




NFPA HAZARD RATING				U.S. TRANSPORT SUMMARY	
0	Least				
1	Slight	2	Health		See Section 14 for full information.
2	Moderate	0	Flammability		
3	High	0	Reactivity		
4	Severe				

SECTION 1: IDENTIFICATION	
Product Name: Aduro® EPA Registration #: Exempt Product ID/Unity #: 10133466, 10133562, 1416070 Common Name: Water conditioner, acidifier and surfactant Chemical Description: Ethoxylated fatty amine-glycerol acid complex, polyoxyethylene ether blend, and pH adjusting agents Recommended Uses: Agricultural adjuvant. See product label for complete list of recommended uses. Restrictions for Use: See product label for information regarding restrictions on the use of this product.	MEDICAL EMERGENCY TELEPHONE NUMBER: 1-877-424-7452 (24hrs) Non-Emergency Business Inquiries: 1-855-494-6343 Mon – Fri 8am – 5pm (Central Standard Time)
Manufactured For: WINFIELD SOLUTIONS, LLC P. O. Box 64589 St. Paul, MN 55164-0589	
FOR EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT, CALL: CHEMTREC 1-800-424-9300 (24 hours)	

SECTION 2: HAZARDS IDENTIFICATION			
EMERGENCY OVERVIEW: Clear golden yellow liquid with slight pleasant odor. Causes severe eye and skin irritation with possible irreversible damage. May cause irritation of the respiratory tract. Toxic to aquatic life with long lasting effects.			
POTENTIAL HEALTH EFFECTS: Eyes: Causes serious eye irritation with the potential for irreversible damage to the eyes. Skin: Causes severe skin irritation with possible skin damage. Inhalation: May be harmful if inhaled. Ingestion: Harmful if swallowed due to low pH of product. Likely to cause gastric irritation. Preexisting Conditions: Pre-existing respiratory conditions may be aggravated by exposure to mists. Chronic Health Effects: None known.			
Carcinogenicity	NTP: Not listed	IARC: Not listed	OSHA: Not listed
OSHA HCS 2012 CLASSIFICATION: Eye Irritant Category 1; Skin Irritation Category 1B; Acute Toxicity – Oral Category 4; Specific Target Organ Toxicity – Single Exposure – Category 3; Corrosive to Metals Category 1			
SIGNAL WORD: DANGER			
HAZARD STATEMENTS: Causes severe skin burns and serious eye damage May cause respiratory irritation. Harmful if swallowed. May be corrosive to metals. Percent of product with unknown toxicity: 0%		 	
PRECAUTIONARY STATEMENTS: Prevention: Do not breathe mist or spray. Wash hands thoroughly after use. Wear protective gloves, protective clothing, eye protection, and face protection. Do not eat, drink or smoke when using this product. See Section 8 for additional information. Use only outdoors or in a well-ventilated area. Keep only in original container.			

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Response:	<p>If in eyes: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison control center (1-877-424-7452) or doctor for treatment advice.</p> <p>If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.</p> <p>If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison control center (1-877-424-7452) or doctor for treatment advice. If Swallowed: Rinse mouth. Do NOT induce vomiting. Call a poison control center/doctor if you feel unwell.</p> <p>If spilled: Absorb spillage to prevent material damage.</p>
Storage:	Store in corrosive resistant container with a resistant inner liner. Store in a well-ventilated and locked place. Keep container tightly closed.
Disposal:	Dispose of contents/container in accordance with Federal, state and local regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	% (wt)	CAS Reg. #
Proprietary blend of water conditioners and buffers	100.0%	*
(1-Butanol	0.5 – 1.5%	71-36-3)
(Ethanolamine	5.0 – 10.0%	141-43-5)
*Ingredients not specifically listed are non-hazardous and/or considered to be confidential business information under 29 CFR 1910.1200(i).		
See Section 8 for exposure limits.		

SECTION 4: FIRST AID MEASURES

Inhalation:	Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention or call a poison control center for treatment advice.
Ingestion:	Seek medical attention or call a poison control center immediately. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Eyes:	Flush eyes with clean water for at least 15 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. Seek medical attention immediately.
Skin:	Remove contaminated clothing and wash before re-using them. Wash exposed skin with soap and water. Seek medical attention immediately.

