glycol | 1-2 pt/A | Enhances wetting and spreading, 100% biodegradeable for aquatic use, NPE-free | | ✓ | | |
| FASTSTRIKE ADVANCED | Meherrin Ag & Chemical Company | Methylated seed oils, polyalkyleneoxide modified heptamethyltrisiloxane, nonionic surfactants & emulsifiers | 1-2 pt/100 gal | | | | | ✓ |
| FINAN HL ULTRA | Heartland Ag, Inc. | Methyl soyate, sorbitol ethoxylate fatty acid ester, alcohol derivatives and poloxyethylene modified alkyl amine | 6-12 oz/A | | | | | ✓ |
| FS ARGENT | GROWMARK, Inc. | Methyl canolate, sorbitol ethoxylate fatty acid ester alcohol derivatives and polyoxyethylene modified alkyl amine | 3-4 pt/100 gal | | | | | ✓ |
| FS OPTIVIX | GROWMARK, Inc. | Methyl canolate, alkylphenol ethoxylates, fatty acid derivative and glycol ether | 10-12 oz/A | | | | | ✓ |
| HASTEN-EA | Wilbur-Ellis Company | Ethylated seed oil, polyoxyalkylene fatty ester | 1-4 pt/A | NPE-free, aquatic approved | ✓ | ✓ | | ✓ |
| HI-SURF MSO | KALO, Inc. | Methylated seed oil and surfactant blend | 4-8 pt/100 gal | Low use-rate MSO with NPE free surfactant 60/40 | | | ✓ | |
| IN-CERT ORGANSIL MSO | Farm Business Network | Methyl esters of fatty acids, polyether modified heptamethyltrisiloxane & poloxalene | 1-6 pt/100 gal | | | | | ✓ |
| METHYLATED SEED OIL | KALO, Inc. | Methyl soyate, branched alkyl phenol ethoxylate, dimethylsiloxane polymer | 1.5-2 pt/A | NPE-Free vegetable oil, NIS | ✓ | | ✓ | |
| MODIFIED VEGETABLE OIL | KALO, Inc. | Methyl soyate, polyethylene glycol nonylphenyl ether, methylated silicones | 1.5-2 pt/A | Approved for use with Xtendimax and Engenia. Contains anifoaming agent | ✓ | | ✓ | |
| MOMENTA | KALO, Inc. | UAN fertilizer, methylated vegetable oil, alkyl phenol ethoxylate, tallow amine ethoxylate, polydimethylsiloxane / 32% UAN | 2.5 gal/100 gal | UAN fertilizer, MSO blend. Single additive for full compliance with Kixor instructions | | | ✓ | |
| PACIFIC PREMIUM TRIO | CNI | Proprietary blend of methylated seed oil and organosilicone surfactant and constituents ineffective as a spray adjuvant | 16-48 oz/100 gal | | | | | ✓ |
| PERSIST ADVANCED | Precision Laboratories, LLC | Methylated canola oil, polyether modified heptamethyltrisiloxane and poloxalene | 1 - 6 pt/100 gl | | | | | ✓ |
| PERSIST ULTRA | Precision Laboratories, LLC | Methyl esters of canola oil, alkyl phenol ethoxylate | 1.25-2 pt/A or 1% | | | | | |
| RENEGADE-EA | Wilbur-Ellis Company | Methyl soyate, ammonium nitrate, urea and other components | 1-3 gal/100 gal | NPE-free, aquatic approved, unique blend | | ✓ | | ✓ |
| RIPARA | Precision Laboratories, LLC | Methylated canola oil, alkyl amine polyalkoxylates and alcohol ethoxylate | 6-12 oz/A | | | | | ✓ |
| SALIA | Precision Laboratories, LLC | Paraffinic oil, alkyl amine polyalkoxylates and alcohol ethoxylate | 6-12 oz/A | | | | | ✓ |
| SUN CONTROL+ | Brewer International | Blend of methylated seed oil, wetter, organosilicone, and humectant | See label | Buffering, deposition, sticker, wetting | ✓ | ✓ | | ✓ |
| SUN WET | Brewer International | Blend of methylated seed oil and emulsifiers | 0.25-0.5% | Pentetrant, deposition aid and emulsifier | ✓ | ✓ | | ✓ |
| SUN WET+ | Brewer International | Blend of methylated seed oil and emulsifiers | 0.25-0.5% | APE-free pentetrant, deposition aid and emulsifier | ✓ | ✓ | | ✓ |

## Modified Vegetable Oils (MVO or MSO)

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|
| SUNENERGY | Brewer International | Blend of methylated vegetable oil, and organosilicone surfactants | 0.125-0.5% | | | ✓ | | |
| SUNENERGY+ | Brewer International | Blend of methylated vegetable oil, and organosilicone surfactants | 0.125-0.5% | Superwetter, pentetrant, deposition aid and emulsifier | ✓ | ✓ | | ✓ |
| SUPER SPREAD MSO | Wilbur-Ellis Company | Methyl soyate nonylphenol ethoxylate | 1-4 pt/A | 100% active | ✓ | ✓ | | ✓ |
| TURBULANCE | Heritage Landscape Supply | Methylated vegetable oil, polyether modified polysiloxane, alkyl phenol ethoxylate | 2-16 pt/100 gal | | ✓ | ✓ | | ✓ |
| UPLAND MSO | CHS | Methyl soyate, Branched alkyl phenol ethoxylate | 0.5-1.5 pt/A | | ✓ | | | ✓ |

## Nitrogen Sources

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|
| BRONC MAX | Wilbur-Ellis Company | Ammonium sulfate, sodium alkyl sulfobenzene salt and 2-hydroxy-1,2,3-propanetricarboxylic acid | 0.125-1% | AMS replacement | ✓ | ✓ | | ✓ |
| CONDITION ND | GarrCo Products Inc. | Concentrated ammonium sulfate, blend of water conditioning agents | 0.5-2 qt/100 gal | Contains almost 1 lb AMS/qt | ✓ | ✓ | | ✓ |
| IMPERIAL AMS | Rosen's, Inc. | Spray grade ammonium sulfate | 8.5-17 lb/100 gal | Highly soluble granule | | | | ✓ |
| LIQUID AMS | CHS | Ammonium sulfate | 2.5% | 1 gal contains 3.4 lbs of AMS | ✓ | | | ✓ |
| MEDIATE PLUS | CHS | Ammonium sulfate, sodium acrylate acrylamide polymer, dimethylsiloxane polymer | 2.5% | 1 gal contains 3.4 lbs of AMS + polyacrylamide DRA | ✓ | | | ✓ |
| QUEST | Helena Agri-Enterprises | Proprietary blend of hydroxycarboxylic acid, phosphoric acids, ammonium sulfate, and polyacrylic acid | 0.125-0.5% | Water conditioner, AMS replacement, buffer | | ✓ | | |

## Deposition (Drift Control) and/or Retention Agents with and without Ammonium Sulfate and/or Defoamer

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | | | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Comments | AMS | Defoamer | | | | |
| 38-F | Brandt Consolidated, Inc. | Polyacrylamide polymer | 2-4 oz/100 gal | Liquid 32% active drift retardant | | | | | | ✓ |
| 41-A | Brandt Consolidated, Inc. | Polyacrylamide, polysaccharid polymers | 1-7 oz/100 gal | Dry 30% active drift retardant | | | | | | ✓ |
| ACCELERATOR 2 | Rosen's, Inc. | Proprietary blend of water conditioners, drift reducing polymers, surfactants, humectants, crop enhancement components and antifoam | 10 oz/A | Crop (guar) based polymer, water conditioning, surfactant and yield enhancement technologies | | ✓ | ✓ | | | ✓ |
| AD-HERE SP | Innvictis Crop Care, LLC | Pinene (terpene) polymers, petrolatum, alyl amine ethoxylate | 4-16 oz/100 gal | | | | | | ✓ | |
| ALLOWANCE-EA | Wilbur-Ellis Company | Modified vegetable fatty acid, vinyl ester, polyoxyethylene-polyoxypropylene copolymer, and sodium dioctylsulfosuccinate | 10-16 fl oz/100 gal | Labeled for air blast spray use | | | | ✓ | | ✓ |
| AMS PLUS | Coastal Agrobusiness, Inc. | AMS plus propietary blend of polyacrylamides and dimethylpolysiloxanes | 2.5% | | ✓ | ✓ | | | | ✓ |
| ANNECTO | Titan Pro SCI | Drift reduction polymers and water conditioning salts | 2-3 qt/100 gal | | | | | | | ✓ |
| ARRAY | Rosen's, Inc. | Proprietary blend of milled ammonium sulfate, organic polymers and antifoam | 9 lb/100 gal | Crop (guar) based, micro-homogenized | ✓ | ✓ | | | | ✓ |
| ARRAY LINK | Rosen's, Inc. | Proprietary blend of milled ammonium sulfate, organic polymers and antifoam | 2.2 lb/A | Crop (guar) based polymer and micro-homogenized | ✓ | | ✓ | | | ✓ |
| ASTONISH | Rosen's, Inc. | Proprietary blend of water conditioners, drift reducing polymers, surfactants and humectants | 54 oz/100 gal | Crop (guar) based polymer | | | ✓ | | | ✓ |
| AVANT XTRA | KALO, Inc. | Polyoxyethylene sorbitan fatty acid ester, soybean oil ethoxylate, copolymer of alpha- and beta-pinene | 1-2 qt/100 gal | Deposition/DRA, NIS, Penetrant | | | | | ✓ | ✓ |
| BACKDROP | Meherrin Ag & Chemical Company | Ammonium sulfate, N-methyl-N-oleoyltaurine sodium salt, & 2-hydroxypropyl guar gum | 2.5% | | | | | | | ✓ |
| BACKDROP+ | Meherrin Ag & Chemical Company | Ammonium sulfate, polyethylene glycol & 2-hydroxypropyl guar gum | 1.25-2.5% | | ✓ | | | | | ✓ |
| BOAST | KALO, Inc. | Sorbitan ethoxylate, seed oil ethoxylate, polyterpene resins | 2-3 oz/A in 5-25 GPA | For use with herbicides, desiccants, insecticides, fungicides and PGRs | | | | | | ✓ |
| BORDER XTRA 8L | Precision Laboratories, LLC | Ammonium sulfate, N-methyl-N-oleoyltaurine sodium salt, & 2-hydroxypropyl guar gum | 2.5% | | ✓ | | | | | ✓ |
| BORDER XTRA 8L+ | Precision Laboratories, LLC | Ammonium sulfate, polyethylene glycol & 2-hydroxypropyl guar gum | 1.25-2.5% | | ✓ | | | | | ✓ |
| BRANDT ONSITE | Brandt Consolidated, Inc. | Polyvinyl polymer | 1-5 qt/100 gal | Easy to mix 1% polyvinyl polymer, deposition aid and drift retardant | | | | | | ✓ |
| BRONC PLUS DRY EDT | Wilbur-Ellis Company | AMS, carbonyl diamine, polyoxyethylene, polyoxypropylene, beta-hydroxy-tricarboxylic acid, polyacrylamide, dimethylsiloxane | 10-20 lb/100 gal | Milled and screened for increased solubility | ✓ | ✓ | ✓ | ✓ | | ✓ |

