



1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: BIOFOLIAR #1
Chemical Name: Inorganic Salts
Guaranteed Analysis: 8% N, 16% P₂O₅, 16% K₂O
CAS Registry Number: Proprietary
Product Use: Fertilizer – Dry. For Foliar or Soil Application
Manufacturer/Supplier: PRO•SOL, Box 1589, Ozark, AL 36361-1589

Emergency Phone #s: **FOR CHEMICAL EMERGENCY**
(Spill, Leak, Fire, Exposure or Accident) **800-457-4280**
FOR MEDICAL/HANDLING EMERGENCIES
800-457-4280

Date of First Issue:	June 1, 2010	Revision Number:	N/A
Revision Date:	N/A	Changes:	N/A

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients (See Section 8 for Exposure Limits)	% (w/w)	CAS Number	Air Threshold Limit Value
Ammonium Nitrate	11%	6484-52-2	10.00mgNH ₄ NO ₃ /m ³
Monoammonium Phosphate	26%	7722-76-1	N/D
Potassium Nitrate	8%	7757-79-1	N/D
Potassium Sulfate	23%	7778-80-5	N/D
Magnesium Sulfate	30%	7487-88-9	10.00mgMg/m ³
Sodium Borate	<1	12280-03-4	10.00mgB ₂ O ₃ /m ³
Cu EDTA	<1	14025-15-1	N/D
Fe EDTA	<1	15708-41-5	N/D
Sodium Molybdate	<1	10102-40-6	5.00mg Mo/m ³
Zn EDTA	<1	14025-21-9	N/D



3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW Pale Blue Powder. Not flammable or explosive, but will decompose in extreme heat to produce toxic fumes of oxides of nitrogen ammonia, oxides of phosphorous, and oxides of potassium. This product contains an oxidizer and may increase the intensity of a fire.

CAUTION! MAY CAUSE EYE, SKIN, AND RESPIRATORY IRRITATION.

- Avoid contact with skin and clothing. Wash after handling.
- Wear appropriate personal protective equipment. (See Section 8 for additional information)

Appearance and odor: Odorless Pale Blue Powder

POTENTIAL HEALTH EFFECTS (*See Section 11 for additional information*)

Primary Route (s) of Exposure: Dermal Contact, Eye Contact, Inhalation, Ingestion

Acute Exposure:

- Inhalation No know significant effects or critical hazards
- Eye Contact Irritating to eyes
- Skin Contact Practically non-toxic in contact with skin. Irritation to skin.
- Ingestion Practically non-toxic if swallowed.

Carcinogenicity: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH.

Chronic Effect/Developmental Repeated skin exposure can produce local skin destruction or dermatitis. Repeated exposure to the eyes to a low level of dust can produce eye irritation.

Medical Conditions Aggravated: Skin conditions, Eye conditions, Gastrointestinal condition

POTENTIAL ENVIRONMENTAL EFFECTS (*See Section 12 for additional information*)

This material is a water pollutant. Do Not let spilled or leaking material enter waterways.

4. FIRST AID MEASURES

Inhalation: If inhaled, remove to fresh air. If not breathing give artificial respiration. Get medical attention.

Eye Contact: Check for and remove any contact lenses. Rinse immediately with plenty of water. Get medical attention.

Skin Contact: Wash with soap and water. Get medical attention if symptoms occur.

Ingestion: Do Not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.



5. FIRE FIGHTING MEASURES

Conditions of Flammability: Non Flammable
Flash Point (Method): N/A
Auto-Ignition Temperature: N/A
Extinguishing Media: This product is not flammable or combustible. If involved in a fire, use water fog or spray, dry chemical, foam or carbon dioxide extinguishing agents.

Fire Fighting Procedures: Wear self-contained breathing apparatus, approved by NIOSH. Do not wash material into any streams, waterways, drainage ditches, or storm sewers, etc. Impound liquids used in firefighting to prevent entry into streams, ditches, sewers, etc.