SECTION 5: FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Use water spray preferable in the form of a fog, alcohol foam, dry chemical, or carbon dioxide (CO ₂). Avoid excessive water.
Unsuitable Extinguishing Media: Water jet.
Special Fire Fighting Procedures: Wear NIOSH/MSHA approved self-contained breathing apparatus and full bunker gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later. Avoid breathing vapors; keep upwind. Treat as a liquid chemical type fire where discharges to the environment are to be controlled as quickly as possible.
Hazardous Combustion Products: Thermal breakdown of this product during fire or very high heat conditions may produce carbon oxides, nitrogen oxides, sulfur oxides and phosphorous.
Unusual Fire and Explosion Hazards: Can be dangerous when exposed to extreme heat and flame. Can vigorously decompose under high temperature conditions (>230°F, 110°C) to release carbon dioxide gas. DO NOT allow water to directly enter storage containers as violent reaction may occur. Flammable hydrogen may be produced on prolonged contact with metals such as aluminum, tin, lead and zinc.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Refer to Section 8 for personal protective equipment to be worn during containment and clean-up of a spill involving this product.
Environmental Precautions: Keep spilled product from entering nearby sewers or waterways.
Methods for Containment: Contain spilled liquid by diking area with sand or earth.
Methods for Clean-up: Cover contained spill with an inert absorbent material such as sand, vermiculite or other appropriate material. Vacuum, scoop or sweep up material and place in a container for disposal. Do not place spilled material back in original container.
Other Information: No other information available.

SECTION 7: HANDLING AND STORAGE

Handling: Ensure adequate ventilation. Immediately clean up spills that occur during handling. Keep containers closed when not in use. Practice good hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Storage: Store in a locked, cool, dry area away from children, feed and food products in an area away from incompatible substances. Protect packaging from physical damage. Protect from exposure to fire. Do not store in aluminum, copper or mild steel vessels. DO NOT FREEZE.

Minimum Storage Temperature: 32°F

Other Precautions: Consult Federal, state and local laws and regulations pertaining to storage.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure Guidelines**

Component:	OSHA PEL	ACGIH TLV	NIOSH REL
1-butanol	100 ppm, 300 mg/m ³ (TWA)	15 ppm (TWA) 30 ppm (CEIL)	50 ppm, 150 mg/m ³ (C)[skin]
Ethanolamine	3 ppm, 6 mg/m ³ (TWA)	3 ppm (TWA) 6 ppm (STEL)	3 ppm, 8 mg/m ³ (TWA) 6 ppm, 15 mg/m ³ (ST)

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear an OSHA/NIOSH-approved respirator for organic vapors.

Engineering Controls: **Local Exhaust:** Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs or other specified exposure limits. Local exhaust ventilation is preferred.

Protective Gloves: Wear chemically protective gloves to prevent repeated exposure to the skin.

Eye Protection: To avoid contact with eyes, wear chemical goggles or shielded safety glasses. Contact lenses are not eye protective devices. An emergency eyewash or water supply should be readily accessible to the work area.

Other Protective Clothing or Equipment: Wear long-sleeve shirt, long pants and chemical resistant shoes plus socks to prevent prolonged or repeated skin contact.

Work/Hygienic Practices: Never eat, drink, nor use tobacco in work areas. Practice good hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid	Specific Gravity (H₂O=1):	1.19 – 1.20 (typical)
Vapor Pressure (mm Hg):	Not determined	Density (lbs/gallon):	9.93 – 10.01 lbs/gal (typical)
Vapor Density (Air=1):	Heavier than air.	Melting Point/Freezing Point:	Not determined
Solubility in Water (wt %):	Soluble	Boiling Point/Range:	Not determined
Viscosity:	Not determined	pH (0.25% aqueous solution):	2.0 – 2.5
Appearance and odor:	Clear golden yellow liquid Odor not determined	Flash Point:	>200°F

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Reaction with incompatible alkaline materials and susceptible metals (aluminum, tin, lead, zinc) will release dangerous hydrogen gas.

Chemical Stability: Product is stable at ambient temperature and pressure, under normal storage and handling.

Possibility of Hazardous Reactions: Reaction with incompatible alkaline materials and susceptible metals (aluminum, tin, lead, zinc) will release dangerous hydrogen gas.

Conditions to Avoid: Contact with incompatible materials, extreme heat/open flame/sparks and other sources of ignition.

Incompatible Materials: Oxidizing agents, strong acids, strong bases and susceptible metals such as aluminum, tin, lead and zinc.

Hazardous Decomposition Products: Thermal breakdown of this product during fire or very high heat conditions may produce carbon oxides, nitrogen oxides, sulfur oxides and phosphorous.