## Deposition (Drift Control) and/or Retention Agents with and without Ammonium Sulfate and/or Defoamer

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | | | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Comments | AMS | Defoamer | | | | |
| BRONC TRIPLE | Wilbur-Ellis Company | Ammonium sulfate, 1,2,3-propanetriol, alkyl polyglycoside, phosphoric acid, citric acid and polyacrylamide | 2-4 qt/100 gal | For hard water >500 ppm use higher rates | ✓ | ✓ | ✓ | | | ✓ |
| BULL'S EYE | Conklin Co., Inc. | Polyvinyl polymer (polyacrylamide) | 1-8 oz/100 gal | Aerial and high pressure rates | | | ✓ | ✓ | | ✓ |
| CAPSULE | Rosen's, Inc. | Polyethylene glycol, choline chloride, guar gum extract | 2-4 qt/100 gal | Crop (guar) based polymer | | | ✓ | | | ✓ |
| CHS ACUVANT | CHS | Modified vegetable oil, refined soybean oil | 3 fl oz/A | Oil emulsion based drift control | | | ✓ | | | ✓ |
| CHS TRAPLINE PRO 2 | CHS | Trisodium citrate dihydrate, alkylpolyglucoside C9-11, diethylene glycol | 0.625% | All-in-one DRA (polyacrylamide) for dicamba applications without VRA | | ✓ | ✓ | | | ✓ |
| CHS TRAPLOCK | CHS | Acetic acid, potassium hydroxide, 2-hydroxy1,2,3-propane tricarboxylic acid | 1% | All-in-one DRA (polyacrylamide) for dicamba applications with VRA | | | ✓ | | | ✓ |
| COGNITIVE 1 | CHS | Polyethylene glycol, choline chloride, guar gum | 0.5% | Guar gum DRA | | | ✓ | | | ✓ |
| COMPLETE | Conklin Co., Inc. | Spray grade ammonium sulfate and drift retardant (polyvinyl polymer) blend | 2.5-5% | 3.4 lb AMS/gal, deposition, drift reduction | ✓ | | | ✓ | | ✓ |
| CONCORD | KALO, Inc. | Ammonium nitrate, urea, alkoxylated triglyceride, methyl soyate, amine salt of alkyl ethoxylate phosphate, trisiloxane | 4 qt/100 gal | Approved for use with Regiment | | | | | ✓ | ✓ |
| CONTRAST | Rosen's, Inc. | Proprietary blend of water conditioning agents and drift reduction polymers | 2.5 lb/100 gal | Crop (guar) based polymer | | | ✓ | | | ✓ |
| CONTROL | GarrCo Products Inc. | Proprietary drift mitigation/deposition aid (concentrated polymer blend) | 1-6 oz/100 gal | Low use rates | | | ✓ | ✓ | | ✓ |
| CONTROL AMS | GarrCo Products Inc. | Drift mitigation/deposition aid (polymer blend), ammonium sulfate, and antifoam/defoamer | 2.5-5 gal/100 gal | | ✓ | ✓ | ✓ | ✓ | | ✓ |
| CONTROL WM | GarrCo Products Inc. | Drift mitigation/deposition aid (concentrated polymer blend) | 1-6 oz/100 gal | No AMS | | | ✓ | ✓ | | ✓ |
| CORRAL POLY | Winfield United | Polyvinyl polymer (polyacrylamide) | 1-8 oz/100 gal | | | | | | | ✓ |
| CROSSHAIR | Wilbur-Ellis Company | Amine salts of organic acids and modified seed oils | 4 oz/A | In the tank last | | | ✓ | ✓ | | ✓ |
| DC-4 | CNI | Proprietary combination of oils and emulsifiers and constituents ineffective as a spray adjuvant | See label | | | | ✓ | ✓ | | |
| DILIGENCE-EA | Wilbur-Ellis Company | Vinyl ester polymer, polyethylene glycol-polypropylene glycol and sodium dioctylsulfosuccinate | 1-4 fl oz/A | Drift control agent (ground only), solid state dispersion | | | ✓ | ✓ | | ✓ |
| DIRECT RS | Precision Laboratories, LLC | Polyvinyl polymer (polyacrylamide) | 1-4 oz/100 gal | | | | ✓ | | | ✓ |
| DRIFT-X | Coastal Agrobusiness, Inc. | Modified vegetable oil, amine salts of organic acids and organic acid | 4-6 fl oz/A | Add to the tank last | | | ✓ | | | ✓ |
| DRIFT-X | KALO, Inc. | Soybean oil, octadecanoic acid, 12-hydroxy-homopolymer, ester with alpha,alpha',alpha"- 1,2,3-propanetriyltris[omega-hydroxypoly(oxy-1,2-ethanediyl)], poly(oxy-1,2-ethanediyl), alpha-(1-oxo-9-octadeceyl)-omega-hydroxy-(Z)- | 2-4 oz/acre | Oil emulsion, drift reduction agent, deposition agent for spray canopy coverage | | | | | ✓ | ✓ |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| DROPLEX | Heritage Landscape Supply | Methyl ester of fatty acids, polyoxyethylene sorbitan fatty acid ester, vegetable oil | 4-16 oz/100 gal | | | | ✓ | ✓ | | ✓ |
| ENLIVEN | Rosen's, Inc. | Proprietary blend of ammonium sulfate, surfactants, polymers, crop enhancement components and antifoam | 16 oz/A | Crop (guar) based polymer, water conditioning, surfactant and yield enhancement technologies | ✓ | ✓ | ✓ | | | ✓ |
| ENSCRIBE | Hefty Seed Company | Trisodium citrate dihydrate, d-glucopyranose, oligomeric, C9-11 alkyl glycosides & propylene glycol | 1-2 qt/100 gal | Tank mixes that include 2,4-D choline salt | | | | | | ✓ |
| EVEN L PRO | Farm Business Network | Ammonium sulfate, nonionic surfactant and drift reduction polymers | 1-2.5% | | ✓ | | | | | ✓ |
| FS INTENTION | GROWMARK, Inc. | Polyethylene glycol, choline chloride, guar gum | 0.5% | | | | | | | ✓ |
| FS INTENTION DVA | GROWMARK, Inc. | Proprietary blend of potassium acetate, guar, beta-hydroxy tricarballylate, alkyl ethanaminium salt and water conditioning salt | 1.25% | Tank mixes that include dicamba | | | | | | ✓ |
| FS LAYOUT 2.0 | GROWMARK, Inc. | Soybean oil, castor oil derivative, oleate | 4-8 oz/A | Deposition and retention, reduce driftable fines | | | | | | ✓ |
| FS MAXSUPREME | GROWMARK, Inc. | Ammonium sulfate, N-methyl-N-oleoyltaurine sodium salt, 2-hydroxypropyl gurar gum | 2.5% | Guar based adjuvant, provides 8.5 lb AMS and optimum level of HPG polymer | ✓ | | | | | ✓ |
| FS TALENT | GROWMARK, Inc. | Polyoxyethylene sorbitan fatty acid ester, mono-and diglycerides of C8-C18 fatty acides | 0.125-0.5% | | | | | ✓ | ✓ | ✓ |
| FS TRANSFORM PLUS | GROWMARK, Inc. | Proprietary blend of drift reduction polymers, ammoniated ions, water conditioning agents and antifoam | 0.25-1% | | | ✓ | | | | ✓ |
| GATEWAY PLUS | Hefty Seed Company | Ammonium sulfate,N-Methyl-N-oleoyltaurine sodium salt, & 2-hydroxypropyl guar gum | 2.5% | | ✓ | | | | | ✓ |
| GRANUM | Titan Pro SCI | Proprietary blend of water conditioning agent, drift reduction agent, humectant and nonionic surfactant | 1-2 qt/100 gal | | | | | | | ✓ |
| GROUNDED | Helena Agri-Enterprises | Proprietary blend of aliphatic hydrocarbons, hexahydric alcohol ethoxylated and fatty acids | See label | | | | ✓ | ✓ | | ✓ |
| GUIDANCE-EA | Wilbur-Ellis Company | Solid state vinyl ester suspension and vegetable fatty acids | 0.5-2 fl oz/A | For aerial drift control applications | | | | ✓ | | ✓ |
| HEL-FIRE | Helena Agri-Enterprises | Aminated phosphoric, carboxylic acids, sulphurated amides, depostion aids | 0.25-1% | Contains corrosion inhibitors | | | | | | ✓ |
| HENO D | Heartland Ag, Inc. | Drift reduction polymers, ammoniated ions, water conditioning agents and antifoam | 0.25-1% | | | ✓ | | | | ✓ |
| HOLZIT | Drexel Chemical Co. | Proprietary blend of ammonium sulfate, drift reduction polymers, humectant, and antifoam agent | 9 lb/100 gal | | ✓ | ✓ | ✓ | | | ✓ |
| IN-PLACE | Wilbur-Ellis Company | Amine salts of organic acids, aromatic acid, aromatic and petroleum distillate | See label | | | | ✓ | ✓ | | ✓ |
| INTACT | Precision Laboratories, LLC | Polyethylene glycol, choline chloride, guar gum | 4 pt/100 gal | | | | | | | ✓ |
| INTACT ADVANCED | Precision Laboratories, LLC | Drift reduction polymers and water conditioning salts | 4-6 pt/100 gal | Tank mixes that include dicamba | | | | | | ✓ |
| INTACT MAXX | Precision Laboratories, LLC | Potassium acetate, guar, beta-hydroxy tricarballylate, alkyl ethanaminium salt and water conditioning salt | 1.75-1.875% | Tank mixes that include dicamba | | | | | | ✓ |
| INTACT PRO | Precision Laboratories, LLC | Guar gum | 1-3 pt/100 gal | | | | | | | ✓ |