Fire & Explosion Hazards: Not flammable or explosive.
Hazardous Combustion Products: Oxides of nitrogen, phosphorus and potassium. Ammonia

	Health:	Fire:	Reactivity:	Other:
NFPA Hazard Rating	1	0	0	None
<i>[0 – Minimal 1 – Slight 2 – Moderate 3 – High 4 – Extreme]</i>				

6. ACCIDENTAL RELEASE MEASURES

Spill/Leak: Safely stop source of spill. Restrict non-essential personnel from area. All personnel involved in spill clean up should avoid skin and eye contact by wearing appropriate personal protective equipment.

Cleanup: Sweep up spilled solid material, being careful not to create dust. Return sweepings to stock or, if contaminated, place into a chemical waste container for disposal according to local, state, and/or federal regulations.

7. HANDLING AND STORAGE

Store in cool, dry, well-ventilated area away from incompatible substances. Protect from physical damage. Avoid generating dust and the release of dust into the workplace. Refrain from eating, drinking, or smoking in work areas.



8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Applicable Exposure Limits:

Chemical Name	OSHA – PELS (mg / m ³)		ACGIH – TLVs (mg / m ³)		NIOSH – RELS (mg / m ³)	
	TWA	STEL/CEIL (C)	TWA	STEL/CEIL (C)	TWA	STEL/CEIL (C)
Ammonium Nitrate	15 Total 5 Respirable	N/D	N/D	N/D	N/D	N/D
Urea	15 Total 5 Respirable	N/D	N/D	N/D	N/D	N/D
Monoammonium Phosphate	15 Total 5 Respirable	N/D	10 Total 3 Respirable	N/D	N/D	N/D
Potassium Nitrate	15 Total 5 Respirable	N/D	N/D	N/D	N/D	N/D
Potassium Sulfate	15 Total 5 Respirable	N/D	N/D	N/D	N/D	N/D
Magnesium Compounds	10 Total .1 Respirable	N/D	10 Total .1 Respirable	N/D	10	N/D
Copper Compounds	1	N/D	1	N/D	1	N/D
Iron Salts	N/D	N/D	1	N/D	1	N/D
Zinc Compounds	15 Total 5 Respirable	N/D	2	10	5	15

[Ref: ACGIH Guide to Occupational Exposure Values, 2006 Edition]

Legend:

CEIL:	Ceiling Exposure Limit	PEL:	Permissible Exposure Limit
STEL:	Short Term Exposure Limit	REL:	Recommended Exposure Limit
N/D	Not Determined	TLV:	Threshold Limit Value
ACGIH:	American Conference of Governmental Industrial Hygienists	TWA:	Time-Weighted Average
NIOSH:	National Institute for Occupational Safety and Health	WEEL:	Workplace Environmental Exposure Level
OSHA:	Occupational Safety and Health Administration		

Personal Protective Equipment (PPE)

- **Protective Clothing:** The hazard potential of this material is low. Where there is large-scale use of this material and significant potential for worker contact, gloves and long sleeved work clothes or disposable coveralls may be necessary. Eye protection should be worn where dust is generated and there is a potential that eye contact may occur.
- **Ventilation:** Use adequate local or general ventilation where necessary to maintain the concentrations of dust well below the recommended occupational exposure limits for general Particulates. Not Otherwise Specified (PNOS).
- **Respirators:** Where dust is generated and cannot be controlled to within acceptable levels by engineering means, use appropriate NIOSH-approved respiratory protection equipment a 42CFR84 Class N, R or P-95 particulate filter cartridge.



