



SG Crop Solutions

AnnGro

NONPLANT FOOD INGREDIENT

Composition

3.75% Ethyl esters of fatty acids

Directions for Use

AnnGro is a penetrant for use with liquid or water-soluble powdered fertilizers/nutrients. Apply through irrigation systems. Use AnnGro with liquid products volume to volume ratio of 1:1000.

Mixing Instructions

Before mixing: Shake well before measuring out the required volume.

For mixtures with liquid fertilizers/nutrients: Thoroughly mix the liquid fertilizers/nutrients directly with the appropriate volume of AnnGro in a suitable container and allow it to stand for 30 minutes before adding the mixture to the mixing tank containing the appropriate volume of water. Agitate thoroughly again before irrigate.

For mixtures with powdered fertilizers/nutrients: Mix the powdered fertilizers/nutrients in a suitable container with the minimum amount of water needed to suspend the product. Add the appropriate amount of AnnGro® and thoroughly mix. Leave to stand for 30 minutes before adding the mixture to the tank containing the appropriate amount of water while continuously agitating thoroughly.

Storage

Store the product in a dry cool location. Avoid excess moisture and heat.

Information regarding the contents and levels of metals in this product is available on the internet at <http://www.aapfco.org/metals.htm>

Available packages

5 gallons, 55 gallon drum, 275 gallon tote.





AnnGro

The Courier Designed for Your Crops

Description

AnnGro is a unique penetrant that was developed to enhance plant uptake. AnnGro consists of carrier vesicles that was intended to first pack the chemical it is combined with and then enhances the uptake thereof by the plant. The packed sponges are released intra-cellularly when the AnnGro vesicles are metabolized.

Mixing Instructions

- Before mixing: Shake the AnnGro container well before measuring out the required volume.
- For mixtures with liquid agricultural compounds: Thoroughly mix the agricultural compound directly with the appropriate volume of AnnGro in a suitable container and allow it to stand for 30 minutes before adding the mixture to the spray tank containing the appropriate volume of water. Agitate thoroughly again before spraying.
- For mixtures with powdered agricultural compounds: Mix the powdered compound in a suitable container with the minimum amount of water needed to suspend the product. Add the appropriate amount of AnnGro and thoroughly mix. Leave to stand for 30 minutes before adding the mixture to the spray tank containing the appropriate amount of water while continuously agitating thoroughly.
- Mix with liquid fertilizer and apply through irrigation system: 1/5 (one fifth) fl. oz. of AnnGro per gal of liquid fertilizer.
- Foliar spray: Mix 1-2 oz of AnnGro per acre with other agriculture products.

Warnings

- Do not use AnnGro® with other adjuvants.
- AnnGro is found to be compatible with $\text{Ca}(\text{NO}_3)_2$, CuSO_4 , H_3BO_3 , MnSO_4 , ZnO_2 , ZnSO_4 , 8:1:3 NPK and UAN.



SAFETY DATA SHEET

SECTION 1		PRODUCT		
Identity: ANNGRO®				
Manufactur		BioPher (Pty) Ltd		
Address:		P.O. Box 38910	Tel: + 27 (0) 453 1870	
		Langenhoven Park	Fax: 086 584 5659	
		Bloemfontein		
		9330		
Web:		www.biopher.com	Email mail@anngro.com	
SECTION 2		INGREDIENTS INFORMATION		
CAS No.	Significant Ingredients	g/l or %	OSHA PEL	ACGIH TLV
-	Fatty acid ethyl esters	37.5 g/l	-	-
Water		to 1 litre		
HS Code:2915.90.10				
SECTION 3		HAZARDS IDENTIFICATION		
EMERGENCY OVERVIEW: Generally regarded as safe in pharmaceutical or food sector				
Not known to cause eye, skin or respiratory tract irritation. The ingredients are used in several topical pharmaceutical products.				
Target	Possibly the liver	Eye:	Not an irritant, not harmful	
Ingestion:	Unlikely to cause harm	Skin:	Not an irritant, not harmful	
Inhalation:	Not harmful.	Chronic: Laboratory experiments showed product to have no genotoxic or mutagenic effects. Sub-chronic exposure did not result in adverse effects in mice or rats. No adverse reproductive effects have been reported in mice or rats or human cells.		
SECTION 4		FIRST AID MEASURES		
Eyes:	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation develops, get medical aid.			
Skin:	No harmful effect on skin. Medical aid required only if unexpected irritation develops or persists.			
Ingestion:	Do not induce vomiting. Get medical aid if irritation or symptoms occur.			
Inhalation:	Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.			
Notes to Physician: Treat symptomatically and supportively.				