## Deposition (Drift Control) and/or Retention Agents with and without Ammonium Sulfate and/or Defoamer

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | | | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Comments | AMS | Defoamer | | | | |
| INTERLOCK | Winfield United | Methylated seed oil, polyoxyethylene sorbitan fatty acid ester vegetable oil | 4-6 oz/A | See label for additional rates | | | ✓ | ✓ | | ✓ |
| JUSTIFIED | Helena Agri-Enterprises | Modified seed oils, C15 – C40 alkanes, glucitol octadecenoate, polyethoxylated glucitol, derivatives and polydimethylsiloxane | 1 qt/100 gal | Add to the tank last | | | ✓ | | | ✓ |
| KABAK MAX | Heartland Ag, Inc. | Trisodium citrate dihydrate, alkyl polyglucoside, 1,2,3 propanetriol and polyacrylamide | 1-2 qt/100 gal | Tank mixes that include 2,4-D choline salt | | | | | | ✓ |
| KABAK ULTRAMATE | Heartland Ag, Inc. | Potassium acetate, pyranose ether-carboxylate complex, sorbitan monolaurate, poly dimethyl siloxane | 26 oz/A | Tank mixes that include dicamba | | ✓ | | | | ✓ |
| LATCH NG | Hefty Seed Company | Soybean oil, castor oil derivative, oleate | 4-8 oz/A | | | | | | | ✓ |
| LOCKAMBA 2.0 | Hefty Seed Company | Drift reduction polymers and glycerine gluco-citric water conditioner complex | 4-6 pt/100 gal | Tank mixes that include dicamba | | ✓ | | | | ✓ |
| LOCKAMBA MAXX | Hefty Seed Company | Potassium acetate, pyranose ether-carboxylate complex, sorbitan monolaurate, poly dimethyl siloxane | 26 oz/A | Tank mixes that include dicamba | | ✓ | | | | ✓ |
| MACH 5 | Rosen's, Inc. | Proprietary blend of surfactants, polymers, crop enhancement components, ammonium sulfate, and antifoam | 8 oz/A | Crop (guar) based polymer, water conditioning, surfactant and yield enhancement technologies | ✓ | ✓ | | | | ✓ |
| NEXUM NG | Precision Laboratories, LLC | Soybean oil, castor oil derivative, oleate | 4-8 oz/A | | | | | | | ✓ |
| OCULUS MAXX | Helena Agri-Enterprises | Proprietary water conditioning agents, alkyl ethoxylates, dimethylpolysiloxane and deposition polymers | 1% | Does not contain ammonium nitrogen or acidifers | | ✓ | ✓ | | | ✓ |
| PACIFIC PREMIUM DRA | CNI | Soybean oil; castor oil, ethoxylate, oleate | See label | | | | | | | ✓ |
| PACIFIC PREMIUM TRANSCEND | CNI | Polyoxyethylene sorbitan fatty acid ester, mono- and diglycerides of C8-C18 fatty acids and constituents ineffective as spray adjuvant | 0.125-0.5% | | | | | ✓ | ✓ | ✓ |
| PARACHUTE II | CHS | Methylated seed oil, copolymer of alpha- and beta-pinene, 2-ethylhexanol, ethoxylated, propoxylated | 0.0625-0.125% | Oil emulsion and resin based drift control | | | ✓ | | | ✓ |
| PETRICHOR | CHS | Modified vegetable oil, refined soybean oil | 3 fl oz/A | Oil emulsion based drift control | | | ✓ | | | ✓ |
| PLEXUS II | Rosen's, Inc. | Proprietary blend of Methylated Seed Oil, polymers and surfactants | 10-12 oz/A | Crop (guar) based polymer | | | | | | ✓ |
| POINTBLANK WM | Helena Agri-Enterprises | Proprietary polyvinyl polymer emulsion | 1-2 oz/100 gal | Drift reduction polymer concentrate | | | | | | ✓ |
| POLY CONTROL 2 | Brewer International | Polyacrylamide, emulsifiers and other ingredients | 3-8 oz/100 gal | Drift control, penetrator, sticker and water sinker | | | | ✓ | | ✓ |
| REIGN | Loveland Products, Inc. | Polyvinyl polymer (polyacrylamide) | 0.25-2.5% | Polyacrylamide drift control/DRA | | | | ✓ | | |
| REIGN LC | Loveland Products, Inc. | Polyvinyl polymer (polyacrylamide) | 1-4 oz/100 gal | Polyacrylamide drift control/DRA concentrate | | | | ✓ | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| RESPONSE DX | CNI | A proprietary blend of polyalkoxy ethers of phospho (-azoethyl and -inosityl), oleic acid and alcohol ethoxylate | 1-4 pt/100 gal | | | | | ✓ | | |
| SEQUESTER PLUS | Hefty Seed Company | Ammonium sulfate, glycerin, phosphoric acid, polyacrylamide and silicone emulsion | 1-4 qt/100 gal | | ✓ | ✓ | | | | ✓ |
| STALLION | Rosen's, Inc. | Proprietary blend of Methylated Seed Oil, polymers, surfactants and crop enhancement components | 16 oz/A | Crop (guar) based polymer, MSO, surfactant and yield enhancement technologies | | | | | | ✓ |
| STRIKE FORCE | Loveland Products, Inc. | Lecithin, lactic acid and derivatives, polyethoxylated esters and alcohols | 2 qt/100 gal | Non-AMS water conditioning | | ✓ | ✓ | | | |
| TACKLE-DRA | Atlantic-Pacific Agricultural Co., Inc. | Trisodium citrate dihydrate, alkyl polyglucoside C9-11, diethylene glycol | 1-4 qt/100 gal | Approved for use with auxin herbicides, see label. Contains no AMS | | | ✓ | | | ✓ |
| TACTIC | Loveland Products, Inc. | Synthetic latex plus organosilicone surfactant fluid | See label | Sticker with organosilicone | | | | ✓ | | |
| TARAGON ELITE | Precision Laboratories, LLC | Pyranose ether-carboxylate complex, 1,2,3 propanetriol, polyhydric alcohols and poly dimethyl siloxane | 4-6 pt/100 gal | Tank mixes that include dicamba | | | | | | ✓ |
| TARAGON MAX | Precision Laboratories, LLC | Potassium acetate, pyranose ether-carboxylate complex, sorbitan monolaurate, poly dimethyl siloxane | 26 oz/A | Tank mixes that include dicamba | | ✓ | | | | ✓ |
| TARAGON XTRA | Precision Laboratories, LLC | Trisodium citrate dihydrate, d-glucopyranose, oligomeric, C9-11 alkyl glycosides and propylene glycol | 1-2 qt/100 gal | Tank mixes that include 2,4-D choline salt | | | | | | ✓ |
| TRACKER | Rosen's, Inc. | Proprietary blend of vegetable oils, modified oils, fatty acids, alkoxylated triglycerides, alkoxylated alcohols, and ionic emulsifiers | 4 oz/A | | | | | | | ✓ |
| TRANSCEND | CNI | Polyoxyethylene sorbitan fatty acid ester, mono- and diglycerides of C8-C18 fatty acids and constituents ineffective as spray adjuvant | 0.125-0.5% | | | | | ✓ | ✓ | ✓ |
| TRANSPORT PLUS | Precision Laboratories, LLC | Ammonium sulfate, glycerin, phosphoric acid, polyacrylamide and silicone emulsion | 0.25-1% | | ✓ | ✓ | | | | ✓ |
| ULTRALOCK | Winfield United | Methylated soybean oil, acrylic polymer, and ethoxylated sorbitan fatty acid ester | 4-6 oz/A | DRT + high quality DRA with deposition aid | | | | | | ✓ |
| VECTOR | Rosen's, Inc. | Proprietary blend of milled ammonium sulfate, organic polymers and antifoam | 2 lb/100 gal | Crop (guar) based polymer and micro-homogenized | ✓ | ✓ | | | | ✓ |
| VERACITY ELITE II | CHS | Trisodium citrate dihydrate, alkylpolyglucoside C9-11, diethylene glycol | 0.625% | All-in-one DRA (polyacrylamide) for dicamba applications without VRA | | ✓ | ✓ | | | ✓ |
| VERASURE | CHS | Acetic acid, potassium hydroxide, 2-hydroxy1,2,3-propane tricarboxylic acid | 1% | All-in-one DRA (polyacrylamide) for dicamba applications with VRA | | | ✓ | | | ✓ |
| WITHSTAND NG | Heartland Ag, Inc. | Soybean oil, castor oil derivative, oleate | 4-8 oz/A | | | | | | | ✓ |

| Compatibility Agents | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Product Name** | **Company** | **Principle Functioning Agents** | **Use Rate** | **Technical Comments** | **Turf** | **Aquatic** | **Organic** | **ROW** |
| CO-MIX | Coastal Agrobusiness, Inc. | Alkylaryl polyoxyethylene glycol phosphate esters | 0.125-0.375% | Includes buffers | | | | ✓ |
| COMPEX EXTRA | KALO, Inc. | Alkyl polyglycoside, 2-ethylhexyl sulfate sodium salt | 1-3 pt/100 gal | For pesticides, liquid fertilizer, curative, preventative | ✓ | | ✓ | |
| COMPLETE COMPATIBILITY | Winfield United | Alcohol ethoxylate phosphate ester, isopropanol, dipropylene glycol monomethyl ether | 0.125-0.375% | Anionic formulation that aids in compatibilty of liquid fertilizer and pesticide tank mixes | ✓ | | | ✓ |
| CONVERT | MFA, Inc. | Polyethylene glycol tridecyl ether phosphate, ethylene glycol monobutyl ether | 1-6 pt/100 gal | | ✓ | | | ✓ |
| CONVERT | Precision Laboratories, LLC | Polyethylene glycol tridecyl ether phosphate, ethylene glycol monobutyl ether | 1-4 pt/100 gal | | ✓ | | | ✓ |
| FIT-2G | Farm Business Network | Alcohol ethoxylate phosphate ester, 2-butoxyethanol | 1-6 pt/100 gal | | ✓ | | | ✓ |
| FS TANKMAX | GROWMARK, Inc. | Polyoxyethylene glycol tridecyl ether phosphate, ethylene glycol monobutyl ether | 1-6 pt/100 gal | | ✓ | | | ✓ |
| KOMBIND | Conklin Co., Inc. | Isopropyl alcohol, phosphate esters | 1-24 oz/100 gal | Buffering, acidifier, compatibility | ✓ | ✓ | | ✓ |
| MIX-ALL ELITE COMPATIBILITY AGENT | Rosen's, Inc. | Proprietary blend of emulsifiers, phosphate ester surfactants and wetting agents | 0.125-0.5% | Use to ensure thorough mixing and dispersibility of pesticides with cold water, hard water and fertilizers | ✓ | | | ✓ |
| PROTERIS COMPATIBILITY AGENT | Titan Pro SCI | Polyethylene glycol tridecyl ether phosphate, ethylene glycol monobutyl ether | 1-4 pt/100 gal | | ✓ | | | ✓ |
| RECON | Meherrin Ag & Chemical Company | Alcohol ethoxylate phosphate ester, 2-butoxyethanol | 1-6 pt/100 gl | | ✓ | | | ✓ |

| Buffering Agents and/or Acidifiers | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Product Name** | **Company** | **Principle Functioning Agents** | **Use Rate** | **Technical Comments** | **Turf** | **Aquatic** | **Organic** | **ROW** |
| 800 PLUS | CNI | A proprietary blend of acidifier, surfactants and drift reduction technologies | 1-4 pt/100 gal | | | ✓ | | ✓ |
| ALPHA SHOT | Rosen's, Inc. | Proprietary blend of spray solution acidifiers | 4-16 oz/100 gal | Acidifier and buffering adjuvant | ✓ | | | ✓ |
| ATTITUDE | Rovensa Next | Citric acid | 1-8 pt/100 gal | Water conditioning agent and acidifier | ✓ | ✓ | ✓ | |
| BRANDT NO FOAM B | Brandt Consolidated, Inc. | Octyl phenoxy polyethoxy ethanol, linear alkyl sulfonates, ethanolamine | 0.5-3 pt/100 gal | Phyto-bland safe for sensitive crop use | ✓ | | | |
| BRANDT PH ADJUST | Brandt Consolidated, Inc. | Citric acid, potassium hydroxide and potassium nitrate | 0.5-1 pt/100 gal | Citric acid based acidifier and buffering agents | ✓ | | | |
| CHS FIXATE | CHS | Diethylene glycol, propylene glycol, monocarbamide dihydrogen sulfate | 0.5-0.75% | Contains AMADS (provides nitrogren and sulfate groups) | ✓ | | | ✓ |
| CHS WHEELHOUSE PRO | CHS | Trisodium citrate dihydrate, alkyl polyglucoside, carbamide | 0.5% | | ✓ | | | ✓ |
| CITRIPHASE | Coastal Agrobusiness, Inc. | Aliphatic polycarboxylate | 0.25-0.5% | Liquid formulation | | | | ✓ |
| CLIMB | Wilbur-Ellis Company | Carbonic acid, dipotassium salt | See label | Alkalinity agent, raises pH | | | | ✓ |
| DENALI-EA | Wilbur-Ellis Company | Polyoxyalkylene polyol fatty acid ester, alcohol ethoxylate and 2-hydroxy-1,2,3-propanetricarboxylic acid | 1-4 pt/100 gal | NPE free, reduces pH, aquatic approved | ✓ | ✓ | | ✓ |
| FORGE | CHS | Propanoic acid, lecithins, alcohol ethoxylate | 0.25-0.5% | | ✓ | ✓ | | ✓ |
| JACKHAMMER | CHS | Diethylene glycol, propylene glycol, monocarbamide dihydrogen sulfate | 0.5-0.75% | Contains AMADS (provides nitrogen and sulfate groups) | ✓ | | | ✓ |
| JACKHAMMER ELITE | CHS | Trisodium citrate dihydrate, alkyl polyglucoside, carbamide | 0.5% | | ✓ | | | ✓ |
| LEEWAY | KALO, Inc. | Trisodium citrate dihydrate, d-glucopyranose, oligomeric, C9-11-alkyl glycosides, monocarbamide dihydrogen sulfate | 2-4 qt/100 gal | AMS-free water conditioner, buffering agent, humectant. Approved for use with Engenia and Xtendimax | ✓ | | ✓ | |
| NEW BALANCE | Precision Laboratories, LLC | Alkyl polyethoxy ether, 2-hydroxy-I, 2,3-propane-tricarboxylic acid and dimethylpolysiloxane antifoam | 8-40 oz/100 gal | | | | | ✓ |
| OPTIMA | Helena Agri-Enterprises | Proprietary blend of polyethoxylated alkyl amines, alkyl polyoxyethylene glycols and organic acids | 0.25-1% | Absorption, surfactants, buffering | | ✓ | | ✓ |
| SEQUEL | Helena Agri-Enterprises | Blend of hydroxy carboxylic and phosphoric acids, and ammonium sulfate | 0.125-0.75% | AMS replacement, proprietary blend | ✓ | | | |
| SPEEDWAY | Winfield United | Citric acid, alkylamine glycolethers and phosphate ester | 0.25-1% | | ✓ | | | ✓ |
| SURALTA | CHS | Potassium hydroxide/ethanoic acid | 20 fl oz/A | Volatility reducing agent (VRA) for dicamba applications | ✓ | | | ✓ |
| TRI-FOL | Wilbur-Ellis Company | 2-Hydroxy-1,2,3-propanetricarboxylic acid, calcium chloride | 0.063-0.5% | Increases pH with buffering | ✓ | | ✓ | |
| WATER FX | KALO, Inc. | Ammonium sulfate, 2-hydroxy-1,2,3-propanetricarboxylic acid | 0.5-4 lb/100 gal | Dry, low use rate water conditioner, acidifier. Contains AMS | ✓ | | ✓ | |