SECTION 11: TOXICOLOGICAL INFORMATION**ACUTE TOXICITY**

Eye Effects:	Causes severe eye irritation and may cause burns and other irreversible damage.
Skin Effects:	LD50 is >5,000 mg/kg. Causes serious skin irritation.
Acute Inhalation Effects:	No data available
Acute Oral Effects:	LD50: 500 mg/kg. Swallowing may cause burning pain in the mouth, throat, and abdomen and coughing and constriction of the throat, followed by nausea, vomiting and diarrhea.
Specific Target Organ Toxicity:	Respiratory irritation

CHRONIC TOXICITY

Chronic Effects:	Not anticipated to have chronic health effects due to exposure.
Carcinogenicity:	This product contains no ingredients that are suspected of being or known to be a carcinogen under OSHA, NTP, or IARC at greater than 0.1%.
Mutagenicity:	None of the components of this product are known or suspected of having mutagenic effects.
Teratogenicity:	None of the components of this product are known or suspected of having teratogenic effects.
Reproductive Toxicity:	None of the components of this product are known or suspected of having effects on the reproductive system.

POTENTIAL HEALTH EFFECTS:

Eyes:	Causes serious eye irritation with the potential for irreversible damage to the eyes.
Skin:	Causes severe skin irritation with possible skin damage.
Inhalation:	May be harmful if inhaled.
Ingestion:	Harmful if swallowed due to low pH of product. Likely to cause gastric irritation.

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL SUMMARY: Ecotoxicity studies have not been conducted on this product.

ECOTOXICITY DATA:

Fish Acute and Prolonged Toxicity:	Not determined
Aquatic Invertebrate Acute Toxicity:	Not determined
Aquatic Plant Toxicity:	Not determined
Bird Acute and Prolonged Toxicity:	Not determined
Honeybee Toxicity:	Not determined

ENVIRONMENTAL EFFECTS:

Soil Absorption/Mobility:	Not determined
Persistence and degradability:	Not determined
Bioaccumulative Potential:	Not determined
Other adverse effects:	None known

SECTION 13: DISPOSAL CONSIDERATIONS

Waste: Dispose of in accordance with applicable Federal, state and local laws and regulations.
Container: Triple rinse and recycle the container or dispose of in accordance with Federal, state and local laws and regulations.
RCRA Characteristics: It is the responsibility of the individual disposing of this product to determine the RCRA classification and hazard status of the waste.

SECTION 14: TRANSPORT INFORMATION

DOT: (Ground)	UN1760, Corrosive Liquid, N.O.S. (contains monocarbamide dihydrogen sulfate), 8, PGII
IMDG: (Sea)	UN1760, Corrosive Liquid, N.O.S. (contains monocarbamide dihydrogen sulfate), 8, PGII,
IATA: (Air)	Not determined.
TDG: (Canada)	Not determined

SECTION 15: REGULATORY INFORMATION

TSCA Inventory: All components are listed on the TSCA inventory or are exempt from listing.

SARA Title III Information:

Section 302 - Extremely hazardous substances: None listed

Section 311/312 – Hazard Categories: Immediate (Acute)

Section 313 – The following chemicals are subject to the reporting requirements of Section 313 of Title III, Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372:

1-butanol (CAS # 71-36-3) (>.0.1%)

CERCLA - This product contains the following chemicals which have a reportable quantity (RQ) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):

1-butanol has an RQ of 5,000 lbs (not reached with any practical quantity of product).

U.S. State Worker and Community Right-To-Know (RTK) Information (CT, IL, MA, MN, NH, NJ, PA, RI):

Chemical Name	CAS #	State(s)
1-butanol	71-36-3	MA, NJ, PA
Ethanolamine	141-43-5	MA, NJ, PA
Glycerol	56-81-5	MA, NJ, PA

Canadian Domestic Substances List: Not determined

WHMIS Classification: D2B, E; This product is not approved for use in Canada.

SECTION 16: OTHER

Disclaimer: The information presented herein is based on available data from reliable sources and is correct to the best of WinField Solutions' knowledge. WinField Solutions, LLC makes no warranty, express nor implied, regarding the accuracy of the data or the results obtained from the use of this product. Nothing herein may be construed as recommending any practice or any product in violation of any law or regulations. The user is solely responsible for determining the suitability of any material or product for a specific purpose and for adopting any appropriate safety precautions. We disclaim all liability for injury or damage stemming from any improper use of the material or product described herein.

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