SECTION 5		FIRE AND EXPLOSION HAZARD DATA		
Flash Point (Method Used):	non-flammable	Flammable Limits:	no information	
Extinguishing Media:	water spray, CO ₂ , dry chemical (ABC), alcohol foam	LEL:	no information	UEL: no information
Special Fire Fighting Procedures:	As in any fire conditions, wear full protective clothing and a NIOSH-approved self-contained breathing apparatus. Use flooding amounts of water in early stages of fire.			
Unusual Fire and Explosion Hazards:	As with most fluids containing an organic phase, fire is unlikely but possible at elevated temperatures.			
SECTION 6		ACCIDENTAL RELEASE MEASURES		
General:	Use proper personal protective equipment as indicated in Section 8. Not harmful			
Spills/Leaks:	Dilute spill with water - flush to sewer with copious amounts of water. Provide ventilation. This liquid is not harmful to the environment.			
SECTION 7		HANDLING AND STORAGE		
Handling:	Use with adequate ventilation. Avoid contact with eyes. Avoid ingestion and inhalation.			
Storage:	Do not store in direct sunlight. Store in a tightly closed container. Store in a dry area. Store at ambient temperature. Keep container closed when not in use.			
SECTION 8		EXPOSURE CONTROLS, PERSONAL PROTECTION		
Engineering Controls:	A safety shower is not required. Use adequate ventilation.			
Exposure Limits	Mixture: ANNGRO™	ACGIH	NIOSH	OSHA - Final PELs
		none listed	none listed	none listed
OSHA Vacated PELs:	No OSHA Vacated PELs are listed for this mixture.			
Personal Protective Equipment:				
Eyes:	Although not required, appropriate protective eyeglasses may be worn as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.			
Skin:	No gloves are necessary.			
Clothing:	No specific safety wear is required.			
Respirators:	No respiratory protection program is required.			
Other Precautions:	Wash after handling. Use with adequate ventilation. Avoid ingestion of large volumes.			

**SECTION
9****PHYSICAL AND CHEMICAL PROPERTIES**

Physical State:	White milky liquid	Odour:	Oily smell
Vapor Pressure:	Not available	pH:	4.5-7.0
Vapor Density:	Not available	Evaporation Rate:	Not available
Viscosity:	Not available	Boiling Point:	90-100 °C @ 1mmHg
Solubility:	Water soluble	Freezing Point:	2.5 - 3.5 deg C
Specific Gravity/Density:	0.99 g/cm ³ @ 20 °C	Molecular Weight:	Not applicable
Ventilation (General):	Adequate local or general exhaust.	Eye Protection:	None required.
Work / Hygienic Practices:	Wash thoroughly after handling.		
Other Protective Clothing or Equipment:	None required.		

**SECTION
10****STABILITY AND REACTIVITY**

Chemical Stability:	Stable under normal temperature and pressures. Air sensitive. Light sensitive.
Conditions to Avoid:	Incompatible materials, light, exposure to air, excessive heat
Incompatibilities with Other Materials:	Strong oxidizing agents.
Hazardous Polymerization:	Will not occur.
Hazardous Decomposition Products:	None

**SECTION
11****TOXICOLOGICAL INFORMATION**

RTECS#:	
CAS#	A mixture; no single CAS#
LD50/LC50:	> 4 390 mg/kg
Carcinogenicity:	Not carcinogenic according to AEMES testing. Not listed by ACGIH, IARC, NTP, or CA Prop 65
Epidemiology:	No information found
Teratogenicity:	Not teratogenic effects in experimental animals (mice/rats).
Reproductive Effects:	No adverse reproductive effects have occurred in experimental animals.
Mutagenicity:	No mutagenic effects have occurred in experimental animals and not mutagenic according to AEMES test.
Neurotoxicity:	No information found
Other Studies:	



SECTION 12		ECOLOGICAL INFORMATION	
Ecotoxicity:		The toxicological properties of this material, in terms of the environment, have not fully been investigated. No formal or hard data are available but it is unlikely to be ecotoxic.	
Environmental:		Expected to be environmentally friendly, including fish and bees, based on ingredients but no formal data available.	
Physical:		No information available.	
Other:		Can be emptied into drains.	
SECTION 13		DISPOSAL CONSIDERATIONS	
The ingredients of the products are not listed amongst chemicals classified for disposal of hazardous waste. Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.			
RCRA P-Series:		None listed.	
RCRA U-Series:		None listed.	
Other:			
SECTION 14		TRANSPORT INFORMATION	
Shipping Name:			
Hazard Class:		Not regulated as Hazardous	Non-dangerous goods
UN Number:		Non-dangerous, therefore no UN number	
Packing Group:		N1	



SECTION 15	ACCIDENTAL RELEASE MEASURES
US Federal	Not listed on the US Federal inventory.
TSCA	Not listed on the TSCA inventory.
Health & Safety	None of the ingredients /chemicals are on the Health & Safety Reporting
Chemical Test Rules	None of the chemicals in this product are under a Chemical Test Rule.
Section 12b	None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule	None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs	None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances	None of the chemicals in this product have a TPQ.
Section 313	No chemicals are reportable under Section 313.
Clean Air Act:	This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.
Clean Water Act:	None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:	None of the chemicals in this product are considered highly hazardous by OSHA.
STATE	Not present on state lists from CA, PA, MN, MA, FL, or NJ.
California Prop 65	California No Significant Risk Level: None of the chemicals in this product are listed.
European/International Regulations European Labeling in Accordance with EC Directives Hazard Symbols:	Not available.
Risk Phrases:	
Safety Phrases:	S 24/25 Avoid contact with skin and eyes.
WGK (Water Danger/Protection)	
Canada - DSL/NDSL	Not listed on Canada's DSL List.
Canada - WHMIS	This product has a WHMIS classification of Not Controlled.. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.



**SECTION
16**

ADDITIONAL INFORMATION

MSDS Creation Date: 9/02/2007

Revision #2 Date: 13/11/2009

Revision #3 Date: 15/03/2012

Revision #4 Date: 16/04/2014

Revision #5 Date: 30/03/2015

Revision #6 Date: 17/07/2015

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