## Water Conditioning Agents

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|
| AMS 4.0 | CNI | Liquid ammonium sulfate, dimethylpolysiloxane and constituents ineffective as a spray adjuvant | 0.25-5% | | | | | ✓ |
| AMS ADVANTAGE | MFA, Inc. | Ammonium sulfate, glycerol, phosphoric acid, polyacrylamide | 1-3 qt/100 gal | 2 lb AMS per gallon | ✓ | | | |
| AMS STANDARD | KALO, Inc. | Ammonium sulfate | Up to 34% w/w | Dry AMS, milled and screened for enhanced solubility | | | ✓ | |
| AMS/NIS | KALO, Inc. | Ammonium sulfate, alkyl polyglycoside, polydimethylsiloxane | 1.25-5 gal/100 gal | 2.5 gallons delivers 8.5 pounds AMS/100 | | | ✓ | |
| AMS-BREW | Brewer International | Blend of polyphosphates, diols, defoamer and AMS | 0.25-0.5% | Ammonium sulfate based water conditioner | ✓ | ✓ | | ✓ |
| AMSPREAD | CNI | Proprietary blend of nonionic surfactants and formulation aids and ammonium sulfate | 1-2.5% | | | | | ✓ |
| ASCENSION | Wilbur-Ellis Company | Urea, ammonium nitrate, and alcohol ethoxylate | 2-4 qt/100 gal | Raises pH, provides water conditioning and surfactant | | | | ✓ |
| BRANDT ADJULOCK II | Brandt Consolidated, Inc. | Trisodium citrate dihydrate, alkyl polyglucoside, diethylene glycol, polyacrylamide | 12 fl oz/A | Non-AMS water conditioner, DRT, and surfactant | ✓ | | | ✓ |
| BRANDT ADJULOCK PRIME | Brandt Consolidated, Inc. | Tripotassium citrate monohydrate, alkylpolyglucoside, ethonic acid, potassium hydroxide | 19.2 fl oz/A | Non-AMS water conditioner, DRT, surfactant, and volatility agent | | | | ✓ |
| BREEZE XL | Heritage Landscape Supply | Ammonium sulfate, citric acid and sodium dimethyl benzene sulfonate | 1-2 oz/1 gal | | ✓ | | | ✓ |
| BRONC | Wilbur-Ellis Company | Ammonium sulfate | 2.5-5% | Liquid AMS | ✓ | | | ✓ |
| CAPSTAR | KALO, Inc. | Oxirane, 2-methyl-, polymer with oxirane, mono(2 ethylhexyl) ether, alcohol ethoxylate phosphate ester, soybean oil, ethoxylated | 2-3 qt/100 gal | AMS-free water conditioner. DRA. Surfactant. Contains antifoam | | | ✓ | ✓ |
| CHECK-POINT | KALO, Inc. | Trisodium citrate dihydrate, sodium hexametaphosphate, sodium tripolyphosphate, polyacrylamide, dimethylpolysiloxane | 2 lb/100 gal | Dry AMS free water conditioner | | | ✓ | ✓ |
| CHEMPRO CP-20 | Chemorse, Ltd. | Ammonium sulfate, hydroxy carboxylic and phosphoric acid | 0.125-0.625% | | ✓ | | | |
| CHOICE TRIO | Loveland Products, Inc. | Poly(oxy-1,2-ethanediyl), alpha-phenyl-omega-hydroxy-phosphate, tris(2-hydroxyethyl)amine, 2-hydroxy-1,2,3-propanetricarboxylic acid | 1-2 qt/100 gal | AMS replacement | ✓ | ✓ | | |
| CHOICE WEATHER MASTER | Loveland Products, Inc. | Blend of salts of polyacrylic, hydroxy carboxylic, propionic acids, phosphate ester, ammonium sulfate | 0.25-0.5% | AMS, water conditioner | | ✓ | | |
| CONDITION | GarrCo Products Inc. | Concentrated ammonium sulfate, blend of water conditioning agents, and defoamer/antifoam system | 0.5-2 qt/100 gal | Contains 1 lb AMS/qt and antifoam | ✓ | ✓ | | ✓ |
| CORREX WC | Hefty Seed Company | Ethylenediamineacetic acid (EDTA) and casustic potash (potassium hydroxide) | 0.5-1% | | | | | ✓ |
| CRUZADO | KALO, Inc. | Monocarbamide dihydrogen sulfate, glycerin, polyoxyethylene tallow amine | 1-4 qt/100 gal | pH modifier, humectant, water conditioner | | | ✓ | |
| CUT-RATE | Wilbur-Ellis Company | Ammonium sulfate, 2-hydroxy-1,2,3-propanetricarboxylic acid | 3-4 lb/100 gal | AMS, reduces pH | | | | ✓ |
| CYNDER | Wilbur-Ellis Company | 2-hydroxypropane-1,2,3-tricarboxylic acid; amines, tallow alkyl ethoxylated; alcohols, C11-C14, C13 rich, ethoxylated, phosphate | 1-4 qt/100 gal | Water Conditioning with some AMADS | ✓ | | | ✓ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| DIVERSIFY | Helena Agri-Enterprises | Aminocarboxylates, 2-hydroxypropane 1,2,3 tricarboxylates, and polyaliphatic carboxylates | 1-5 pt/100 gal | Compatible with pesticides which are sensitive to reduced pH or prohibit acidifiers - ammonium nitrogen free | ✓ | | | ✓ |
| EMINENCE | Meherrin Ag & Chemical Company | Ethylenediaminetetraacetic acid (EDTA), potassium hydroxide | 2-4 qt/100 gl | | ✓ | | | ✓ |
| ENACT | Rosen's, Inc. | Proprietary blend of sequestrants, chelating agents, ammonium sulfate and polysiloxane | 0.125-0.5% | 2 pt/100 gal <300 ppm water hardness, 4 pt/100 gal >300 ppm | | | | ✓ |
| EVEN LR | Farm Business Network | Carboxylic acids, phosphoric acids, ammoniated ions and formulation aids | 1-2 qt/100 gal | | | | | ✓ |
| FRACTION | KALO, Inc. | Ammonium sulfate, 2-hydroxy-1,2,3-propanetricarboxylic acid | 3-4 lb/100 gal | Dry, low use rate water conditioner, acidifier. Contains AMS | | | ✓ | |
| FS AMS LDF | GROWMARK, Inc. | Nitrogen and sulfur | 2.5-5% | 3.4 lb AMS/gal plus antifoam | | | | ✓ |
| FS AMS MAX 2.0 | GROWMARK, Inc. | Ammonium sulfate, alkyl polyglycoside and polyoxyethylene undecyl ether | 1.25-5% | | | | | ✓ |
| FS AMS MAX DR | GROWMARK, Inc. | Proprietary blend of ammonium sulfate, nonionic surfactant and drift reduction polymers, dimethylpolysiloxane antifoam | 1-2.5% | | ✓ | | | ✓ |
| FS CERTIN | GROWMARK, Inc. | Ethylendiamtetraacetic acid, potassium hydroxide | 2-4 qt/100 gal | | | | | ✓ |
| HYDROMEND | Atlantic-Pacific Agricultural Co., Inc. | Propietary blend of ingredients | 8-32 oz/100 gal | Contains no AMS | ✓ | | | ✓ |
| LEEWAY II | KALO, Inc. | Trisodium citrate dihydrate, alkyl polyglucoside C9-11, diethylene glycol | 1-4 qt/100 gal | Humectant. AMS-free water conditioner | | | ✓ | ✓ |
| LEEWAY ULTRA | KALO, Inc. | Tripotassium citrate, amine alkoxylates, alcohol phosphates | 2-8 pt/100 gal | AMS-free water conditioner, penetrant | | | ✓ | |
| MAXWAY II | KALO, Inc. | Alkali metal salts of carboxylic acid, alkylpolyglucoside, acrylamide polymer | 26 oz/15 gal/A | Volatility reducing agent | | | ✓ | ✓ |
| ONE-AP XL | KALO, Inc. | Ammonium sulfate, urea, polyoxyethylene polyoxypropylene polymer | 10-20 lb/100 gal | AMS with 0.25% v/v NPE-free NIS, deposition aid, contains antifoaming agent | | | ✓ | |
| OPTIFY 4X | Winfield United | Proprietary blend of potassium acetate, guar, beta-hydroxy tricarballylate, alkyl ethanaminium salt, alcohol alkoxylate | 1.75-1.85% | Chelating water conditioner with NIS | | | | ✓ |
| OPTIFY A | Winfield United | Ammonium sulfate, D-arabino-hex-2-ulo-pyranose | 2.5-5% | Liquid AMS and NIS combination | | | | ✓ |
| OPTIFY D30 | Winfield United | Ammonium sulfate, D-glucopyranose, oligomeric, C10-16-alkyl glycosides, N,N-dimethyl-n declyamine oxide | 1.25-5% | Liquid AMS, NIS, and drift reduction | | | | ✓ |
| OPTIFY L27 | Winfield United | Alkyl polyglucoside, ammonium sulfate, 1,2,3-propanetricarboxylic acid, 2-hydroxy-, trisodium salt, dihydrate | 1-3 qt/100 gal | Water conditioning acidifier with AMS and NIS | | ✓ | | ✓ |
| OPTIFY Z37 | Winfield United | Methylated seed oil, alcohol ethoxylate phosphate ester, and branched alkyl phenol ethoxylate | 2-4 qt/100 gal | Water conditioning acidifier with Methylated Seed Oil | | | | ✓ |
| RESTORE | KALO, Inc. | AMS, 1,2,3-trihydroxy propane, phosphoric acid | 2-3 qt/100 gal | Water conditioner and acidifier. Contains ammonium sulfate | ✓ | | ✓ | |
| RETRIBUTION | Wilbur-Ellis Company | Ammonium sulfate, citric acid and sodium alkyl sulfobenzene salt | See label | Excellent partner for glufosinate, alleviates antagonistic effect of hard water, excellent wetting and spreading, buffers pH | | | | ✓ |
| SEQUESTER ULTRA | Hefty Seed Company | Monocarbamide dihydrogen sulfate, polyethylene glycol mono (branched p-nonylphenyl) ether, and 1,2,3-propanetriol | 1-2 qt/100 gal | | | | | ✓ |
| SMOKE | Helena Agri-Enterprises | Trihydroxy carboxylic acid, alkyl amine alkoxylate, alkyl alkoxylated phosphate amine, urea sulfuric acid complex | 0.25-0.5% | Does not contain ammonium nitrogen | ✓ | | | ✓ |