9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State/Appearance/Odor:	Solid, odorless, pale blue powder
Boiling Point:	N/A
Bulk Density:	60 lbs/cubic foot
Cloud Point:	N/A
Evaporation Rate (Butyl Acetate=1):	N/A
Melting Point:	N/A
Odor Threshold:	N/A
pH:	6-7
Partition Coefficient (n-octanol/water):	N/A
Pour Point:	N/A
Solubility in water:	100% Soluble in Water
Solubility in other solvents:	N/A
Specific Gravity (H ₂ O = 1) :	1.0
Vapor Density (Air = 1):	N/A
Viscosity:	N/A
Volatiles (% by weight) :	N/A
Other-Decomposition temperature	N/A
Conditions of Flammability:	Non Flammable
Flash Point (Method):	N/A
Upper Flammable Limit (% by volume)	N/A
Lower Flammable Limit (% by volume):	N/A
Auto-Ignition Temperature	N/A
<: less than >: greater than = : approximately	

10. STABILITY AND REACTIVITY

Stability: This product is stable at ambient temperatures and atmospheric pressures.

Incompatibilities/Conditions to avoid: Avoid contact with strong alkaline or acid compounds.

Decomposition Products: Ammonia. Oxides of Nitrogen, Phosphorous, and Potassium.



11. TOXICOLOGICAL INFORMATION

TOXICITY DATA

Ingredient Name	TEST	RESULT	ROUTE	SPECIES
Ammonium Nitrate	LD50	2217 mg/kg	ORAL	RAT
Urea	LD50	8417 mg/kg	ORAL	RAT
	LD50	11000 mg/kg	ORAL	MUS
	LDL0	16,000 mg/kg	SCU	brd
Monoammonium Phosphate	LD50	2000 mg/kg	ORAL	RAT
	LD50	5000 mg/kg	DERMAL	RAT
Potassium Nitrate	LD50	1901 mg/kg	ORAL	RBT
	LD50	3750 mg/kg	ORAL	RAT
Potassium Sulfate	LD50	6600	Oral	RAT

- GENERAL:** The form in which this material is sold is considered to be relatively non-toxic.
- SKIN/EYE:** Direct contact may cause local irritation, but is not expected to cause significant tissue damage.
- INHALATION:** Acute inhalation may result in irritation, but is not expected to cause significant harmful effects. Symptoms may include discomfort, coughing, sneezing, and shortness of breath.
- INGESTION:** Ingestion of large doses can irritate the stomach, resulting in abdominal pain, nausea, diarrhea, and vomiting.

12. ECOLOGICAL INFORMATION

- Ecotoxicity:** No data available on the mixture. Components within the mixture can be damaging to aquatic organisms.
- Environmental Fate:** Product is not expected to bio accumulate. Release of components in this mixture to the aquatic environment can cause algae growth which may increase turbidity and displace oxygen resulting in a hazard to fish or other marine organisms. Will disperse with the current. Release to watercourses may cause effects down stream from the point of release. Avoid spills or release to watercourse.



13. DISPOSAL CONSIDERATIONS

Waste & Container Disposal: Do not wash down drain. Put uncontaminated material back into process if at all possible. Place contaminated material in suitable, labeled containers for disposal. Dispose of waste material consistent with the requirements of waste disposal authorities.

14. TRANSPORT INFORMATION

Shipping Information:	Not regulated for transport
Required Labels:	N/A
Environmentally Hazardous Substances [49 CFR 172.101, Appendix A]:	N/A

15. REGULATORY INFORMATION

Regulatory Lists:		
Ingredients listed on TSCA inventory	Yes	
Hazardous work hazard communication standard	No	
CERCLA Section 103 Hazardous Substances	No	
EPCRA Section 302 Extremely Hazardous Substance	No	
EPCRA Section 311/312 Hazard Categories	No	
EPCRA Section 313 Toxic Release Inventory	No	

16. OTHER INFORMATION

Prepared by:	PRO•SOL, PO Box 1589, Ozark, AL 36361-1589 Ph: 334-774-2515
---------------------	--

The information in this Material Safety Data Sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. All information concerning this product and/or all suggestions for handling and use contained herein are offered in good faith and are believed to be reliable as of the date of publication. Frit Industries, however, makes no warranty as to the accuracy of and/or sufficiency of such information and/or suggestions, as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. Nothing contained herein shall be construed as granting or extending any license under any patent. Buyer shall determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes, including mixing with other products. The information contained herein supersedes all previously issued bulletins on the subject matter covered.