## Water Conditioning Agents

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|
| SPECTRA AMS | KALO, Inc. | Ammonium sulfate, ammonium nitrate, phosphoric acid, polyacrylamide & dimethylpolysiloxane | 2.5-5 gal/100 gal | Range of full-load AMS with drift suppression, enhanced deposition | | | ✓ | ✓ |
| SPECTRA MAX TANK MIX | KALO, Inc. | Ammonium sulfate, glycerol, phosphoric acid | 2-3 qt/100 gal | Low use-rate water conditioning agent, humectant, DRA. Contains ammonium sulfate | | | ✓ | ✓ |
| SPRAY-START | KALO, Inc. | Ammonium sulfate, polyacrylamide polymer, dimethylpolysiloxane | 9-12 lb/100 gal | Dry water conditioning agent, DRA, deposition aid, antifoaming agent. Contains ammonium sulfate | ✓ | | ✓ | ✓ |
| SUMMIT | KALO, Inc. | Ammonium sulfate, drift reduction/deposition enhancing polymers and antifoam agent | 9-17 lb/100 gal | Contains ammonium sulfate. Contains anifoaming agent | | | ✓ | ✓ |
| TETHER | Farm Business Network | Trisodium citrate dihydrate, polyhydric alcohols and 1,2,3 propanetriol | 1-6 pt/100 gal | Tank mixes that include dicamba | | | | ✓ |
| TETHER 24 | Farm Business Network | Citric acid trisodium salt dihydrate, alkyl polyglucoside and 1,2-propanediol | 1-2 qt/100 gal | Tank mixes that include 2,4-D choline salt | | | | ✓ |
| TETHER DRA | Farm Business Network | Trisodium citrate dihydrate, polyhydric alcohols and glycerol | 4-6 pt/100 gal | Tank mixes that include dicamba | | | | ✓ |
| THRESHOLD | KALO, Inc. | Sodium tricarbalylate, alkyl polyglucoside, 1,2,3-propanetriol, polyacrylamide, polydimethylsiloxane | 1-2 qt/100 gal | AMS Free | ✓ | | | |
| TRANSPORT LPH | Precision Laboratories, LLC | Carboxylic acids, phosphoric acid and ammoniated ions | 1-2 qt/100 gal | | | | | ✓ |
| TRANSPORT ULTRA | Precision Laboratories, LLC | Monocarbamide dihydrogen sulfate, polyethylene glycol mono(branched p-nonylphenyl) ether, and 1,2,3-propanetriol | 1-2 qt/100 gal | | | | | ✓ |
| U-SURP | Drexel Chemical Co. | Blend of polyacrylates, polyhydroxy-tricarboxylic acid, dipotassium phosphate and formulation aids | 1-5 pt/100 gal | AMS replacement | ✓ | | | ✓ |
| VALCHECK III | Winfield United | Proprietary blend of volatility reducing agent, water conditioning agent and drift reduction polymer | 1.4% | Non-AMS water conditioner + VRA + DRA | | | | ✓ |
| VOLIMINATE | Precision Laboratories, LLC | Potassium hydroxide/ethanoic acid | 20-32 oz/A | | | | | ✓ |

## Basic Blends

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|
| CHS AXON | CHS | Ammonium nitrate, alcohol ethoxylate, ammonium hydroxide | 0.5-1% | | ✓ | | | ✓ |
| LINKAGE | CHS | Ammonium nitrate, alcohol ethoxylate, ammonium hydroxide | 0.5-1% | | ✓ | | | ✓ |

## Spreader-Stickers and/or Extenders

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|
| AIRSTICK | Heritage Landscape Supply | Pinene (diterpene) polymer, mineral oil, and secondary alcohol ethoxylate | 4-16 oz/100 gal | Needs sunlight to form protective film | ✓ | | | ✓ |
| ANTERO-EA | Wilbur-Ellis Company | 4-Nonylphenol, formaldehyde resin, propoxylated; castor oil, ethoxylated | 2-32 fl oz/100 gal | Resists wash off, improves spreading for more coverage | ✓ | ✓ | | ✓ |
| BINDE | AgXplore International, LLC | Polymeric terpenes | 1 pt/A | Extender nonionic sticker-spreader | ✓ | | | |
| BIO-FILM EXTRA | KALO, Inc. | Alkylphenyl, hydroxyl-polyoxyethylene, polymerized resins and fatty acids, paraffin base petroleum oil | 4-16 oz/100 gal | Spreader-sticker, for fungicides and insecticides | | | ✓ | |
| BRANDT ORGANICS SKH STICKER | Brandt Consolidated, Inc. | Bentonite, lactose, casein | 1-2 lb/100 gal | Premium dry sticker/extender | | | ✓ | |
| BRANDT ORGANICS UMBRELLA | Brandt Consolidated, Inc. | Terpene resins. Tall oil fatty acids and alkyl phenol ethoxylate | 4-8 fl oz/100 gal | Premium low-rate sticker/extender OMRI certified | ✓ | | ✓ | ✓ |
| CHEM-STIK | Precision Laboratories, LLC | Emulsifiable polyethylene and alkyl phenoxy polyethoxy ethanol | 4-16 oz/100 gal | | ✓ | | | ✓ |
| CHEM-STIK LPH | Precision Laboratories, LLC | Alkylaryl polyoxyethanol glycol ether, alkyphenolic resin, alkylaryl polyoxyethanol phosphate esters, tricarboxylic acid | 8-48 oz/100 gal | Nonionic spreader-sticker, pH buffer | ✓ | | | ✓ |
| COFILM | Coastal Agrobusiness, Inc. | di-1-p-menthene | See label | Low molecular weight terpenic polymer | ✓ | | | ✓ |
| FS CROPSTIK | GROWMARK, Inc. | Emulsifiable polyethylene and alkyl phenoxy polyethoxy ethanol | 4-8 oz/100 gal | Nonionic spreader-sticker | ✓ | | | ✓ |
| HYDROVANT | Corbet | Polyvinyl alcohol | 12.8 oz/100 gal or 0.1% | Mixing order is critical, see label. CPDA approved, can use with pre and post emerge herbicides | ✓ | ✓ | | ✓ |
| I'VOD | Brewer International | 100% Oil blend including D-Limonene plus emulsifier | See label | Drift control, penetrator, sticker with pine fraganced oil | | ✓ | | ✓ |
| I'VOD C | Brewer International | 100% Oil blend including D-Limonene plus emulsifier | See label | Drift control, penetrator, sticker with orange fraganced oil | | ✓ | | ✓ |
| LOVERT | Brewer International | 100% Hydrocarbon constituents, and emulsifiers | See label | Drift control, penetrator, sticker | | ✓ | | ✓ |
| MAINSTAY | KALO, Inc. | Alkyl polyoxyethylene ethers, polymerized resins, and triethanol amine salts of oleic acid (TOFA derived), petroleum distillates | 1-4 pt/100 gal | Spreader-sticker. Deposition Aid. Surfactant | ✓ | | ✓ | |
| NU FILM 17 | Miller Chemical Co. | Pinene (diterpenes) polymers, hydrocarbon resin, petrolatum a-(p-dodecylphenyl)-omega-hydroxpoly (oxyethylene) | 1 pt/A | Sticker, extender, add Nu Film 17 last | ✓ | | | |
| NU FILM P | Miller Chemical Co. | Pinene (polyterpenes) polymers, a-(p-dodecylphenyl)-omega-hydroxypoly (oxyethylene) | 4-16 oz/A | Spreader-sticker, add Nu Film P last | | | ✓ | |
| OCTANE 90 | KALO, Inc. | Ethoxylated fatty acid methyl esters, hexylene glycol, tall oil | 1-2 qt/100 gal | Unique spreader-acitvator, humectant. Formulated for use and improvement of phenoxy herbicides. Contains antifoaming agent | | | ✓ | |
| PINENE II | Drexel Chemical Co. | Polymeric terpenes | 0.25-2 pt/A | Extender and sticker | ✓ | | | |
| PINENE II (OMRI) | Drexel Chemical Co. | Pinene (diterpene) polymer, alcohol ethoxylate, methylated seed oil | 1-4 pt/A | Extender and sticker | ✓ | | ✓ | |

## Spreader-Stickers and/or Extenders

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|
| POLY FILM-R+ | Brewer International | Proprietary blend of polymers,terpenes, methylated seed oil and other ingredients | 0.5-1 pt/100 gal | Spreader-sticker | | ✓ | | ✓ |
| REGUARD | Wilbur-Ellis Company | Polymeric terpenes | 8-16 fl oz/A | Non foaming, may be applied aerial, ground or concentrate sprayer | | | | ✓ |
| SURFIX-P | Helena Agri-Enterprises | Pinene polymers | 0.5-2 pt/100/gal | Polymer based on pine resin | ✓ | | | ✓ |
| TRANSFIX | Winfield United | Pinene polymer, alkylphenol ethoxylate | 4-6 oz/A | Spreader-sticker | | | | ✓ |

## Adjuvants plus Foliar Fertilizer

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|
| ENCOURAGE CLASSIC | Rovensa Next | Alcohol ethoxylate, humic acid | 1-8 pt/A | 2-1-2 fertilizer. Derived from urea, monopotassium phosphate, potassium nitrate, iron DTPA, manganese EDTA | ✓ | | | |

## Soil Adjuvant

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|
| ADVANTAGE SOIL PENETRANT | Wilbur-Ellis Company | Ammonium alkyl ether sulfate | 4-32 fl oz/A | Increased water infiltration, NPE-free | ✓ | | | ✓ |
| AQUATE MAX | Wilbur-Ellis Company | Oxirane, methyl-, polymer with oxirane | 1-2 pt/A | Improves water management, not water infiltration | | | | ✓ |
| AQUICARE | Heritage Landscape Supply | Ethylene oxide-propylene oxide copolymer, polyethylene glycol, ethoxylated, 2,4 Di-tert-amylphenol | 2-14 oz/1,000 ft2 | | ✓ | | | |
| AQUICARE GR | Heritage Landscape Supply | Ethylene oxide-propylene oxide copolymer, polyethylene glycol, ethoxylated, 2,4 Di-tert-amylphenol | 100 lb/A | Granular form | ✓ | | | |
| AQUIFLO PLUS | Heritage Landscape Supply | Alcohols C12-14, ethoxylated | 0.75-5 oz/1,000 ft2 | | ✓ | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| AQUISYNC | Heritage Landscape Supply | Ethylene oxide-propylene oxide copolymer, sodium bis(2-ethylhexyl) sulfosuccinate | 0.5-6 oz/1,000 ft2 | | ✓ | | | |
| ATTACH | Loveland Products, Inc. | Pinene (terpene) polymers, petrolatum, a-(p-dodecylphenyl)--omega-hydroxypoly (oxyethylene) | 1-2 pt/A | For use with soil applied pesticides | | | ✓ | |
| EFFICAX | Wilbur-Ellis Company | Esterified seed oil | 4-16 fl oz/A | Pre-emergent soil adjuvant | ✓ | ✓ | | ✓ |
| FS CAPTIS | GROWMARK, Inc. | Proprietary blend of solvents, ethoxylated nonionic and anionic surfactants | 4-16 fl oz/A | Rate depends on soil texture | | | | ✓ |
| GRAVITATE | KALO, Inc. | Humectants, alkyl polyglucoside, oxirane, methyl, polymer with oxirane, castor oil, ethoxylated | 2 qt/A | Humectant, hygroscopic, soil surfactant blend | ✓ | | ✓ | |
| H20 MAXIMIZER | KALO, Inc. | Alkylpolyglucoside, poloxalene, poly (2-propenamide) | 16 oz/A | Soil surfactant and polymer resin blend | ✓ | | ✓ | |
| H-45 | CHS | Polyoxyethylene-polyoxypropylene copolymer, heptamethyltrisiloxane ethoxylated (8 EO), dimethylsiloxane polymer | 1-2% | | ✓ | | | ✓ |
| HYDRO-WET INJECTABLE | KALO, Inc. | Poloxyalkylene glycol | 12-24 oz/A | NPE-free soil surfactant | ✓ | | ✓ | |
| INFUSE | Loveland Products, Inc. | Modified vegetable oil, esters, fatty acids and ethoxylated derivatives | 1-4 pt/A | Soil penetration varies by soil type | ✓ | | | |
| MEDALIST | KALO, Inc. | Alkylpolyglucoside, poloxalene, polydimethylsiloxane | 16-24 oz/A | NPE-Free soil surfactant for irrigation injection | ✓ | | ✓ | |
| MORTAR | Rovensa Next | Alcohol ethoxylate, sodium lauryl ether sulfate | 1-4 pt/A | Spreader and Soil Wetting Agent | ✓ | ✓ | | |
| ORO-RZ | Rovensa Next | Alcohol ethoxylate, orange oil | 1-4 pt/A | Contains: orange oil. Adjuvant for uniform distribution of soil-applied pesticides and nutrients | ✓ | ✓ | | |
| RAIN-CHECK | KALO, Inc. | 1,2,3-propanetriol, propylene glycol, alcohols, C12-14-secondary, ethoxylated, d-glucopyranose, oligomeric, C9-11 alkyl glycosides | 1 qt/A | Irrigation soil surfactant | ✓ | | ✓ | |
| SOIL FORCE | Meherrin Ag & Chemical Company | Petroleum oil, ethoxylated soybean oil, tall oil fatty acids | 4-16 oz/A | Rate depends on soil texture | | | | ✓ |
| SOILTRATE | CHS | Lubricating oils (petroleum), hydrotreated spent; oleic acid, polyethylene glycol undecyl ether | 1 pt/A | | ✓ | | | ✓ |
| SORBYX | Precision Laboratories, LLC | Petroleum oil, ethoxylated soybean oil, tall oil fatty acids | 4-16 oz/A | Rate depends on soil texture | | | | ✓ |
| STRATUM | KALO, Inc. | 1,2,3-propanetriol, salt of alkyl ether sulfate | 6-12 oz/15-20 gal | Soil penetrant and conditioner. Enhances soil tilth | | | ✓ | |
| SUSTAIN | Miller Chemical Co. | Pinene (terpene) polymers, petrolatum, a-(p-dodecylphenyl-omega-hydroxypoly (oxyethylene) | 4-16 oz/100 gal | Spreader-sticker, Ideal for use with soil applied chemistries | | | ✓ | |
| TOURNAMENT-READY | KALO, Inc. | Alkylpolyglycoside and siloxane solution, polyalkoxylate blend | 16-24 oz/A | NPE-free soil surfactant, penetrant | ✓ | | ✓ | |
| TOURNAMENT-READY PELLETS | KALO, Inc. | Alkylpolyglycoside, siloxane, poloxalene, inert binders | 1 pellet/12,000 sqft | NPE-free soil surfactnat, penetrant | ✓ | | ✓ | |
| VARIANT | KALO, Inc. | Ethoxylated triglyceride, copolymer of alpha- and beta-pinene | 8-32 oz/A | NPE-free. Soil retention agent. Soil surfactant. Contains Quantum technology. Extends the range of residual herbicides | | | ✓ | |

| Antifoam Agents | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Product Name** | **Company** | **Principle Functioning Agents** | **Use Rate** | **Technical Comments** | **Turf** | **Aquatic** | **Organic** | **ROW** |
| ANTIFOAM | Rosen's, Inc. | Dimethylpolysiloxane | 1-2 oz/100 gal | Use prior to foam | | | | ✓ |
| ANTI-FOAM | KALO, Inc. | Polydimethylsiloxane, silicon dioxide | 1-2 oz/100 gal | Curative and preventative foam suppression | ✓ | | ✓ | |
| BRANDT ORGANICS DEFOAMER | Brandt Consolidated, Inc. | Silica filled polydimethylsiloxane | 0.5-2 fl oz/100 gal | OMRI Listed spray tank antifoam/defoaming agent | ✓ | | ✓ | |
| BRANDT TRIPLELINE DEFOAMER | Brandt Consolidated, Inc. | Polydimethylsiloxane | 0.5-2 oz/100 gal | Efficient spray tank antifoam agent | ✓ | | | ✓ |
| BREWER DEFOAMER | Brewer International | Dimethyl-polysiloxane | 1-2 oz/100 gal | Foam control | ✓ | ✓ | | ✓ |
| CHEMPRO A-10 | Chemorse, Ltd. | Dimethylpolysiloxane | 1-2 oz/100 gal | | ✓ | | | |
| DEFOAMER | Rosen's, Inc. | Silicone fluid | 1-2 oz/100 gal | | | | | ✓ |
| ELIMINO | Precision Laboratories, LLC | Polydimethylsiloxane | 1-10 oz/100 gal | OMRI listed | | | ✓ | ✓ |
| FAST BREAK | Winfield United | Dimethylpolysiloxane, methylated silicon | 1-4 oz/100 gal | Antifoam Defoamer | | ✓ | | |
| FOAM EATER | Coastal Agrobusiness, Inc. | Dimethylpolysiloxane | 1-4 oz/100 gal | Squeeze container and 2.5 gal jug | | | | ✓ |
| FOAMFORCE | Heritage Landscape Supply | Dimethylpolysiloxane, dimethylsiloxane polymer | 1 oz/100 gal | | ✓ | ✓ | | ✓ |
| FS ELIMINATOR | GROWMARK, Inc. | Polydimethylpolysiloxane and silica gel | 0.5-4 oz/100 gal | | | | | ✓ |
| FTF DEFOAMER | Wilbur-Ellis Company | Silica filled polydimethylsiloxane, polypropylene glycol and siloxane polyalkyleneoxide copolymer | See label | Highly concentrated, very low use rate | ✓ | | | ✓ |
| GUNDOWN ELITE | Precision Laboratories, LLC | Polydimethylsiloxane and silica gel | 0.5-4 oz/100 gal | | | | | ✓ |
| HEADHUNTER ELITE | Meherrin Ag & Chemical Company | Dimethylpolysiloxane and other antifoaming agents | 0.5-4 oz/100 gal | | | | | ✓ |
| HEAD-OUT | Farm Business Network | Polydimethylsiloxane and silica gel | 0.5-4 oz/100 gal | | | | | ✓ |
| IVC FOAM MARKER | Innvictis Crop Care, LLC | Foam concentrate | 80 oz/100 gal | 100:1 dilution or 12-13 oz/10 gal | ✓ | | | |
| KNOCK-OUT | Conklin Co., Inc. | Polydimethylsiloxane | 1-2 oz/100 gal | Highly effective with high-foaming chemicals | ✓ | ✓ | | ✓ |
| PREVENT | GarrCo Products Inc. | Concentrated silicone antifoam/defoamer | 0.5-2 oz/100 gal | Add before foam | ✓ | ✓ | | ✓ |
| PROTERIS DEFOAMER | Titan Pro SCI | Polydimethylsiloxane and silica gel | 0.5-4 oz/100 gal | | | | | ✓ |
| REGULATOR | Rosen's, Inc. | Proprietary blend of silicone fluids | 1-2 oz/100 gal | Use prior to foam or after foam has occurred | ✓ | | | ✓ |

| Foam Markers | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Product Name** | **Company** | **Principle Functioning Agents** | **Use Rate** | **Technical Comments** | **Turf** | **Aquatic** | **Organic** | **ROW** |
| BENCHMARK | KALO, Inc. | Proprietary blend of active foam agents | 1:160 use ratio | 1:160 highly visible foam, long-lasting | ✓ | | ✓ | |
| BENCHMARK HT | KALO, Inc. | Proprietary blend of active foam agents and formulation aids | 1:100 use ratio | 1:100 Heat and humidity resistant, long-lasting | | | ✓ | |
| ENDURON PSI | Precision Laboratories, LLC | Blend of nonionic and anionic surfactants | 100:1 use ratio | Long-lasting marking foam | | | | ✓ |
| EVERLAST - ALL WEATHER FOAM MARKER | Rosen's, Inc. | Proprietary surfactant blend | 0.63-1% | Concentrated, high expansion foam with wind and heat resistance | | | | ✓ |
| FPS | Heritage Landscape Supply | Sodium alkyl ethoxy sulfate | 3 oz/2 gal | | ✓ | | | ✓ |
| VALCHECK FOAM MARKER | Winfield United | Sulfoesters of alkenols, oligomeric pyranoside ethers of fatty alcohols, 2-hydroxy sec-butyl alcohol | 1 qt/20 gal | Contains blend of high foaming sufactants and foam stabilizing agents | | | | ✓ |



| Scents | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Product Name** | **Company** | **Principle Functioning Agents** | **Use Rate** | **Technical Comments** | **Turf** | **Aquatic** | **Organic** | **ROW** |
| PREFLIGHT | Heritage Landscape Supply | Methyl salicylate, proprietary blend of emulsifiers and defoaming agent | 1-4 oz/100 gal | Also a defoaming product in small tanks, like backpack sprayers | ✓ | ✓ | | ✓ |

## Tank Cleaners and/or Neutralizers

| Product Name | Company | Principle Functioning Agents | Use Rate | Technical Comments | Turf | Aquatic | Organic | ROW |
|---|---|---|---|---|---|---|---|---|
| BRANDT PESTICIDE EQUIPMENT CLEANER | Brandt Consolidated, Inc. | Potassium hydroxide, anticorrosion compounds, sequestering agents,nonionic and Ionic surfactants,polydimethylsiloxane | 1-2 pt/50 gal | Tank cleaner for hard to remove pesticides | ✓ | | | |
| CLEAR-UP | Farm Business Network | Nonionic and anionic surfactants, alkaline salts and formulation aids | 1-2 qt/100 gal | Elevates rinsate pH to degrade vulnerable crop protection products | | | | ✓ |
| ERASE | Precision Laboratories, LLC | Alkalinity builders, emulsifiers, surfactants and formulation aids | 1-2 qt/100 gal clean water | Elevates rinsate pH to degrade vulnerable crop protection products | | | | ✓ |
| F-239 | Brewer International | Concentrated all-purpose solvent/degreaser | See label | Biodegradable, non-corrosive, water soluble | | ✓ | | ✓ |
| FLUSH CONDITIONER | Brewer International | Long chain complex liquid phosphate and oxidizing agents | See label | Sequestrant and pH modifier | | ✓ | | ✓ |
| FS RINSEOUT | GROWMARK, Inc. | Proprietary blend of alkalinity builders, emulsifiers, surfactants and formulation aids | 1-2 qt/100 gal | May require anti-foam | ✓ | | | ✓ |
| K-KLEAN | KALO, Inc. | Cleaning agents in a proprietary transparent emulsion | 1 qt/100 gal | Economical liquid tank cleaner | ✓ | | ✓ | |
| KLEEN-UP ELITE LIQUID TANK CLEANER | Rosen's, Inc. | Proprietary blend of detergents, emulsifiers, alkalinity agents, dispersants, solvents, chelators, and antiscalant chemicals | 0.25% | Approved for cleaning all pesticides and pesticide residues | | | | ✓ |
| OUTRIGHT | CNI | Organic amine, inorganic hydroxides, surfactants and formulation aids | 1-4 qt/100 gal | | | | | ✓ |
| POSTFLIGHT | Heritage Landscape Supply | Proprietary blend of potassium hydroxide, branched alcohol ethoxylate and solvents | 32 oz/100 gal | At full strength, removes colorant and other stains from hard surfaces | ✓ | ✓ | | ✓ |
| PROTERIS TANK CLEANER | Titan Pro SCI | Proprietary blend of formulation aids including alkalinity agents, emulsifiers, and surfactants | 1-2 qt/100 gal | Elevates rinsate pH to degrade vulnerable crop protection products | | | | ✓ |
| REMOVE | GarrCo Products Inc. | Superior tank cleaning system | 1-2 qt/100 gal | Allow sufficient time for the cleaning solution to penetrate the residue | ✓ | ✓ | | ✓ |
| ROYAL CONDITIONER | Brewer International | Blend of inorganic phosphates, phosphoric acid | See label | Line flush for irrigation systems with sequestrants | | ✓ | | ✓ |
| ROYAL FLUSH | Brewer International | Phosphoric acid, blend of inorganic phosphates | See label | Line flush for irrigation systems with sequestrants | | ✓ | | ✓ |
| RUST REMOVER | Brewer International | An acid-based cleaner that dissolves rust and bonds paint | See label | Dissolves rust | | ✓ | | ✓ |
| TANK CLEANER | KALO, Inc. | Complex phosphates, sodium sulfate, sodium carbonate, sodium hydroxide, monocyclic terpenes and nonionic surfactant | 1-2 lb/100 gal | Dry, tank and equipment cleaner. Dye indicates ingredients are still active in solution | ✓ | | | |
| WARSH-OUT | Drexel Chemical Co. | Alkalinity builders, surfactants, anti-redeposition aid, corrosion inhibitor, formulation aids | 1-2 qt/100 gal | Low use rates | | | | ✓ |
| WORK-HORSE | Atlantic-Pacific Agricultural Co., Inc. | Concentrated commercial detergents, sequestrants and polymers | 1 qt/100 gal | Meets EPA requirements for triple rinsing for auxin herbicides | ✓ | | | ✓ |
| XTRACT | Meherrin Ag & Chemical Company | Alkalinity builders, emulsifiers, surfactants and formulation aids | 2 qt/100 gal clean water | Elevates rinsate pH to degrade vulnerable crop protection products | | | | ✓ |

| Other Products | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Product Name** | **Company** | **Principle Functioning Agents** | **Use Rate** | **Technical Comments** | **Turf** | **Aquatic** | **Organic** | **ROW** |
| AEROSTAR | KALO, Inc. | Modified vegetable oil, olgometric terpene resin, alcohol alkoxylate | 1-2 qt/100 gal | Penetrant | | | ✓ | ✓ |
| BARK-BOOST TA | Brewer International | 100% Ethoxylated tallow amine, glycols, plus inerts | 0.25-1% | Cationic tallow-amine surfactant | | | | ✓ |
| BASAL BARK OIL | Brewer International | Proprietary blend of oils and emulsifiers | See label | Absorption and penetration | | | | ✓ |
| BASAL BARK OIL IMPROVED | Brewer International | Proprietary blend of oils, limonene and emulsifiers | See label | Absorption and penetration | | | | ✓ |
| BASAL BARK OIL LT | Brewer International | 100% Blend of petroleum based basal oils | See label | Absorption and penetration for cold weather application | | | | ✓ |
| BASAL OIL WITH MYSTIC BLUE | Heritage Landscape Supply | Proprietary blend of paraffinic oil, emulsifiers, and colorant | See label | Vegetation management for cut trunk applications | | | | ✓ |
| BRANDT BIG FOOT | Brandt Consolidated, Inc. | Concentrated temporary colorant | 16 fl oz/100 gal | Helps to indicate drift | ✓ | | | ✓ |
| BRANDT BIG FOOT SS | Brandt Consolidated, Inc. | Super concentrated temporary blue colorant | 6-10 fl oz/100 gal | Helps to indicate drift | ✓ | | | ✓ |
| BRANDT MARK-IT-RED | Brandt Consolidated, Inc. | Concentrated red colorant | 1 qt/100 gal | Helps to indicate drift | ✓ | | | ✓ |
| FS VIVID PINK | GROWMARK, Inc. | Pink dye | 1-2 fl oz/10 gal | Rate depends on many factors | ✓ | | | ✓ |
| HYPER-ACTIVE | Helena Agri-Enterprises | Polyoxyethylene fatty acid ester and dialkyldimethyl ammonium polynaphthylmethylenesulfonate | 0.125-0.25% | Active on surface of insects and fungi | ✓ | | | |
| JLB OIL PLUS | Brewer International | 100% Blend of basal oils and natural oil derivatives | See label | Basal oil penetrant and emulsifier | | | | ✓ |
| JLB OIL PLUS IMPROVED | Brewer International | 100% Blend of natural oils and natural oil derivatives | See label | Basal oil penetrant and emulsifier with orange fraganced oil | | | | ✓ |
| PREV-AM | Rovensa Next | Sodium tetraborohydrate decahydrate | 50-100 fl oz/100 gal | Contains: orange oil. Combined control of listed disease, mite and insect infestations on listed agricultural crops, turf and ornamentals | ✓ | | | |
| TOPFILM | Biosorb, Inc. | Proprietary blend of patented BIOCAR biological carriers derived from grain materials that have coating and film forming properties as well as natural organic nitrogen | 0.25-1 pt/A | Binder, film forming suspoemulsion derived from grain by-products | ✓ | ✓ | ✓ | ✓ |
| W.E.B OIL | Wilbur-Ellis Company | Mineral oil | See label | Basal applications | | | | ✓ |

# ADJUVANTS FOR EACH MANUFACTURER, DISTRIBUTOR, OR RETAILER

INDICATES A CPDA CERTIFIED PRODUCT .

## AgXplore International, Inc.

BINDE
SURSIL

## Amway

APSA-80

## Atlantic-Pacific Agricultural Co., Inc.

HOOK
HOOK-ZERO
HYDROMEND
TACKLE-DRA
WORK-HORSE

## Biosorb, Inc.

TOPFILM

## Brandt Consolidated, Inc.

38-F
41-A
BRANDT 719 SPREADER
BRANDT A+
BRANDT ADJULOCK II
BRANDT ADJULOCK PRIME
BRANDT BIG FOOT
BRANDT BIG FOOT SS
BRANDT CROP OIL CONCENTRATE
BRANDT INDICATE 5
BRANDT M.S.O.
BRANDT MAGNIFY
BRANDT MARK-IT-RED
BRANDT NO FOAM B
BRANDT ONSITE
BRANDT ORGANICS AG AIDE
BRANDT ORGANICS DEFOAMER
BRANDT ORGANICS SKH STICKER
BRANDT ORGANICS UMBRELLA
BRANDT PESTICIDE EQUIPMENT CLEANER
BRANDT PH ADJUST
BRANDT SIDEKICK
BRANDT SUPER 7
BRANDT SUPER WETTER
BRANDT TORPEDO
BRANDT TRIPLELINE DEFOAMER
BRANDT ULTRA 90

## Brewer International

AG-BALANCE+
AMS-BREW
AQUA-BALANCE+
AQUA-BOOST+
BARK-BOOST TA
BASAL BARK OIL
BASAL BARK OIL IMPROVED
BASAL BARK OIL LT
BREWER DEFOAMER
CIDE-KICK
CIDE-KICK II
CIDE-KICK II+
CIDE-KICK+
CROP-KICK+
F-239
FLUSH CONDITIONER
I'VOD
I'VOD C
JLB OIL PLUS
JLB OIL PLUS IMPROVED
LINE-UP+
LOVERT
POLY CONTROL 2
POLY FILM-R+
ROYAL CONDITIONER
ROYAL FLUSH
RUST REMOVER
SILENERGY
SILENERGY+
SILNET+
SUN CONTROL+
SUN WET
SUN WET+
SUNENERGY
SUNENERGY+

## Chemorse, Ltd.

CHEMPRO A-10
CHEMPRO CP-20
CHEMPRO S-163
CHEMPRO S-172

## CHS

ADIUM
ADVATROL
CERIUM ELITE
CHS ACUVANT
CHS AGGRESTROL
CHS AXON
CHS DEPPEX
CHS EMULATE
CHS FIXATE
CHS FIXATE PRO
CHS HYPERTONIC
CHS LEVEL BEST PRO
CHS PENETREC
CHS SITKA
CHS TRAPLINE
CHS TRAPLINE PRO 2
CHS TRAPLOCK
CHS WHEELHOUSE 2
CHS WHEELHOUSE PRO
CHS WOODSIDE
CITRI-AMP
COGNITIVE 1
COVREX
CROP OIL
ENCLOAX
ENERPREX
FORGE
H-45
JACKHAMMER
JACKHAMMER ELITE
LAST CHANCE-PRO
LINKAGE
LIQUID AMS
MEDIATE PLUS
PARACHUTE II
PETRICHOR
PRECINT 2
PREFER 90
SAVVY
SOILTRATE
STAKE
SURALTA
TAPRAN
UPLAND MSO
VERACITY
VERACITY ELITE II
VERASURE
WHITE WATER 90
WHITE WATER NIS

## CNI

800 PLUS
AMS 4.0
AMSPREAD
CLEARSURF 90
CNI TRIO
CNI TRIO-W
DC-4
DRAKON
HILO COC
HILO MSO
OUTRIGHT
PACIFIC PREMIUM CAPSIZE
PACIFIC PREMIUM CLEARSURF 90
PACIFIC PREMIUM DRA
PACIFIC PREMIUM NIS
PACIFIC PREMIUM TRANSCEND
PACIFIC PREMIUM TRIO
RESPONSE DX
SWIFT
TRANSCEND

## Coastal Agrobusiness, Inc.

AMS PLUS
CHEM-OIL 83
CHEMWETT PLUS
CITRIPHASE
COFILM
CO-MIX
COVERALL
DRIFT-X
EXCEL 2000
FOAM EATER
MATRIXX
SPECTRUM
SYNERGY
SYNTACT

## Conklin Co., Inc.

BULL'S EYE
COMPLETE
HOME RUN
KNOCK-OUT
KOMBIND
RAINFAST
WEX

## Corbet

HYDROVANT

## Drexel Chemical Co.

BEANOIL
CITRU-SHIELD
HOLZIT
HOT MES
HUM-AC 820
PAS-800
PEPTOIL
PINENE II
PINENE II (OMRI)
PRIMARY
SIL-FACT
SIL-MES 100
U-SURP
WARSH-OUT

## Farm Business Network

CLEAR-UP
EVEN L PRO
EVEN LR
FIT-2G
HEAD-OUT
IN-CERT HIGHSURF MSO
IN-CERT ORGANSIL MSO
IN-PLANT
IN-ZORB ADV
SIZZLE
TETHER
TETHER 24
TETHER DRA

## GarrCo Products Inc.

ASSIST
BLAZE
CONDITION
CONDITION MAX
CONDITION ND
CONDITION PLUS
CONDITION PLUS WD
CONTROL
CONTROL AMS
CONTROL DUO
CONTROL DUO LS
CONTROL WM
IMPROVE
PREVENT
REMOVE
TRI-PLEX

## GROWMARK, Inc.

FS AMS LDF
FS AMS MAX 2.0
FS AMS MAX DR
FS AQUALIGHT
FS AQUAPRIME
FS AQUASUPREME 2.0
FS ARGENT
FS CAPTIS
FS CERTIN
FS COC SUPREME
FS COGENT
FS CROPSTIK
FS ELIMINATOR
FS INTENTION
FS INTENTION DVA
FS INTERFACE
FS LAYOUT 2.0
FS MAXSUPREME
FS OPTIVIX
FS RINSEOUT
FS TALENT
FS TANKMAX
FS TRANSFORM PLUS
FS VIVID PINK

## Heartland Ag, Inc.

BARROLA HL
BARROLA HL ULTRA
FINAN HL
FINAN HL ULTRA
HENO D
KABAK MAX
KABAK ULTRAMATE
KROP KARE COC
LUFTECH
METEM
WITHSTAND NG

## Hefty Seed Company

CORREX WC
ENSCRIBE
GATEWAY PLUS
LATCH NG
LOCKAMBA 2.0
LOCKAMBA MAXX
SEQUESTER 3
SEQUESTER PLUS
SEQUESTER ULTRA

## Helena Agri-Enterprises

AGRI-DEX
COHERE
CONTINGENT
DIVERSIFY
DLZ
DYNE-AMIC
FIRE ZONE
GROUNDED
HEL-FIRE
HYPER-ACTIVE
INDUCE

JOINT VENTURE
JUSTIFIED
KINETIC
OCULUS MAXX
OPTIMA
POINTBLANK WM
QUEST
SEQUEL
SMOKE
SURFIX-P

## Heritage Landscape Supply

AIRCOVER
AIRSTICK
AQUA-KING PLUS
AQUICARE
AQUICARE GR
AQUIFLO PLUS
AQUISYNC
ATMOS
BASAL OIL WITH MYSTIC BLUE
BREEZE XL
DROPLEX
DROPLEX XTRA
FOAMFORCE
FPS
GULFSTREAM FREE
POSTFLIGHT
PREFLIGHT
TURBULANCE
WINDSURF PRO

## Innvictis Crop Care, LLC

AD-HERE SP
INVADE X-TRA
IVC FOAM MARKER
REVISTA

## KALO, Inc.

90% NONIONIC SURFACTANT
AEROSTAR
AMS STANDARD
AMS/NIS
ANTI-FOAM
AVANT XTRA
BENCHMARK
BENCHMARK HT
BIO-90
BIO-FILM EXTRA
BOAST
BRACER
CADENCE
CAPSTAR
CENTERPOINT
CHECK-POINT
CITRIX
CLARION
COMPEX EXTRA
CONCORD
CROP OIL CONCENTRATE
CRUZADO
DRIFT-X
FRACTION
GRAVITATE
H20 MAXIMIZER
HI-SURF MSO
HYDRO-WET INJECTABLE
K-KLEAN
K-SURF
LEEWAY
LEEWAY II
LEEWAY ULTRA
MAINSTAY
MAXWAY II
MEDALIST
METHYLATED SEED OIL
MODIFIED VEGETABLE OIL
MOMENTA
OCTANE 90
ONE-AP XL
PURE & SIMPLE 90%
PURE & SIMPLE CROP OIL
PURE & SIMPLE NIS
RAIN-CHECK
RECOIL
REGULAID
RESTORE
SPECTRA AMS
SPECTRA MAX TANK MIX
SPRAY-START
STRATUM
SUMMIT
TANK CLEANER
THRESHOLD
TOURNAMENT-READY
TOURNAMENT-READY PELLETS
TRONIC
VARIANT
WATER FX
WATER-RITE
WATER-RITE FC

## Loveland Products, Inc.

ATTACH
CHOICE TRIO
CHOICE WEATHER MASTER
FRANCHISE
FREEWAY
HERBIMAX
INFUSE
LI-700
LIBERATE
MSO CONCENTRATE WITH LECITECH
PHASE
REIGN
REIGN LC
SPREADER 90
STRIKE FORCE
TACTIC

## Meherrin Ag & Chemical Company

BACKDROP
BACKDROP+
EMINENCE
FASTSTRIKE ADVANCED
HEADHUNTER ELITE
PROMOTE PLUS
QUADFIRE
RECON
SILTRATE ADVANCED
SOIL FORCE
TWISTER HL
XTRACT

## MFA, Inc.

AMS ADVANTAGE
ASTUTE XTRA
CONVERT

## Miller Chemical Co.

NU FILM 17
NU FILM P
SUSTAIN

## Precision Laboratories, LLC

AVOR
AVOR LT
BORDER XTRA 8L
BORDER XTRA 8L+
CHEM-STIK
CHEM-STIK LPH
CONVERT
DELIVER+
DIRECT RS
ELIMINO
ENDURON PSI
ERASE
EXCHANGE
GUNDOWN ELITE
INTACT
INTACT ADVANCED
INTACT MAXX
INTACT PRO
KIXYT
NEW BALANCE

NEXUM NG
PERSIST ADVANCED
PERSIST ULTRA
PRECISIVE
RIPARA
SALIA
SIMPLYX
SORBYX
SPEED
TARAGON ELITE
TARAGON MAX
TARAGON XTRA
TRANSPORT LPH
TRANSPORT PLUS
TRANSPORT ULTRA
VESTIS
VOLIMINATE

## Rosen's, Inc.

ACCELERATOR 2
ALPHA SHOT
ANTIFOAM
ARRAY
ARRAY LINK
ASTONISH
CAPSULE
CONTRAST
DEFOAMER
DIPLOMAT
ENACT
ENLIVEN
EVENT
EVERLAST - ALL WEATHER FOAM MARKER
IMPERIAL AMS
KLEEN-UP ELITE LIQUID TANK CLEANER
LEGION
MACH 5
MIX-ALL ELITE COMPATIBILITY AGENT
PLEXUS II
POWERHOUSE
REGULATOR
REVEL
R-WAY
STALLION
SUNDANCE II
TRACKER
TRADITION 93
VECTOR

## Rovensa Next

ATTITUDE
ENCOURAGE CLASSIC
HOWITZER
MORTAR
OROBOOST
ORO-HSMOC
ORO-RZ
PREV-AM
SHOCKER
SHRAPNEL
SKYHAWK
WETCIT

## SpeedAgro

XION ACTIVEGEL
XION SILICONGEL

## Titan Pro SCI

ACCERO
ACCERO ULTRA
ANNECTO
ARVUM
ARVUM ULTRA
CALDUS
FERVUS
FERVUS ULTRA
GRANUM
PROTERIS COMPATIBILITY AGENT
PROTERIS DEFOAMER
PROTERIS TANK CLEANER

## Wilbur-Ellis Company

ADVANTAGE SOIL PENETRANT
ALLEVIATE
ALLOWANCE-EA
ANTERO-EA
AQUATE MAX
ARVON
ASCENSION
BRIMSTONE
BRONC
BRONC MAX
BRONC PLUS DRY
BRONC PLUS DRY EDT
BRONC TRIPLE
CAYUSE PLUS
CLIMB
COMPETITOR
CROSSHAIR
CUT-RATE
CYNDER
DENALI-EA
DILIGENCE-EA
EFFICAX
EMBRECE-EA
FTF DEFOAMER
GLACIER-EA
GUIDANCE-EA
HASTEN-EA
HIGH LOAD
INFOLIUM-EA
IN-PLACE
INSIST 90 PLUS II
MOR-ACT ADJUVANT
MOR-ACT CROP OIL CONCENTRATE
R.O.C.
R-11
RAINIER-EA
REGUARD
RENEGADE-EA
RETRIBUTION
SUPER SPREAD MSO
SYL-COAT
SYL-TAC-EA
TRI-FOL
W.E.B OIL

## Winfield United

CHEM-SURF 90
CLASS ACT FLEX
CLASS ACT NG
COMPLETE COMPATIBILITY
COMPLEX
CORRAL POLY
DESTINY HC
FAST BREAK
INERGY
INTERLOCK
NOBLE
OPTIFY 4X
OPTIFY A
OPTIFY D30
OPTIFY HSCOC
OPTIFY HSMSO
OPTIFY L27
OPTIFY Z37
PERMEATE
POWERLOCK
PREFERENCE
SILKIN
SPEEDWAY
STRIKELOCK
SUPERB HC
TRANSFIX
ULTRALOCK
VALCHECK 80/20
VALCHECK FOAM MARKER
VALCHECK III

*American Society for Testing and Materials (ASTM International)*

# STANDARD TERMS AND DEFINITIONS

**Acidifier:** A material that can be added to spray mixtures to lower the pH.

**Activator:** A material that increases the biological efficacy of agrichemicals.

**Active Ingredient:** A component of the formulation that produces a specific effect for which the formulation is designed.

**Adjuvant:** A material added to a tank mix to aid or modify the action of an agrichemical, or the physical characteristics of the mixture.

**Anionic Surfactant:** A surface-active agent in which the active portion of the molecule containing the lipophilic segment forms exclusively a negative ion (anion) when placed in aqueous solution.

**Antifoaming Agent:** A material used to inhibit or prevent the formation of foam.

**Attractant:** A material that attracts specific pests.

**Basic Blend:** (Definition from the Editor) An adjuvant that raises the pH of the solution and contains a nitrogen source.

**Buffer or Buffering Agent:** A compound or mixture that, when contained in solution, causes the solution to resist change in pH. Each buffer has a characteristic limited range of pH over which it is effective.

**Canopy Penetrating Agent:** An adjuvant that increases the penetration of the spray material into the crop canopy. See deposition aid.

**Cationic Surfactant:** A surface-active agent in which the active portion of the molecule containing the lipophilic segment forms exclusively a positive ion (cation) when placed in aqueous solution.

**Colorant:** A material used to alter the color of the tank mix.

**Compatibility Agent:** A surface-active agent that allows simultaneous application of liquid fertilizer and agrichemical, or two or more agrichemical formulations, as a uniform tank mix, or improves the homogeneity of the mixture and the uniformity of the application.

**Crop Oil Concentrate:** An emulsifiable, petroleum oil-based product containing 15% to 20% w/w surfactant and a minimum of 80% w/w phytobland oil.

**Crop Oil (Emulsifiable):** An emulsifiable, petroleum oil-based product containing up to 5% w/w surfactant and the remainder of a phytobland oil.

**Crop Oil (Nonemulsifiable):** See phytobland oil.

**Defoaming Agent:** A material that eliminates or suppresses foam in the spray tank.

**Deposition Aid:** A material that improves the ability of agrichemical sprays to deposit on target surfaces.

**Dormant Oil:** A horticultural spray oil applied during the dormant phase of the targeted plant.

**Drift Control Agent:** A material used in liquid spray mixtures to reduce spray drift.

**Emulsifier:** A surfactant that promotes the suspension of one immiscible liquid in another.

**Esterification:** The process of reacting fatty acids with an alcohol. Although methanol is the most commonly used alcohol (methylated), ethanol (ethylated), n-butanol and isopropyl alcohol could be used.

**Evaporation Reduction Agent:** A material that reduces the evaporation rate of a spray mix during, after, or both during and after, application.

**Extender:** A material that increases the effective life of an agrichemical after application.

**Foam Suppressant:** See defoaming agent.

**Foaming Agent:** A material that increases the volume or stability of the foam formed in a spray mixture.

**High Surfactant Oil Concentrate:** An emulsifiable oil based product containing 25-50% w/w surfactant and a minimum of 50% w/w oil.

**High Surfactant Crop Oil Concentrate:** A high surfactant oil concentrate where the oil is a petroleum oil.

**High Surfactant Modified Vegetable Oil Concentrate:** A high surfactant oil concentrate where the oil is a modified vegetable oil.

**High Surfactant Vegetable Oil Concentrate:** A high surfactant oil concentrate where the oil is a vegetable oil.

**Humectant:** A material which increases the equilibrium water content and increases the drying time of an aqueous spray deposit.

**Modified Vegetable Oil:** An oil extracted from seeds that has been chemically modified (for example, methylated).

**Modified Vegetable Oil Concentrate:** An emulsifiable, chemically modified vegetable oil product containing 5% to 20% w/w surfactant and the remainder chemically modified vegetable oil.

**Naphtha-Based Oil:** A petroleum oil containing a majority of the naphtha fraction.

**Nonionic Surfactant:** A surface-active agent having no ionizable polar end groups but comprised of hydrophilic and lipophilic segments.

**Oil:** See petroleum, vegetable, paraffinic and so forth.

**Paraffinic Oil:** A petroleum oil (derived from paraffin crude oil) whose paraffinic-carbon type content is typically greater than 60%.

**Penetrant:** A material that enhances the ability of an agrichemical to enter a substrate or penetrate a surface.

**Petroleum Oil:** Oil derived from petroleum: contains a mixture of hydrocarbons that are broadly classified as paraffins, naphthenes, aromatics, or other unsaturates, or combinations thereof.

**Phytobland Oil:** A highly refined paraffinic material with minimum unsulfonated residue of 92% v/v.

**Spreader:** A material which increases the area that a droplet of a given volume of spray mixture will cover on a target.

**Spreader-Sticker:** A material that has the properties of both a spreader and a sticker.

**Sticker:** A material that assists the spray deposit to adhere or stick to the target and may be measured in terms of resistance to time, wind, water, mechanical action or chemical action.

**Surface Agent:** A material that when added to a liquid agent medium, modifies the properties of the medium at a surface or interface. This is a general term that includes soluble detergents in liquid medium, dispersing agents, emulsifying agents, foaming agents, penetrating agents and wetting agents.

**Surfactant:** See surface agent.

**Vegetable Oil:** Oil extracted from seeds; typically those of corn, cotton, peanut, rapeseed, sunflower, canola or soybean.

**Vegetable Oil Concentrate:** An emulsifiable vegetable oil product containing 5% to 20% w/w surfactant and a minimum of 80% w/w vegetable oil.

**Wetting Agent:** Wetting agents can be considered synonymous with spreading agents in function.

# NAMES AND ADDRESSES OF COMPANIES

**AgXplore International, LLC.**
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**Biosorb, Inc.**
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**Brandt Consolidated, Inc.**
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**Brewer International**
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**Chem Nut Inc.**
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https://cniag.com

**CHS**
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**Conklin Co, Inc.**
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**Meherrin Ag & Chemical Company**
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**Miller Chemical Co.**
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www.millerchemical.com

**Precision Laboratories, LLC**
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**SpeedAgro**
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